A decorative scroll with a light beige background and a brown border. The scroll is held by four ornate, dark blue and gold-colored metal pins. The text is centered on the scroll. In the top-left and bottom-right corners, there are pink roses with green leaves. The background is a solid green color.

*Chapter – 2*

*Conservation*



## Mangroves and Coral reefs

### Introduction

- The Ministry is at the forefront in regard to conservation and management of mangroves & coral reefs and accords high priority to the conservation and management of Mangroves and coral reefs in the country. The Coastal Regulation Zone Notification (1991) under the Environmental Protection Act (1986) recognizes the mangrove and coral reefs areas as ecologically sensitive and categorizes them as CRZ-I (i) which implies that these areas are afforded protection of the highest order. Under the promotional measures, the Government has identified 38 mangrove areas and four coral reefs areas on a country-wide basis for intensive conservation and management. The details are given in Table-1 and Table-2 respectively.
- The National Policy, 2006 recognizes that Mangroves and coral reefs are important coastal environmental resources which provide habitats for marine species; protection from extreme weather events; and a resource base for sustainable tourism. The Policy also recognizes that mangroves, as indeed the other coastal resources like coral reefs & coastal forests, face threats from following quarters
  - poorly planned human settlements;
  - improper location of industries and infrastructure;
  - pollution from industries and settlements;
  - over exploitation of living natural resources;
  - inadequate institutional capacities for, and participation of local communities in, formulation and implementation of coastal management plans;
  - lack of consensus on means of provision of sanitation & waste treatment; and
  - the open access nature of many coastal resources.
- In view of these, the National Environment Policy underlines the need to mainstream the sustainable management of mangroves into the forestry sector regulatory regime and adopt a comprehensive approach to Integrated Coastal Zone Management.

### Progress of Activities Undertaken

- Mangroves in India account for about 5 percent of the World's mangrove vegetation and are spread over an area of about 4500 km<sup>2</sup> along the coastal States/UTs of the country. Sunderbans in West Bengal account for a little less than half of the total area under mangroves in India. The Forest Survey of India is assessing the vegetation cover of the country including mangroves using remote sensing since 1987. West Bengal has maximum of mangrove cover in the country followed by Gujarat and Andaman & Nicobar Islands. India is home to some of the best mangroves in the world. The Ministry has established a National Mangrove Genetic Resources Centre in Orissa.
- In case of Mangroves, the objectives of the Scheme is to help the Coastal State Governments/Union Territories in rehabilitation of degraded Mangrove Areas and enhance Mangrove cover by replantation in the open mud flats etc. Financial Assistance is given to coastal State Governments/Union Territories for implementation of Management Action Plan on Mangroves under the Scheme. 100% assistance is given on grant basis to Coastal States / Union Territories for activities like Survey and Demarcation, Afforestation, Restoration, Alternative / Supplementary Livelihoods, Protection Measures and Education & Awareness.

**Table-1. Mangroves Sites in India**

<b>State/Union Territories</b>	<b>Mangrove Sites</b>
West Bengal	1. Sunderbans
Orissa	2. Bhaitarkanika
	3. Mahanadi
	4. Subernarekha
	5. Devi
	6. Dhamra
	7. Mangrove Genetic Resources Centre
	8. Chilka
Andhra Pradesh	9. Coringa
	10. East Godavari
	11. Krishna
Tamil Nadu	12. Pichavaram
	13. Muthupet
	14. Ramnad
	15. Pulicat
	16. Kazhuveli
Andaman & Nicobar	17. North Andamans
	18. Nicobar
Kerala	19. Vembanad
	20. Kannur (Northern Kerala)
Karnataka	21. Coondapur
	22. Dakshin Kannada/Honnavar
	23. Karwar
	24. Manglore Forest Division
Goa	25. Goa
Maharashtra	26. Achra-Ratnagiri
	27. Devgarh-Vijay Durg
	28. Veldur
	29. Kundalika-Revdanda
	30. Mumbra-Diva
	31. Vikroli
	32. Shreevardhan
	33. Vaitarna
	34. Vasai-Manori
	35. Malvan
Gujarat	36. Gulf of Kutchh
	37. Gulf of Khambhat
	38. Dumas-Ubhrat

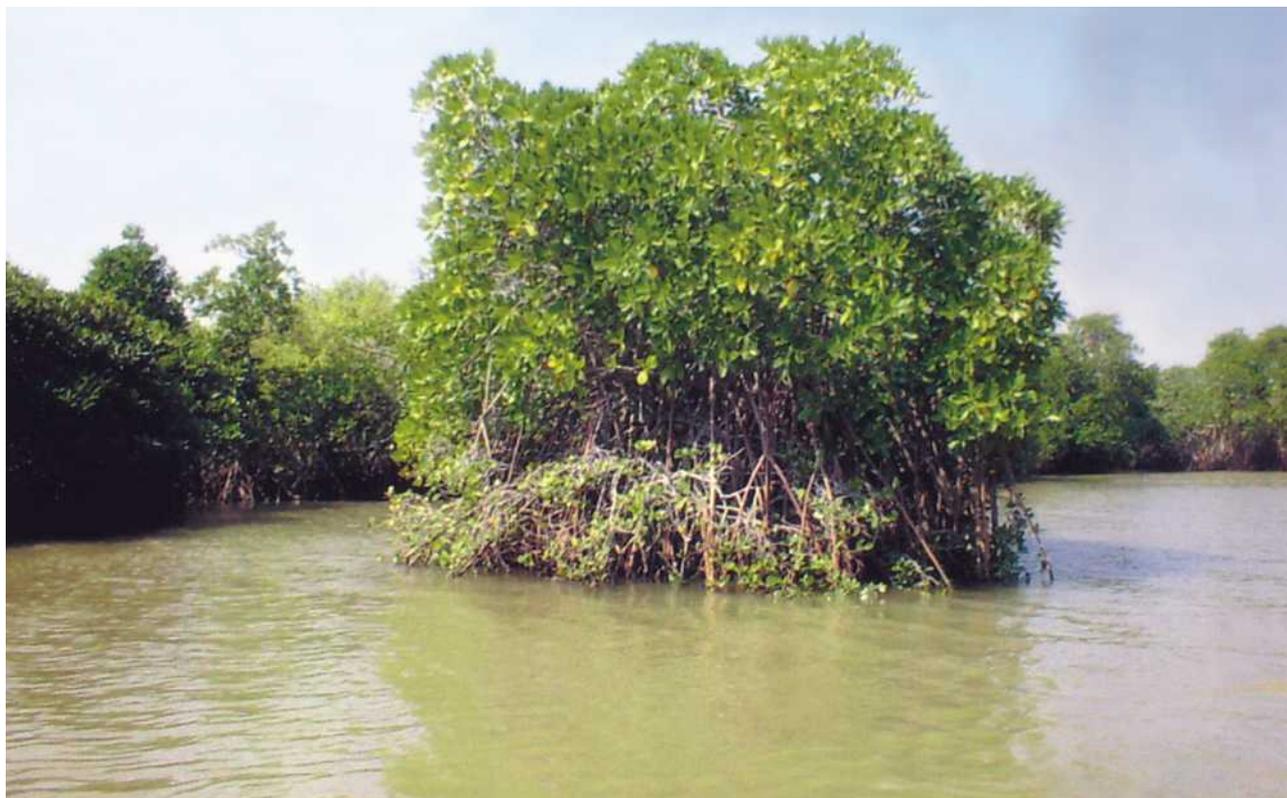


Fig.20 Pitchavaram Mangroves in Tamil Nadu

- The areas supported are among the 38 areas as already identified by the Ministry for intensive conservation. During the year, financial assistance to the tune of Rs. 5.25/- crores has been distributed among West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Goa and Gujarat for Conservation & Management of Mangroves in these coastal States. The National Committee has been duly reconstituted by the Ministry on 19 September, 2007.
- The project entitled “Mangroves for Future (MFF): a strategy for promoting investment in Coastal Ecosystem Conservation” is being coordinated by World Conservation Union (IUCN) covering, initially, six Tsunami affected countries (including India) in South & South East Asia & Western Indian Ocean. The project involves collaboration between multiple partners, including government agencies, NGOs, Research Institutes, UN agencies and other multilateral bodies.

India has agreed to participate in the project. To oversee and guide the entire India country programme under IUCN-MFF (India) Programme as well as to review, monitor and evaluate its implementation, a National Coordination Body (NCB) has been constituted by the Ministry. First meeting of the NCB was held on 21st October 2007. During the meeting, geographical areas for MFF activities (four States have been selected viz., Gujarat, West Bengal, Andhra Pradesh and Orissa) and consultancy needs for India specific programs were discussed. IUCN representative informed NCB that India will be able to source small grants consultancy projects (up to USD 25,000 each), as well as services of a Swedish consultant, free of cost, under the IUCN-MFF initiative. A Stakeholders Workshop has been held at GEER Foundation, Gandhinagar, Gujarat during February, 2008 with a view to assessing the Capacity building &

Training needs and discuss the National Strategy & Action Plan under the IUCN-MFF India Programme.

- With the aim of research dissemination & for providing an interface between researchers and stakeholders, the Ministry sponsored a National Workshop 'Mangroves in India: Biodiversity, Protection and Environmental Services' held at Institute of Wood Science & Technology, Bangalore during February 7-8, 2008.

### Coral reefs

- The four major coral reefs areas identified for intensive conservation & management are:
  - Gulf of Mannar
  - Gulf of Kachchh
  - Lakshadweep and
  - Andaman and Nicobar Islands.
- The emphasis is on preventive aspects through monitoring and surveillance as

the restoration work is both costly and time consuming. The Ministry provides financial assistance to the State Forest Departments of all the four identified coral reefs areas in the country for activities like monitoring, surveillance, education & awareness. Besides, the Ministry also supports R&D activities with emphasis on targeted research on coral biodiversity, its management including various aspects of pollution in these areas.

- The Indian reef area is estimated to be 2,375 sq.km. Recognizing that the year 2008 is the International Year of Coral Reefs, the Ministry has sponsored a Workshop entitled "Status of Coral Reefs in India" jointly organized by UT Administration of Lakshadweep and National Institute of Oceanography, Goa from 21-23 January, 2008 at Kadamat Islands, Lakshadweep.
- Two tier system at National and State level are in operation for effective coordination to implement the Scheme on Mangroves & Coral Reefs



Fig.21 Coral (*Acropora formosa*) needs extensive conservation

**Table-2. Coral Reef Sites in India**

State/Union Territories	Coral Reef Sites
Gujarat	i) Gulf of Kutch
Tamil Nadu	ii) Gulf of Mannar
A&N Islands	iii) A&N Islands
Lakshadweep	iv) Lakshadweep

### National level

- National Committee on Mangroves & Coral Reefs monitors the implementation of the approved Management Action Plans of the Coastal States & Uts.
- to supplement base line information on priority areas of research, research projects are sanctioned to Universities and research institutes. A meeting of the Expert Group-B on 'Conservation & Sustainable Utilization of Natural Resources: Mangroves & Coral Reefs' was held in September, 2007.

### State Level

- State level Steering Committee have been constituted under the Chairmanship of Chief secretaries / Additional Chief secretaries/Principal Secretaries of Department concerned having members from subject matter departments/ academicians/ stakeholders/representative from Central Government to discuss Management Action Plans and review conservation activities undertaken from time to time.
- In addition, the concept of Independent Evaluation by the State Government has also been invoked by introducing a special clause in the presidential sanction order itself and a modest budget is also being earmarked for the same.

- The Ministry has also carried out an independent evaluation of the achievements of the Scheme on Conservation & Management of Mangroves & Coral Reefs during the X Plan Period through GEER Foundation, Gandhinagar, Gujarat. The evaluation report is being finalized.

### Biosphere Reserves

#### Introduction and Objectives

- Biosphere Reserves are areas of terrestrial and coastal ecosystems which are internationally recognized within the framework of UNESCO's Man and Biosphere (MAB) programme. These Reserves are required to meet a minimal set of criteria and adhere to a minimal set of conditions before being admitted to the World Network of Biosphere Reserves designated by UNESCO. The world's major ecosystem types and landscapes are represented in this network, which is devoted to conserving biological diversity, promoting research and monitoring as well as seeking to provide models of sustainable development in the service of human kind.
- These Reserves are rich in biological and cultural diversity and encompass unique features of exceptionally pristine nature. The goal is to facilitate conservation of representative landscapes and their immense biological diversity and cultural heritage, foster economic and human development which is culturally and ecologically sustainable and to provide

support for research, monitoring education and information exchange. The scheme is a pioneering effort at pursuing the increasingly difficult yet urgent task of conserving ecological diversity under mounting pressures. India has been divided into ten Biogeographic Zones and these zones together consist of twenty five Biogeographic provinces. The aim is to designate one representative site as Biosphere Reserve in each Biogeographic province for long term conservation. A state wise list of Biosphere Reserves set up so far along with their area and location is given in Table-3.

#### Progress of Activities undertaken

- The Ministry has provided financial assistance to the respective State Governments for conservation and management of fourteen Biosphere Reserves designated so far. In addition Kachchh Biosphere Reserve in Gujarat has been designated as 15th Biosphere Reserve in the country on 29th January, 2008.
- The Kachchh Biosphere Reserve (KBR) has an extensive area of 12,454 sq. km falling in parts of Kachchh, Rajkot, Surendranagar and Patan Civil Districts of Gujarat State. The Biosphere is spread over the Greater Runn of Kachchh and the Little Runn of Kachchh and comprises of two important Protected Areas namely Kachchh Desert Wildlife Sanctuary and the Wild Ass Sanctuary. The area has a unique geological history which has contributed to the uniqueness of the landscape. The vast, open saline and arid landscape with mirages merging into the distant horizons are some of the very strong and unique attributes of the KBR landscape. The area is acclaimed for its unique and rich biodiversity such as the Indian Wild Ass (Endemic to this region), Caracal, Indian Grey Wolf Great Indian Bustard, Houbara Bustard, Lesser Florican, Spiny-tailed Lizard and a great variety of raptors. It also has the great conservation value because of it harbouring the breeding ground for Lesser and Greater Flamingoes.
- The area also has a unique cultural heritage. On the one hand, it is known for its nomads round the year traversing the rugged and hostile land of Kachchh on the other, the local people are known for their rare cultural expressions in the form of their unique hutments called "Bhoongas" and exquisite handicrafts, embroidery, colourful fabrics and other artifacts which are widely appreciated locally as well as globally. The area also has one of the most fascinating and intriguing Harappan sites at Dholavira which is considered to be one of the largest harappan sites discovered so far.
- In addition, a number of potential sites are under consideration out of which Cold Desert Biosphere Reserve in J&K and HP is at an advanced stage.
- Out of the Fifteen Biosphere Reserves designated nationally, four Biosphere Reserves namely Sunderbans (West Bengal), Gulf of Mannar ( Tamil Nadu ) , Nilgiri ( Tamil Nadu, Kerala and Karnataka) and Nanda Devi, (Uttarakhand) have been included in the World Network of Biosphere Reserves so far. The proposals in respect of Kanchanjunga (Sikkim), Manas (Assam), Simlipal (Orissa) and Pachmarhi (Madhya Pradesh) are in active consideration of the UNESCO for their recognition on the world Network. Efforts are being made for getting remaining Biosphere Reserves included in the World Network of Biosphere Reserves.
- Research and development projects are also supported in these designated Reserves and potential sites. A number of Research projects have been completed during the year which provided baseline data helpful in the scientific management of these Reserves.

**Table-3. State-wise list of Biosphere Reserves set up so far**

S.No.	Name of the BR & total geographical area (km <sup>2</sup> )	Date of Notification	Location (State)
1.	<b>Nilgiri (5520)</b>	1.8.86	Part of Wynad, Nagarhole, Bandipur and Madumalai, Nilambur, Silent Valley and Siruvani hills (Tamil Nadu, Kerala and Karnataka)
2.	<b>Nanda Devi (6497.03)</b>	18.1.88	Part of Chamoli, Pithoragarh & Almora Districts and Valley of Flowers (Uttarnchal)
3.	Nokrek (820)	1.9.88	Part of Garo Hills (Meghalaya)
4.	Manas (2837)	14.3.89	Part of Kokrajhar, Bongaigaon, Barpeta, Nalbari, Kamrup and Darang Districts (Assam)
5.	<b>Sunderbans (9630)</b>	29.3.89	Part of delta of Ganges & Brahamaputra river system (West Bengal)
6.	<b>Gulf of Mannar (10500)</b>	18.2.89	Indian part of Gulf of Mannar between India and Sri Lanka (Tamil Nadu)
7.	Great Nicobar (885)	6.1.89	Southern most islands of Andaman and Nicobar (A&N Islands)
8.	Similipal (4374)	21.6.94	Part of Mayurbhanj district (Orissa)
9.	Dibru-Saikhowa (765)	28.7.97	Part of Dibrugarh and Tinsukia districts (Assam)
10.	Dehang Debang (5111.5)	02.09.98	Part of Siang and Debang valley in Arunachal Pradesh
11.	Kanchanjunga (2619.92)	07.02.2000	Parts of North and West Sikkim.
12.	Pachmari (4926.28)	03.03.99	Parts of Betur, Hoshangabad and Chindwara, Distt.of Madhya Pradesh.
13.	Agasthyamalai (3500.36)	12.11.2001 (area expanded on	Parts of Thirunelveli and Kanya Kumari Districts in Tamil Nadu and Thiruvanthapuram, Kollam and Pathanmthitta.
14.	Achanakmar-Amarkantak ( 3835.51)	30.3.2005	Parts of Anuppur and Dindori districts of Madhya Pradesh and Parts of Bilaspur district of Chattisgarh State
15.	Kachchh (12,454)	29.01.2008	Parts of Kachchh, Rajkot, Surendranagar and Patan Civil Districts of Gujarat State

• Sites with bold letter have been recognized by UNESCO on World Network of BRs.

- An International Dryland Eco-system Workshop was jointly organized by UNESCO and Government of India at Jodhpur during 11-15 November, 2007. The workshop was structured to focus on the Dry land Eco system and has provided great opportunities to scientists especially Indian scientists associated with Dryland Research and Management to interact with international experts. This also provided opportunity to exchange techniques and appropriate technologies globally available for tackling problems associated with Dry Land Eco Systems.
- The workshop was also attended by South and the Central Asian MAB (SACAM) Network members comprising of Bangla Desh, Bhutan, India , Iran , Maldives, Nepal , Pakistan and Sri Lanka as well as experts and representatives from some other Dryland regions such as China, Israel, Russian Federation and some other countries. The SACAM came into existence as a result of the efforts by Indian MAB Committee in a meeting of coordinators of MAB National Committees and Biosphere Reserves held in Dehradun, India during 22-25 February, 2001. This network is operating principally in the context of Biosphere Reserves and similarly managed areas and focuses on a number of thematic topics for regional collaboration such as traditional ecological knowledge, biodiversity conservation, forest ecosystem, land degradation and rehabilitation in vulnerable ecological systems and waste management.
- The guidelines on protection, development, maintenance and research in Biosphere Reserve in India were reprinted with updated data for use by stakeholders.

## Regulatory Acts /Rules governing the programme

- The Core areas of the Biosphere Reserves continue to be protected under the Wild Life (Protection) Act, 1972 and Indian Forest Act, 1927 and Forest Conservation Act, 1980. However, separate Regulation within the framework of existing Environment (Protection) Act, 1986 is being firmed up to regulate activities within Buffer Zone of the Biosphere Reserves. Entities of Incomparable Value (EIVs) within Buffer Zones, as defined in the National Environmental Policy, 2006 shall be identified under new regulation.

## Biodiversity Conservation

### Introduction and Objectives

- Biodiversity is the variability among living organisms and ecological complexes of which they are part, including diversity within and between species and ecosystems. Biodiversity has direct consumptive value in food, agriculture, medicine and industry.
- A scheme on biodiversity conservation was initiated earlier to ensure coordination among various agencies dealing with the issues related to conservation of biodiversity and to review, monitor and evolve adequate policy instruments for the same.

### Progress of Activities undertaken

#### Convention on Biological Diversity

- The Convention on Biological Diversity (CBD), one of the key agreements adopted during the Earth Summit held in Rio de Janeiro in 1992, is the first comprehensive global agreement which addresses all aspects relating to biodiversity. The CBD, which has near universal membership with 190 countries as its Parties, sets out commitments for maintaining the world's ecological underpinnings, while pursuing economic development. The Convention,

while reaffirming sovereign rights of nations over their biological resources, establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources. India is a party to the CBD,

- Eight meetings of the Conference of the Parties (CoP) to the CBD have been held so far. The eighth meeting of CoP was held in Curitiba, Brazil from 20-31 March, 2006. The ninth meeting of CoP will be held in Bonn, Germany from 19-30 May, 2008.
- Pursuant to a decision of CoP-8, India hosted the Sub-Regional Workshop on the Review of and Capacity Building for CBD programme of work on protected areas for South and West Asia regions. The workshop was organized through the Wildlife Institute of India in Dehra Dun from 2-4 April, 2007.
- In pursuance of CoP-8 decision, four international meetings under CBD have been held so far. These include twelfth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-12) held in Paris, France from 2-6 July, 2007; second meeting of the

Ad hoc open-ended Working Group on Review of Implementation of the Convention (WGRI-2) held in Paris, France from 9-13 July, 2007; fifth meeting of the Open-ended Working Group on Access and Benefit Sharing (ABSOG-5) held in Montreal, Canada from 8-12 October, 2007; and fifth meeting of Ad hoc Open Ended Working Group on Article 8j and related provisions (WG 8j-5) held in Montreal, Canada from 15-19 Oct. 2007.

- Meeting of ABSOG-6 was held in Geneva, Switzerland from 21-25 January, 2008. ABSOG-5 focused on key substantive elements of International Regime (IR) for which India is actively negotiating member under CBD. There was stalemate between developed and developing countries during the negotiations on the elements of IR. during ABSOG-5 meeting, however some progress in positive direction was made during ABSOG-6 meeting which also considered nature, scope & potential objectives of IR.
- Regular meetings of the Consultative Group on Biodiversity issues were held (17.8.2007, 24.9.2007, 28.10.2007 and 11.01.2008) to advise the Government for preparing briefs for international meetings under the CBD and Biosafety Protocol and other related matters.

### National Biodiversity Action Plan (NBAP)

- Subsequent to the approval of the National Environment Policy (NEP) by the Cabinet in 2006, preparation of a draft NBAP in consonance with the NEP and using the final technical report of the UNDP/GEF project on National Biodiversity Strategy and Action Plan (NBSAP) has been undertaken.
- Comments on the Draft NBAP has been sought from various divisions in the Ministry and further the document was uploaded on the website of Ministry for comments from various related ministries,



Fig.22 Grand Duchess, *Euthalia patala* – an indicator of undisturbed habitats in Ban Oak Forest

government organizations, civil societies and general public. Based on all these comments the NBAP will be revised and Cabinet approval will be obtained.

- Information submitted by India on the documents of ABSWG-5 and ABSWG-6 meeting was incorporated in the final documents of the meeting. Having participated actively in the meetings organized by CBD Secretariat including ABSWG-5 and ABSWG-6. India has been active player for breaking the deadlock on the issue of IR while protecting the India's interest.
- India hosted the Sub-Regional Workshop on the Review of and Capacity Building for CBD programme of work on protected areas for South and West Asia regions. The workshop was organized through the Wildlife Institute of India in Dehra Dun from 2-4 April, 2007.

### Biological Diversity Act, 2002 (No. 18 of 2003)

#### Introduction and Objectives

- To regulate access to Genetic Resources and associated Knowledge and ensure Benefit Sharing arrangements, apart from developing policies and programmes on long term conservation and protection of Biological Resources and Associated Knowledge, the Act was promulgated

#### Progress of Activities Undertaken

- The National Biodiversity Authority (NBA) set up at Chennai on 1st October, 2003 as per the provisions of the Biological Diversity Act, 2002 is mandated to facilitate implementation of the Act. The Authority has held 3 meetings during the year and taken a number of important decisions including prescribing format for "agreements" to be signed between NBA and other parties seeking access to Genetic Resources And Associated

Knowledge and Notification of guidelines on collaborative Research. The Authority organized a number of seminars, symposia involving various stake holders to educate and create awareness in regard to provisions of the Act. The NBA has also considered a number of applications relating to access of Biological Resource and related matters.

- A three-tier structure namely National Biodiversity Authority, State Biodiversity Board and Local Management Committee has been felt necessary to deal with any matter concerning conservation of Biological Diversity, its sustainable use and fair and equitable sharing of benefits arising out of the use of Biological resources and associated knowledge as defined in the Act.
- In compliance to the provisions of the Act, 18 states have formed State Biodiversity Boards. These States are : Karnataka, Goa, Punjab, Madhya Pradesh, Arunachal Pradesh, Nagaland, Himachal Pradesh, Kerala, West Bengal, Uttar Pradesh, Mizoram, Chattisgarh, Manipur, Sikkim, Gujarat, Andhra Pradesh, Uttaranchal and Haryana. Other States are in process of establishing State Boards. Local level Bio-diversity Management Committees are also being formed in the States. Karnataka has already established 570 Biodiversity Management Committees. Likewise the States of West Bengal and Madhya Pradesh have also made substantial progress in this regard. These committees will play important role in conservation, preparation of Peoples Biodiversity Registers and shall charge access fees in respect of any biological resource or associated knowledge from their jurisdiction.

## Genetic Engineering Approval Committee (GEAC)

### Introduction and objectives

The Ministry under the Environment Protection Act (1986), has notified the "Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells 1989" (known as Rules, 1989). The Genetic Engineering Approval Committee, the apex body under the Rules, 1989 has the mandate to approve the large scale trials and commercial release of Living Modified Organisms (LMOs) and ensure that research and development and testing of LMOs prior to release are conducted in a safe and scientific manner. The rules also cover the application of hazardous microorganisms which may not be genetically modified. Hazardous microorganisms include those which are pathogenic to animals as well as plants. Seven meetings of the Genetic Engineering Approval Committee have been held from April, 2007 till date.

### Progress of Activities Undertaken

#### Commercial Release of transgenic Crops

- The Bt technology was deployed in cotton crop through genetic engineering techniques for control of bollworms the major pest thereby reducing the risk of crop failures and use of pesticides. Bt cotton producing a natural insecticide that comes from the ubiquitous soil bacterium known as *Bacillus Thuringiensis* was approved by the Genetic Engineering Approval Committee (GEAC) for introduction in India in 2002 after extensive biosafety and agronomic testing. As of date, the GEAC has approved 135 Bt cotton hybrids expressing Cry 1 Ac gene (MON 531 event) and stacked genes Cry1 Ac and Cry 2Ab (MON 15985 event)—BG-II developed by M/s Mahyco, encoding fusion genes (cry 1Ab+Cry Ac) 'GFM developed by M/s

Nath Seeds and cry 1Ac gene (Event-1) developed by M/s J. K. Agrigenetics Ltd of which 73 Bt cotton hybrids were approved for commercial release in the nine cotton growing states namely Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Tamil Nadu.

#### Accrued benefits of Bt technology in cotton crop include

- The total acreage under Bt cotton has increased from 72000 acres in 2002 to 128,44,000 acres (approximately 5.2 million ha) in 2007.
- The productivity per unit ha has increased from 300 kg in 2002-03 to 520 kg in 2006. As per the Cotton Advisory Board this is expected to increase more than 560 kg per ha.
- The cotton production has increased from 13.6 million bales in 2002 to 28.0 million bales in 2006. As per the Cotton Advisory Board estimates the production is expected to increase 31 million bales in 2007
- During Kharif, 2006, the area, the overall cotton production is up by 3835 K quintals of seed cotton or 788K bales of lint.
- Bt cotton reduced pesticide usage by 2260 MT of pesticides.
- India was a major importer of cotton till 2003. With the introduction of Bt technology India has become a major exporter. The export of cotton has increased from 0.9 million bales in 2005 to 4.7 million bales in 2006. As per the Cotton Advisory Board, the export is expected to increase to 5.5 million bales in 2007.

#### Transgenic Bt Brinjal developed by M/s Mahyco—First GM Food crop

The Bt brinjal developed by M/s Mahyco expressing cry 1Ac gene from *Bacillus thuringiensis* tolerant to the fruit and shoot



borer is the first GM food crop under advanced stage of field testing. The GEAC has approved the large scale field trials of Bt brinjal in the research farms of Indian Institute of Vegetable Research/State Agricultural Universities/ Indian Council of Agriculture Research based on the recommendations of the Expert Committee on Bt brinjal constituted by the MoEF.

### Streamlining of the Regulatory Procedure for transgenic crops

- The Ministry had constituted a Sub Committee to Review the Implications of the Hon'ble Supreme Court Directions dated 08.05.2007 regarding maintaining an isolation distance of 200 m during the field trials of GM crops and submission of an event specific protocol for 0.01% LOD. The Sub Committee's report has been accepted by the GEAC and the Ministry has filed an application for amending the above directions based on scientific rationale.
- The Ministry has set up a Sub-committee, to review the need for case by case regulation of Bt cotton expressing cry 1Ac (MON 531 event) which has been commercialized and is extensively being cultivated in majority of the cotton growing area since, 2002.
- Extensive information on the biosafety regulations, details of field trials, summary of biosafety data etc. have been made available in the public domain and may be viewed at [http://www.envfor.nic.in/divisions/csurv/geac/geac\\_home.html](http://www.envfor.nic.in/divisions/csurv/geac/geac_home.html) and <http://dbtbiosafety.nic.in>, [www.igmoris.nic.in](http://www.igmoris.nic.in).

### Capacity Building to facilitate compliance of Biosafety regulation

Extensive capacity building activities have been planned for efficient management of field trials of GM crops covering 12 states where the field trials are being undertaken.

Guidelines for confined field trials, safe operational practices (SOPs), formats for monitoring and recording of data etc. are being developed.

### Cartagena Biosafety Protocol

#### Introduction and objectives

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 Biological Diversity (CBD). The Protocol was adopted on 29th January, 2000. One hundred and forty three countries have signed the Protocol. India has acceded to the Biosafety Protocol on 17th January 2003. The Protocol has come into force on 11th September, 2003. As of date, 143 countries are Parties to the Protocol.

#### Progress of Activities Undertaken

#### Liability and Redress Negotiation under Article 27 of the Cartagena Biosafety Protocol

- The Ad Hoc Group on liability and redress was established by COP/MOP-1 to review information relating to liability and redress for damage resulting from transboundary movements of living modified organisms (LMOs); analyze general issues relating to the potential and/or actual damage scenarios of concern, application of international rules and procedures on liability and redress to the damage scenarios; and elaborate options for elements of rules and procedures on liability and redress, with a view to completing its work in 2007. As on date five meetings of the Ad Hoc Open-ended working Group on Liability and Redress have been convened. The Indian delegation actively participated in all the five meetings. Even though there was no consensus on the substantive issues, the Working Group, in its fourth meeting, was successful in streamlining and consolidating options for operational texts

which would be negotiated during the fifth meeting scheduled for 12-19 March, 2008 in Colombia. During the inter-sessional period Parties and Governments have been requested to submit their views on the report of the fourth meeting of the Ad Hoc Open ended Working Group on Liability and Redress.

- The fifth Meeting of the Ad Hoc Open Ended Working Group on Liability and Redress is scheduled for 12-19 March, 2008 at Cartagena, Colombia. India's country position and negotiating text has been prepared based on a consultative approach. The negotiating text has been extensively discussed in the meetings of the Consultative Group on Biodiversity and Biosafety and the Expert Advisory Group on Liability and Redress. The Ministry had also organized a 'National Consultation on Liability and Redress' on 14.1.2008 at New Delhi.

### Hosting International Meetings

The Fourth Coordination Meeting for Governments and Organizations Implementing or Funding Biosafety Capacity Building Activities during 11-13 February, 2008 and the Fifth Meeting of the Liaison Group on Capacity Building for Biosafety during 14-15 February, 2008 at International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi was organized by the Ministry of Environment and Forests jointly with Convention on Biological Diversity. The Meeting was inaugurated by Ms Meena Gupta, Secretary Environment and Forests, Government of India. The meeting was attended by 50 participants from developing and developed countries including donor agencies.

### Preparation of First National Report

As per decision BS-III/14, paragraph 3, all parties are required to submit their first regular national report on the implementation of the Cartagena Protocol on Biosafety, as called for

under Article 33 (Monitoring and Reporting) of the Protocol as per the prescribed format. India's first Nation Report on Implementation of the Cartagena Biosafety Protocol has been submitted in February, 2008.

### Fourth Meeting of the Conference of Parties serving as Members of Parties (COP-MOP-4)

The COP-MOP-4 is scheduled in May, 2008 in Bonn, Germany. Preparations for participation in the inter-sessional meetings to facilitate decisions in the meeting of COP-MOP-4 have been initiated.

### Capacity Building on Biosafety

#### Introduction and Objectives

The GEF World Bank Capacity Building Project on Biosafety (June 2004 to June 2007) to implement the Cartagena Protocol has been successfully completed. The GEF World Bank Capacity Building Project was aimed at Capacity building for:

- Strengthening institutional capacity;
- Strengthening technical capacity for LMO detection, risk assessment; and management.
- Sensitize & enhance awareness among stakeholders on biosafety related issues.

#### Progress of Activities Undertaken

The achievements and the success indicators of the Project are as follows

- *Component 1. Strengthening of institutional and legal framework to improve capacity and coordination in decision-making within and across Ministries*

In order to improve capacity and coordination in decision making on issues relating to Living Modified Organisms (LMOs), the GEF resources were used to strengthen institutional framework within as well as across the concerned Ministries, including Ministry of Environment & Forests, Department of Biotechnology, Ministry of Agriculture (MoA) Ministry of Food Processing Industries (MoFPI) Ministry of Health and Family Welfare

(MoH&FW), Ministry of Commerce and Industries (MoC&I) and Ministry of Finance. This component was achieved, inter alia, through training for core capacity development in relevant Central and State agencies and other specialized organizations.

– *Component 2. Improved capacity for risk evaluation and management*

- GEF resources were used specifically for training experts in risk assessment management including a review of the regulations guidelines and procedures with particular reference to information/data requirements in India by regulatory authorities. Capacity enhancement for molecular diagnostics to detect LMOs and capacity development to increase India's potential to monitor transboundary movements of LMOs was also carried out.
- A study was carried out by International Centre on Genetic Engineering and Biotechnology (ICGEB) and Research and Information System (RIS) on Environmental Risk Assessment, Socio-Economic Considerations and Decision-making support for LMOs in India. The study made the base line information on the risk assessment and socio-issues of LMOs, Identified problem areas and suggested policy recommendations.

– *Component 3. Strengthening of laboratories/institutions for analytical detection of LMOs*

This was achieved through: identification of laboratories/institutions for analytical evaluation of GM ingredients, providing infrastructure and equipment for the identified laboratories/institutions. Four institutions viz. Central Food Technological Research Institute, (CFTRI), Mysore, National Bureau of Plant Genetic Resources (NBPGR), New Delhi, National Research Center on Plant Biotechnology (NRCPB), New Delhi and G.B. Pant University of Agriculture and Technology, Pantnagar, were strengthened for LMO

detection and data base development.

– *Component 4. Biosafety Clearing House(BCH) and Enhanced information sharing and public awareness*

- In compliance with Article 20 of the Cartagena Protocol on Biosafety mandates to establish a BCH by each Party, India established the BCH (<http://indbch.nic.in>) under the Project. In order to facilitate the information sharing and improve the networking within the country, a project website has also been set-up and a quarterly biosafety newsletter has been published regularly. Eight editions with 16,000 hard copies have been circulated, besides the electronic version of the newsletter. A Project Website on Biosafety Capacity Building has also been developed and hosted in the Ministry's website.

*Training and Awareness*

- Training has been identified as one of the key elements for capacity building of various stakeholders to strengthen the institutional and legal framework for implementation of Protocol at Central and State levels so also in relevant specialized Institutions. To ensure systematic training programs, a Training Needs Assessment Survey was undertaken. To assess the requirements of various stakeholders in the public and private sectors specifically for genetically engineered crops including plants used for biopharmaceutical products, livestock and the products derived from these (including food).
- Sixty Seven training programmes were organized and 4704 persons participated /trained in these programmes. Relevant stakeholders viz. government departments /agencies, regulatory bodies, relevant laboratories for LMO detection, custom, quarantine officials, journalists, school children, farmers, lawyers, end users were addressed for trainings & awareness campaign.

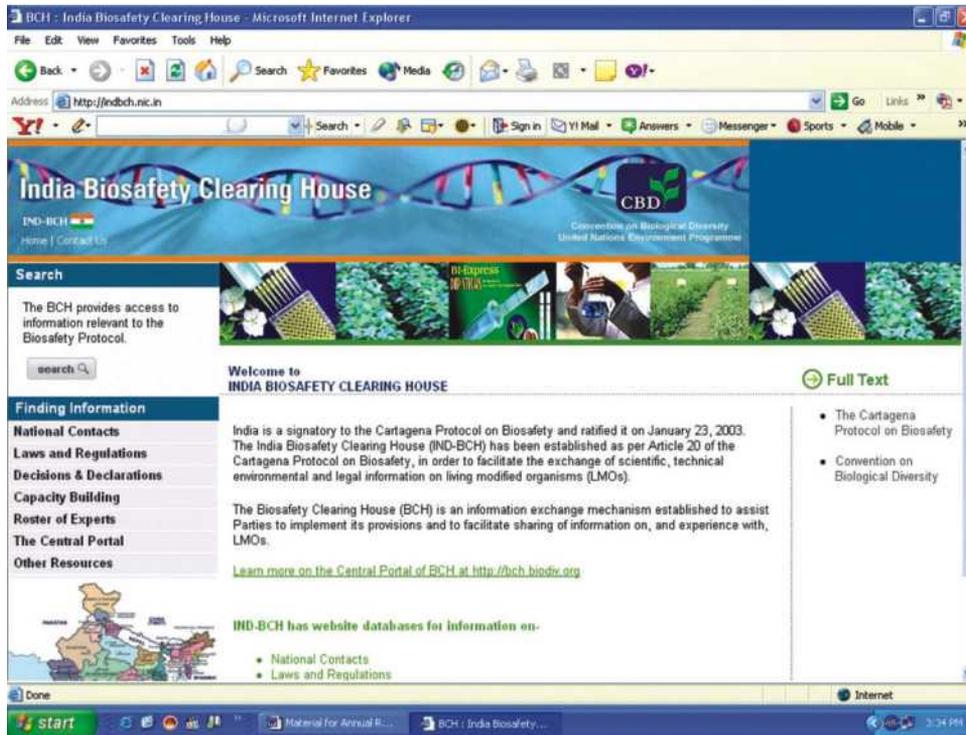


Fig.23 Website of Biosafety Clearing House

- A closing workshop was organized on 6 November, 2007, in which the Project Completion Report was circulated. The project had USD 1 million contributions from GEF and a matching contribution of USD 2.07 million (in kind) from Government of India.

### All India Coordinated Project on Capacity Building in Taxonomy (AICOPTAX)



Fig.24 Distribution of sapling to villagers of Medak District on International Biological Diversity Day celebrations

### Introduction and Objectives

- Taxonomy is the science which helps in exploration, identification and description of living organisms. However, the scope of taxonomy does not end with this. A sound taxonomic base is a pre-requisite for environmental assessment, ecological research, effective conservation, management and sustainable use of biological resources.

### Progress of Activities Undertaken

- About 90,000 species of animals and 47,000 species of plants have been identified and described so far. A large number of animals and plants are yet to be explored, identified and described.
- As a signatory to the Convention on Biological Diversity (CBD) held in Rio de Janeiro in 1992, India has committed itself to capacity building in taxonomy and taken up exploration and preparation of an inventory of living organisms. The Ministry has set up an All India Coordinated Project on Taxonomy. The

Project has organized specialist groups drawn from Universities, Botanical and Zoological Surveys of India to take up taxonomic work on animal viruses, bacteria and archaea, algae, fungi, lichens, bryophytes, pteridophytes, gymnosperms, palms, grasses, bamboos, orchids, helminthes and nematodes, Microlepidoptera and Mollusca.

- Training in plant and animal biosystematics has also been recognized as an important component. The Scheme has been continued during 2007-08 and financial assistance has been provided to various units for undertaking taxonomic research work. The Ministry sponsored a workshop on training in Plant Taxonomy during January 2008 at Forest Research Institute, Dehradun.
- Several new records of wild flora and fauna have been made. Various new species have also been discovered. These are being documented and verified with voucher specimens for authenticity before publication during the XI Plan Period. Discovery of species new to science will be the major impact of the AICOPTAX Scheme. Efforts are also being made to ensure that Taxonomy is revived and resurrected during the XI Plan.

### Botanic Garden of the Indian Republic (BGIR), Noida

#### Introduction and Objectives

- The BGIR was inter-alia set up to facilitate ex situ conservation and propagation of rare and threatened indigenous plants of the country, serve as a 'Centre of Excellence' for research and training and thereby cater to the need for conservation of endangered species in the region, and build public awareness on the conservation needs through education on

conservation of plant diversity. The scheme was identified as a "Green Channel" project under the National Jai Vigyan Science & Technology Mission of the Ministry of Science & Technology and approved by the Planning Commission. The Expenditure Finance Committee (EFC), Ministry of Environment & Forests, approved the BGIR project on 17th January, 2002, with a project outlay of Rs. 3775.85 lakhs.

- The BGIR is presently carrying out the basic scientific/technical work to facilitate project execution in context of research/field operations.

#### Progress of Activities Undertaken

##### – Woodland Development Programme

The Programme continued with about 350 plants being introduced in the south eastern section of the woodland to develop a Red Sander Mixed Forests, about 375 plants species being introduced in the northern section of the woodlands for development of Dry Deciduous

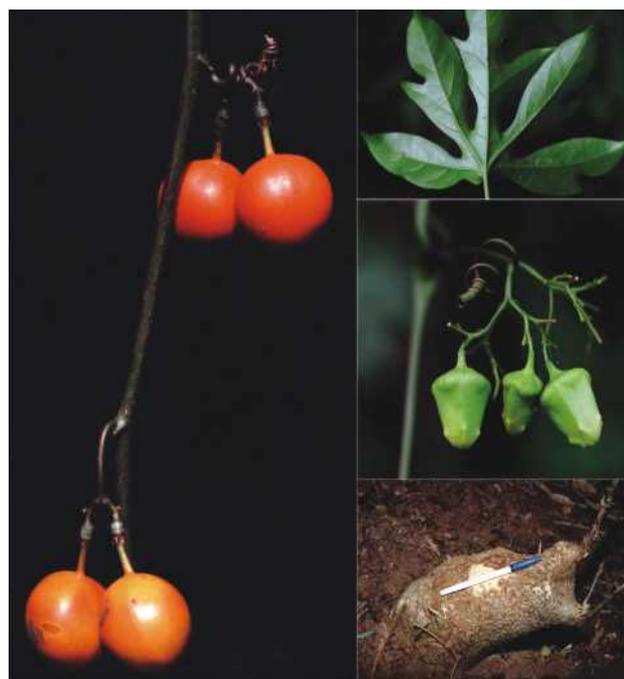


Fig.25 *Adenia bondala* – a prioritized medicinal plant

Gangetic forest subtype, and about 20 species being introduced in the Ficus Arboretum in the western section of the woodland; the introduced species included *Ficus beddomei*, *Ficus mysorensis*, *Ficus benjamina*, *Ficus religiosa*, *Ficus benghalensis*, *Ficus recemosa*, *Ficus lyrata*, etc.

#### – Plant Introduction/Conservation Programme

As part of the ex situ conservation programme, about 25 different species of palms such as *Tachycarpus takil*, *Licuala grandis*, *Caryota urens*, *Calamus circinalis*, *Calamus travancoricus*, were introduced/conserved in BGIR. Seed germination trials yielded 45% success with *Hyphaene dichotoma* and 25% success with *Bentinckia nicobarica*, a rare endemic palm of Nicobar Island. The critically endangered plant, *Frerea indica*, was also multiplied/propagated. About 20 seedlings of the endangered tree species, *Hildgardia populnifolia*, were raised from seeds and introduced in the woodlands. Seeds of *Dillenia indica* brought from Meghalaya were sown for germination. About 85% of success was observed in the rate of germination. Plant procurement tours were undertaken for germplasm collection; about 8000 seedlings belonging to 85 species were collected. About 25 species of orchids and three species of ferns were procured from Eastern Himalaya and introduced in BGIR.

#### – Conservation Research/Training Programmes

- BGIR participated in the Darwin Initiative project on Orchid Seed Storage for Sustainable Use (OSSSU) through a training workshop held at Chengdu, Sichuan Province, China, during October 2007. Two BGIR officials attended the workshop and underwent training in the methodologies of orchid seed collection, handling and storage. The herbarium

development work continued with 235 herbarium specimens identified and incorporated in the BGIR herbarium.

- As part of the Digital Flora of NCT Project, eleven new records for the area were made; the new distributional records include: *Digitaria longiflora* (Retz.) Pers, *Paspalidium geminatum* (Forsk.) Stapf, *Digitaria violascens* Link, *Murdania nudiflora*(L.) Brenan, etc. The rare and endangered orchid, *Paphiopedilum druryi*, flowered in the orchid section of the garden in the month of February, 2007. The other orchids which flowered in the Orchid section of BGIR are *Trodelia cristata*, *Dendrobium lindleyi* and *Dendrobium nobile*. This is the first known record of flowering of these orchid plants in Delhi region. The Database Development Programme work has resulted in publication of a book on Database of Oil Yielding Plants.



Fig.26 *Argeria nervosa* - a medicinal plant conserved at BGIR

## – Medicinal Plants Conservation Programme

A Medicinal Plants Section, Ayur Vatica, was developed at BGIR. The Ayur Vatica displays a total of 96 medicinal plants in its formal section, which is divided into eight sectors each containing 12 species laid out thematically according to their therapeutic use in treatment of various ailments generally in the Ayurvedic system of medicine. The medicinal plants (herbs, shrubs and trees) arranged in these eight sectors are identified which help to cure the following organ systems/ailments:

- digestive system,
- blood and circulatory system,
- musculo-skeletal system,
- skin diseases,
- urino-genital system,
- respiratory system,
- inflammation/fever and
- nervous system.

The Ayur Vatica will shortly exhibit the medicinal plant wealth of the country and promote their sustainable utilization and conservation. Many other medicinal plants are grown in the miscellaneous section of the garden. An education programme was conducted for school children during February, 2008 (commemorating the National Science Day) to make them aware of the plant wealth of the country, including medicinal and threatened plants, as well as sensitising them on issues of waste management through BGIR's Bio-Waste Management Demonstration Project.

## – Implementation of Master Plan

The School of Planning & Architecture (SPA) has agreed to take over the consultancy in an institutional capacity. The landscape design/Master Plan would be suitably modified/re-designed by the (SPA) to build in necessary

components essential to meet the requirements of the botanic garden in consultation with the user/client department.

## UNDP –GOI CCF II Project on promoting Conservation of Medicinal Plants and Traditional Knowledge for enhancing Health and Livelihood Security.

### Introduction and Objectives

The project was initiated in 2005-06 at an estimated cost of Rs. 12.00 crores and is being implemented in nine States. The Foundation for Revitalization of Local Health Tradition (FRLHT), Bangalore is coordinating the project. The States namely Andhra Pradesh, Kerala, Tamil Nadu, Madhya Pradesh, Rajasthan, Orissa, West Bengal, Karnataka and Maharashtra are participating in the project. The main objectives of the project are

- To assist nine project states to conserve wild population of medicinal plants

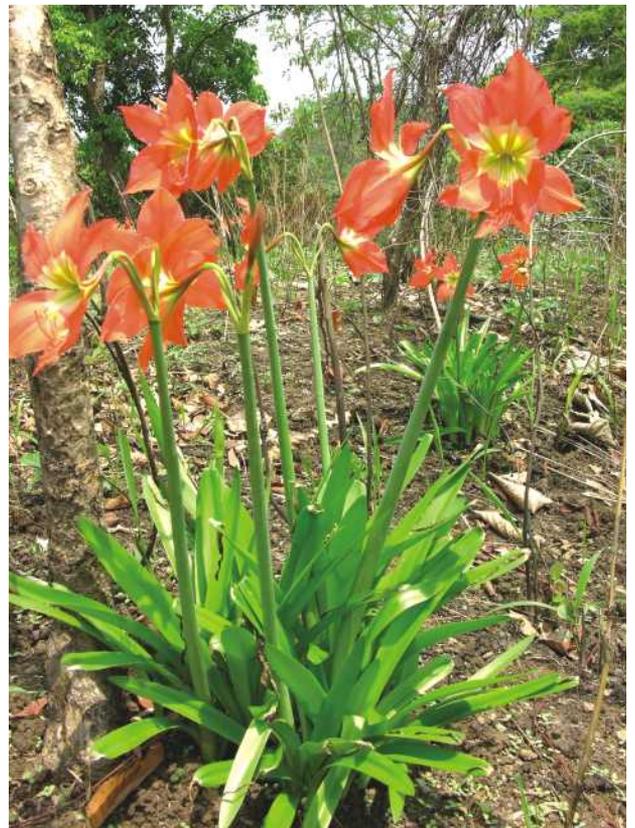


Fig.27 An important medicinal plant from Meghalaya

- To revitalize the indigenous health care knowledge and
- To enhance the health and livelihood security.

### Progress of Activities Undertaken

- A high level Project Management Board (PMB) to oversee and facilitate the inter-departmental coordination and an Empowered Project Steering Committee (EPSC) to guide the implementation of the Project have been constituted. The Technical Coordination and implementation of the project is being done by the Foundation for Revitalization of Local Health Traditions, Bangalore. The field level project components are being implemented by the respective State Forest Departments and selected NGOs.
- The Project States have constituted Project Steering Committees and have prepared work plans for their respective components. The process of identification of sites for establishing Medicinal Plants Conservation Areas (MPCAs) in four states, establishment of sustainable harvest of NTFPS and medicinal Plants in three states, need assessment for central seed centers in four states, capacity building for establishing Home Herbal Gardens (HHGs) has started. Rapid Threat assessment exercises called Conservation Area of Medicinal Plants (CAMP) workshops, as per IUCN guidelines for prioritized medicinal Plants species, are being organized in three states viz; Orissa, Rajasthan and West Bengal.
- During the year, site identification for establishing Medicinal Plant Conservation Area (MPCAs) was completed and threat assessment exercises were carried out. All the participating states are making good progress and their performance is satisfactory.

## Assistance to Botanic Gardens

### Introduction and Objectives

The scheme on Assistance to Botanic Gardens and Centers for ex-situ conservation was initiated in 1992 to augment ex-situ conservation of rare endemic plants. One time financial assistance is provided to the Botanic Gardens and Centres of Ex-situ Conservation, for improvement of their infrastructural facilities to facilitate ex-situ conservation of rare endemic plants. The achievements made in these Botanic Gardens are periodically monitored with the help of Botanical Survey of India.

### Progress of Activities Undertaken

- The Ministry has constituted an Expert Group to identify and recommend proposals received under the scheme. The Botanical Survey of India helps in identification of rare endemic plants requiring ex-situ conservation. During the year seven proposals for Botanical Gardens have been approved for funding as given in Table-4.
- The revised guidelines for the scheme were circulated to various states for submission of suitable proposals. It is expected that the network would cover approximately 1/3rd of the districts of the country by the end of 11th Five Year Plan.
- The Revised Guidelines envisages establishment and promotion of Lead Gardens in each phyto-geographic zone. Based on the criteria prescribed in the guidelines, three proposals have been received for development of 'Lead Gardens' in different phyto geographic zones of the country. These Lead Gardens shall provide necessary expertise for smaller gardens, and shall be equipped with modern facilities.

**Table-4. List of Project sanctioned during 2007-08 under Botanic Garden Scheme for improvement of Infrastructural facilities**

S. No.	Name of Organization
1	Abasheb Marathe Arts and Commerce Science College, Ratnagiri, Maharashtra
2.	Holly Cross College, Nagercoil - 629 004
3.	Social Forestry Division, Sardarbagej, Junagadh – 362 001
4.	Swami Ramanand Tirth Rural Institute Jalalpur (V) Bhoodhan Pochampally (M) Nalgonda Distt. 508 284, Andhra Pradesh
5.	University of Delhi, Delhi
6.	Divisional Forest Officer, Wildlife Khasi Hills District Oakland, Shillong 793 001
7.	Directorate of Research, Junagadh Agricultural University, Junagadh 362 001, Gujarat

## Forest Conservation

### Introduction and Objectives

The mandate of the Forest Conservation Division is to implement the Forest (Conservation) Act, 1980, which was enacted on 25 October, 1980. This Act deals with grant of forestry clearances for diversion of forest lands for non-forestry purposes in respect of development projects like power, roads, railways, irrigation, mining, schools, defence, drinking water, resettlement & rehabilitation of people etc. This Act in regulatory is nature, not prohibitory.

### Progress of Activities Undertaken

- Since its enactment in 1980 till 31st December, 2007, about 16,939 developmental projects involving 11.56 lakh hectares forest area have been granted forestry clearance. These include the projects for power generation, irrigation, construction of roads, railway lines, transmission lines, drinking water supply projects, village electricity, schools, hospitals etc. Out of these, 2244 developmental projects of various categories involving 84275.55 hectares of forest land, have been granted forestry clearance under the Forest (Conservation) Act, 1980 during the year (upto 31st December, 2007).

- Further, to boost the development of underdeveloped area, one time clearance has been granted under Forest (Conservation) Act, 1980 for public utility developmental projects involving not more than one hectare of forest land, to be executed by Government Department namely, schools, dispensary/hospital, electric and telecommunication lines, drinking water, water/rainwater harvesting structures, minor irrigation canal, non-conventional sources of energy, skill up-gradation/vocational training centre, power substations, communication posts and police establishments like police stations/outposts/border outposts/watch towers, in sensitive areas. The validity of general approval has been further extended upto 31.12.2008.
- In tribal areas, general approval under Section-2 of the Forest (Conservation) Act, 1980 has been accorded for underground laying of electric cable and wires to individual household, drinking water supply/water pipelines, telephone lines which involve felling of trees not exceeding 50 numbers per project and are outside the National Parks and Sanctuaries and are laid along the road and validity of the general approval has been extended up to 31.12.2008.

- To provide better means of communication and accessibility to the nearest market to tribal and rural people, it has been conveyed to the State/Union Territory (UT) Government through a set of detailed guidelines issued under this Act, that for up-gradation of roads constructed in forest areas prior to 1980, from 'Kurchcha to Pucca', without widening, prior permission of Central Government under Forest (Conservation) Act, 1980 is not required. However, if any such projects fall in a National Park/Sanctuary prior permission of National Board of Wildlife (NBWL) and the Supreme Court is essential.
- To provide better living conditions to the tribal and rural people, Central government has issued general approval under Forest (Conservation) Act, 1980 to permit the right holders recognized under Indian Forest Act, 1927, to collect the stones/slates/boulders etc. from forest areas for their bona fide domestic use subject to certain conditions. No commercial use is permitted under this dispensation.
- Government also issued directions to the State/UT Governments not to evict the tribal and forest dwellers, other than ineligible encroachers, from forest lands till the process of verification of their rights is complete. Fresh guidelines for verification/ recognition of rights of tribal forest dwellers on forest land for settlement of disputed claims have also been issued on 3 November, 2005. These guidelines provide for constitution of village level, block level and district level Committees, procedure to be followed, nature of admissible evidence and criteria for accepting claims for settlement of rights.
- Good practices have been adopted to ensure transparency in the system of forestry clearances. Dates of meeting to be held every month in the Ministry and its

Regional Offices have been fixed. Rules, guidelines, status of proposals, approvals are displayed on the Website of the Ministry.

## Regional Offices

### Introduction

The Ministry has six Regional Offices located at Bangalore, Bhopal, Bhubaneswar, Lucknow, Shillong and Chandigarh with its headquarter in the Ministry at New Delhi. (Annexure-II-A)

### Objective

The primary function of the Regional Offices are to monitor and evaluate the ongoing forestry projects and schemes with specific emphasis on conservation of forests and follow up action on the implementation of conditions and safeguards laid down by the Ministry which granting clearance to development projects under FCA, 1980 and EPA, 1986.

### Progress of Activities Undertaken

The Regional Chief Conservators of Forests are empowered for approval of diversion of forest land for non-forestry purposes upto the extent of five ha. (except mining and regularization of encroachment) and to process cases between 5 ha to 40 ha. In consultation with the State Advisory Committee and to undertake physical inspection of sites in cases of diversion of forest lands to non-forestry purposes involving an area of more than 100 ha. Statement showing Region wise physical/financial targets and achievement for monitoring of approved project under FCA, 1980 and EPA, 1986 during the year (up to 31-12-2007) are given in Table – 5.

## Integrated Forest Protection Scheme

### Introduction and Objective

- Integrated Forest Protection Scheme (IFPS) was being implemented during the X Five year Plan and is being continued during XI

**Table-5. Statement showing Region wise physical/financial targets and achievement for monitoring of approved project under FCA, 1980 and EPA, 1986** (Rs. in crores)  
during the year (up to 31-12-2007) (Phy. in No.)

Physical Targets					Financial Target			
	FCA		EPA		Revenue		Capital	
2007-08	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
	651	359	821	826	5.80	4.03	0.50	0.49

**Physical Targets Regional Office-wise for 2007-2008 (Upto 31-12-2007)**  
(Phy in No.)

S.No.	Regional Offices	FCA		EPA	
		Target	Achievement	Target	Achievement
1	Bangalore	151	113	151	277
2	Bhopal	145	25	180	98
3	Bhubaneswar	60	59	80	110
4	Lucknow	150	75	200	189
5	Shillong	50	36	60	43
6	Chandigarh	95	51	150	109
7	RO(HQ)	Coordination /Monitoring the work of Six Regional Offices of the Ministry			
	<b>Total</b>	<b>651</b>	<b>359</b>	<b>821</b>	<b>826</b>

Plan. The Planning Commission has suggested to rename the Scheme as "Intensification of Forest Management" during 11th Five Year Plan. It is proposed to broadbase the scheme by including following two new components in addition to the existing components of IFPS i.e. Infrastructure Development & Forest Fire Control Management.

**New Components**

- Conservation and Restoration of unique vegetation and Eco-systems.
- Protection and Conservation of Sacred Groves.

– The Central Sector Component of the Scheme is to be implemented by the Forest Protection Division of the Ministry in association with Forest Survey of India, Dehradun and other Central Institutions like Indian Council of Forestry Research and Education, Dehradun, Indian Institute of Forest Management, Bhopal etc. The State Sector Component of the Scheme is being implemented by the Forest Departments of the concerned State Governments and UTs.

– The Central Assistance is provided for various activities which would help to protect and improve the existing forests. The major items of expenditure include

communication, mobility, fire fighting measures, construction of offices and residences particularly of the front line staff, technology upgradation and skill development, survey and demarcation and writing of working plans, assistance to JFMCs etc.

### Progress of Activities Undertaken

- A National Workshop on Forest Fire, inaugurated by Hon'ble Union Minister of State for Environment & Forests was held on 13 - 14 November, 2007 at Vigyan Bhawan, New Delhi.
- Joint Forest Management (JFM) – the conceptual frame work for JFM emphasizes development of partnerships with forest fringe people. Guidelines on JFM have been updated from time to time focusing on the management and utilization of NTFPs in coordination with PRIs at various levels. Presently there are 1,06,479 JFMCs managing an extent of 22.02 mha. involving 21.99 million people of forest area.

### Management of Gregarious Flowering of Muli Bamboos in North-Eastern States of India

#### Introduction and Objectives

- The Steering Committee set up by the Ministry with representatives from North-Eastern States and concerned Ministries/Departments/Agencies under the Government of India approved the revised action plan for Rs.366 crores on 20 July, 2005 for management of prospective gregarious flowering of bamboos in the north-eastern states to tackle the ecological, social and economic problem likely to arise out of the gregarious flowering of Muli Bamboos (*Melocanna baccifera*) in NE states.
- The Scheme has been finally approved on 30 March, 2006 by the Planning Commission and the Ministry of Finance for implementation from 2005-06 to 2008-09 with a total project outlay of Rs

85.00 crores. A total of seven NE states are implementing the project along with ICFRE.

#### Progress of Activities Undertaken

- The Ministry on August 31, 2004 constituted a Central Monitoring Committee (CMC) to monitor the progress of action taken on implementation of the action plan.
- The CMC has so far held seven meetings. The last meeting was held on 18 September, 2007 at Guwahati, Assam under the chairmanship of DGF & SS and reviewed the progress of implementation of the Action Plan.



Fig.28 Bamboo flowering in Mizoram

- So far an amount of Rs. 61.5441 crores has been released till December 31, 2007 to the NE States for implementation of components of Action Plan approved to be implemented with the funds provided under the new Centrally Sponsored Scheme. The State-wise details is given in Table – 6.

### Forest Policy

#### Introduction and Objectives

- Non-Legally Binding International Instrument for sustainable development of all types of forests has been agreed to as Global Forest Policy by all member countries of the United Nations and

**Table-6. State-wise details of the amount released during last two financial years and till 31st December of current Financial Year.**

S.No.	Implemen-ting States	Total approved allocation under CSS Scheme (2005-06-2008-09)	Amount released during FY 2005-06	Amount released during FY 2006-07	Amount released since 2005-06 till Dec 31,2007
1	Arunachal Pradesh	1.50	00.10	00.65	0.75
2	Assam	13.00	03.25	00.00	5.295
3	Manipur	09.90	02.41	3.034	8.444
4	Meghalaya	06.80	01.71	00.00	5.21
5	Mizoram	23.60	03.00	10.332	15.9635
6	Nagaland	08.00	02.10	4.219	7.999
7	Tripura	21.20	05.25	6.065	17
8	ICFRE	01.00	00.00	00.70	0.8826
	<b>Grand Total</b>	<b>85.00</b>	<b>17.82</b>	<b>25.00</b>	<b>61.5441</b>

adopted by General Assembly with the following Global Objectives:

- Reverse the loss of forest cover worldwide through Sustainable Forest Management (SFM), including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation;
  - Enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest dependent people;
  - Increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests; and
  - Reverse the decline in ODA for SFM and mobilize significantly increased new and additional financial resources from all sources for the implementation of SFM.
- The Government of India has assigned the ownership of minor forest produce to the people living in and around forests for the purpose of collection, processing, trade and marketing through a national level legislation named as the Scheduled tribes and Other Traditional Forest Dwellers (Recognition of Forest rights) Act, 2006. This will help the forest dependent people to improve their economy, and will also enhance contribution of forests towards achievement of Millennium Development Goals (MDGs).

#### Progress of Activities Undertaken

- National Forest Commission (NFC) is the first of its kind ever. Constituted earlier, it submitted its report on 28 March, 2006. The Commission took a view for long term betterment of Forests and wildlife in India as well as safeguarding the interest of forest dependant communities and also maintained the national commitment for ecological security of the country as mandated in National Forest Policy.

- It was mentioned that Forests are not just trees –let alone the commercially valuable ones-not even NTFP, but the wetlands, grasslands and all other forest lands with whatever animate and inanimate life below and above those lands, and also include ecological services and water. The Commission has also emphasized on the need of political commitment, infrastructural and adequate financial resources to forest & Wildlife sector.



Fig.29 Honey collection by using human face mask to keep away the tigers in Sundarbans

- The NFC obtained the response of public and other stakeholders through public notice and questionnaires and interacting with 22 public representative, 35 state/UT Governments, three Central Ministries, three Forest corporation, 10 service associations 25 research/education institution, 30 NGOs, nine village level organizations, four representatives of industry, international institutions, researchers, tribals forest dwellers and interested citizens.
- The report examined the current status of forests, review of forest policy, legal framework, institution and administrative structure of forestry sector. The goals and constraints of the forestry sector, approach to forests, wildlife and nature conservation, farm and agro-forestry, centre- state relations, forest and local communities have been considered in depth. The report also examined forest related international instruments, forestry research, relation between forestry and industry, forests and local communities in depth.
- The report has 23 chapters, of which 20 chapters, from 2 to 21, deal with various subject like “Forest Policy”, “Legal Framework”, “Forest Administration”, “Personnel Management” etc. However, realizing the importance of specific issues, topics like “Forest of North East”, “Agro Forestry & Social Forestry”, “Forests in National Resource Accounting” and “Financial Support” has been dealt in separate chapters. The report has 360 recommendations, which in general are agreeable except those recommendations (75, 137, 307, 308, 309 & 310) on which dissent note was given by the majority members of NFC. Action is to be taken by Government of India as well as State/UT Governments.
- World Forestry Day was celebrated on 21 March, 2007 with a theme on Forest and Poverty. Shri Chandi Prasad Bhatt, an environmental activist had delivered key not address.
- A National Level Consultation on the implementation of Scheduled tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 was convened on 25 June, 2007 with state/UT Governments and other central Ministries on the implementation of this legislation. Forest Secretaries, PCCFs and Chief Wildlife Wardens of the State/UT Governments participated and expressed their views.

## Wildlife Conservation

### Introduction and Objectives

- The Indian Constitution entails the subject

of forest & wildlife in the Concurrent list. The Federal Ministry acts as a guiding torch dealing with policies and planning on wildlife conservation while the State Forest Departments have been vested with the responsibility of implementation of national policies and plans.

- The Wildlife Wing in the Ministry, headed by Additional Director General of Forests (WL) and Director, Wildlife Preservation has two Divisions, namely, Project Elephant Division and Wildlife Division, each headed by an officer in the rank of Inspector General of Forests. In addition three autonomous bodies viz, National Tiger Conservation Authority (NTCA), Central Zoo Authority (CZA) and Wildlife Institute of India (WII) have been constituted for tiger conservation, zoo management, research and training in wildlife respectively under the Ministry. The National Zoological Park in the capital is also a part of the wildlife wing of the

Ministry. In year 2006, the Project Tiger Directorate has been converted into an autonomous body, viz, National Tiger Conservation Authority by an amendment in the Wildlife (Protection) Act, 1972. In tune with the amendment to the 2006 amendment to the Wildlife (Protection) Act, 1972, a Wildlife Crime control Bureau has also been established.

- To combat wildlife related crimes, a Wildlife Crime Control Bureau under the Director, Wildlife Preservation has been constituted with five Regional Offices viz, Delhi, Mumbai, Kolkata, Chennai and Jabalpur and three Sub-regional offices at Amritsar, Guwahati and Cochin.
- The Ministry provides necessary technical and financial support to the State Governments for wildlife conservation under various Centrally Sponsored Schemes (CSS) which include schemes for Development of National Parks and Sanctuaries, Project Elephant, Central

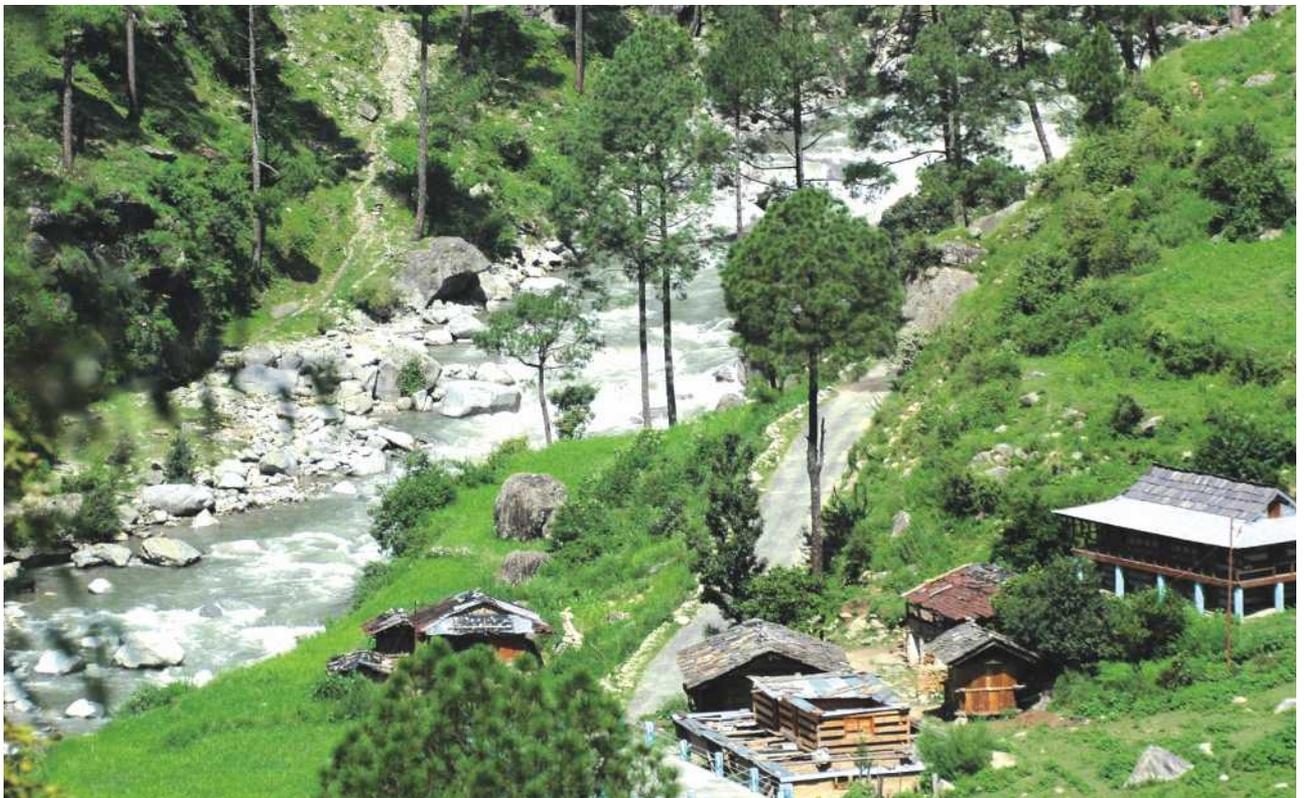


Fig.30 Chir pine stands in Govind Wildlife Sanctuary, Uttarkashi

Sector Scheme on Strengthening of Wildlife Division, and through Grants in Aid to the Central Zoo Authority and the National Tiger Conservation Authority (NTCA).

### Progress of Activities Undertaken through Various Schemes

#### Assistance for Development of National Parks and Sanctuaries

- The Protected Area network in India includes 99 National Parks and 513 Wildlife Sanctuaries, 41 Conservation Reserves and four Community Reserves. Realizing the gigantic task of managing our Protected Areas, the National Wildlife Action Plan (2002-2016) was adopted in 2002, emphasizing the peoples' participation and their support for wildlife conservation.
- The scheme provides financial assistance for habitat development for conservation of biodiversity, to strengthen infrastructure facilities for improved protection and management, ecodevelopment activities, research, training, capacity building and census of wildlife.
- Under this Scheme, 100% grant is provided for identified items of non-recurring expenditure in the case of National Parks and Wildlife Sanctuaries. Also, 50% assistance is provided in respect of recurring items of expenditure in case of National Parks. For Protected Areas (National Parks and Wildlife Sanctuaries Both) in higher altitude region, deserts or ocean eco-systems with identified endangered species, 100% financial support is provided for both recurring and non-recurring items of work.
- The Ministry had undertaken an independent evaluation of National Parks and Wildlife Sanctuaries in the country by a group of experts to ascertain how effectively the Protected Area (PA) network in the country performs in realizing the

conservation objectives as well as the social objectives for effective wildlife management. Five regional committees of experts have also been constituted for the purpose. During the first phase, 30 Protected Areas were evaluated.

#### Strengthening of Wildlife Division and Consultancies for Special Tasks

- The scheme was launched in 1986 to strengthen the Wildlife Division in the Ministry and the regional offices of Wildlife Preservation for fulfilling the statutory obligations under the Wildlife (Protection) Act and inter-governmental commitments under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- The scheme also provides assistance to the four regional offices (Wildlife Preservation) located in Delhi, Mumbai, Kolkata and Chennai to ensure adequate manpower and development of infrastructure for better enforcement of Wildlife (Protection) Act, etc. Assistance is also extended to the three sub-regional offices at Guwahati, Amritsar and Cochin, which were established subsequently to further strengthen the organization.

#### Vulture Conservation Programme

- The population of vultures, especially the gyps' species, has been decimated in the entire region of South Asia. This is a matter of great concern as vultures are important natural scavengers playing a crucial role in the ecosystem, and essential for the overall well being of the environment and life support system. One of the major causes of decimation of the population of vultures is the pharmaceutical drug, diclofenac, which is toxic to the bird even at relatively low dosage. In this regard, the Government of India has initiated preventive actions to stem the further decline in the population of vultures which inter alia includes banning (in May 2006)

the use of diclofenac in the entire country for use in veterinary sector. The Department of Animal Husbandry, Dairying and Fisheries have already issued directions on 12.07.2007 to the State Governments to restrict the use of diclofenac by substituting it by meloxicam and to keep vigilance about the clandestine use of diclofenac in veterinary sector.

- For the purpose of better monitoring, vigilance and for evolving the modalities for complete withdrawal of diclofenac drug from the market, it was felt necessary that all the concerned Ministries/Departments and State/UT Governments to work in a coordinated manner so that after the ban, the diclofenac meant for humans should not be diverted to the veterinary sector, or, a spurious drug should not replace diclofenac. The Ministry is in regular contact with concerned Ministries/Departments for this purpose.
- Apart from above, Government of India has formulated an Action Plan for Vulture Conservation which is being implemented in collaboration of States/UTs to stem the decline and put the vulture population on growth path. The Government has supported breeding centres at Pinjore in Haryana, Buxa in West Bengal and Rani Forest in Assam including captive breeding centres at four zoos at Bhopal, Bhubaneshwar, Junagarh and Hyderabad have also been set up through CZA. These centres are at various stages of implementation.

#### The Wildlife Crime Control Bureau

- The Wildlife Crime Control Bureau has been constituted through amendment of the Wildlife (Protection) Act, 1972 in 2006. The powers and functions of the bureau have been defined u/s38z of the Act. They are broadly to take measures to:
  - Fulfill international obligations and to

assist/co-ordinate with national /international agencies for Wildlife Crime Control;

- Build capacity-both physical infrastructure and skills, knowledge towards fulfilling (a) and (b) above.
- Prior to the amendment of 2006, there were four Regional and three sub-regional offices of Wildlife Preservation under the Director of Wildlife Preservation who is the Statutory Authority in respect of Govt. of India under S.3 of the Wildlife (Protection) Act, 1972. They were mainly acting as Asst. Management Authorities of Convention on International Trade of Endangered Species (CITES) and while aiding Customs authorities in this regard pass on the intelligence to the various enforcement authorities.
- With the creation of the bureau, the four regional offices have been integrated with it along with their sub regional offices. A new regional office at Jabalpur has also been constituted. There has been redefinition and significant addition of role; hence, a strategy would be required to fulfill the objectives of Wildlife crime control. The strategy would be of controlling supply of Wildlife and its products to both domestic as well as international trade and to decrease its demand in these markets. The supply side measures would be strengthening Human Intelligence; Technical Surveillance; Web Patrolling; Media watch; Creation of Crime Data Bank; strengthening/capacity building of enforcement and prosecution process; life style/livelihood issues of communities subsisting on Wildlife etc. The demand side measures would be creating awareness amongst the international buyers; using bilateral and multilateral mechanisms in trade; international trade regulatory mechanisms; other policy prescriptions etc.

### National Board for Wildlife

The fourth meeting of the National Board for Wildlife was held on 1st November, 2007 under the Chairmanship of Hon'ble Prime Minister. The important decisions taken during the meeting includes setting up of a sub-committee for recovery programme of endangered terrestrial species and for conservation of marine species.

### Standing Committee of National Board for Wildlife

The Standing Committee was re-constituted vide order dated 9th July, 2007 and the meeting of the re-constituted Committee was convened on 10th September, 2007 under the Chairmanship of Hon'ble Minister for State for Forests & Wildlife.

### National Wildlife Action Plan (2002-2016)

A meeting of the Monitoring Committee, constituted for monitoring the implementation of the action points under the National Wildlife Action Plan, was convened on 5th July, 2007 under the Chairmanship of the Director General of Forests & Special Secretary, to review the implementation of the Action Plan. Apart from the members of the Monitoring Committee, the Chief Wildlife Warden's of all States had also participated in the meeting.

### International Conventions Related to Wildlife

The Ministry is the nodal agency for the various international conventions related to climate change, bio-diversity, wildlife conservation etc. India is a party to five major international conventions related to wildlife conservation, viz. Convention on International Trade in Endangered Species of wild fauna and flora (CITES), International Union for Conservation of Nature and Natural Resources (IUCN), International Whaling Commission (IWC), United Nations Educational, Scientific & Cultural Organization-World Heritage Committee (UNESCO-WHC) and the Convention on Migratory Species (CMS).

### – Convention on International Trade in Endangered Species of Fauna and Flora (CITES)

- In order to regulate international trade in endangered species of wildlife, the Convention on International Trade in Endangered Species of wild fauna and flora (CITES) was signed in March 1973. India ratified the Convention on 20th July, 1976.
- The 14th Conference of Parties to the CITES was held at The Hague, Netherlands from 3-15 June, 2007. A delegation from India had participated in the conference. The Hon'ble Minister for Environment & Forests, also participated in the Ministerial Round Table held on 13th June, 2007 in connection with the CoP 14. The Indian delegation actively participated and intervened in various agenda, particularly, in those which were of National interest or indirectly affected country's conservation efforts. India's initiatives in conservation of Asian Big Cats and Tibetan Antelope were much appreciated. The COP also acknowledged with appreciation, the establishment of Wildlife Crime Control Bureau by India. India informed the convention regarding various initiatives taken by India to strengthen the conservation tigers in India. This included, inter alia, the 2006 amendment to Wildlife (Protection) Act, creation of National Tiger Conservation Authority and Wildlife Crime Control Bureau. India further appealed to the international community to desist from any proposed move to go for commercial breeding of tigers as it can have devastating impacts on wild tiger population. There after, India, China, Nepal, Russian Federation and USA moved a joint resolution for strengthening tiger conservation and was adopted by the convention.



### – UNESCO-World Heritage Convention

- India is a member of World Heritage Convention responsible for listing of World Heritage Sites, which include both Cultural and natural sites. Wildlife wing of the Ministry is associated with conservation of the Natural World Heritage sites.
- Considering the importance of World Natural Sites in India, an externally aided project has been undertaken titled “World Heritage Bio-diversity Programme for India: Building Partnerships to Support UNESCO’s World Heritage programme’. This project is an outcome of a planning grant received from the UNESCO & United Nation Foundation (UNF) and was developed under the guidance of a Project Steering Committee chaired by the Addl. Director General of Forests (WL), of the Ministry.
- The total period of the project is 10 years with two phases, viz, Phase-I of four years and Phase-II of six years. The project is to be undertaken in four World Heritage Sites of India, viz, Kaziranga National Park, Manas National Park, Nanda Devi National Park, and Keoladeo National Park.
- The main focus of the Project is on strengthening capacity for effective management; site level Management policies & Governance; enhance the role of local communities in conservation of biodiversity; enhancing habitat connectivity; restoration of lost attributes; research & monitoring and identification of potential World Heritage Bio-diversity sites.

### – Convention on the Conservation of Migratory Species of Wild animals (CMS)

- India is a signatory to the Convention on Conservation of Migratory Species

(CMS) or Bonn Convention since 1983.

- Under the auspices of CMS, the 6th Meeting of the Range States for Conservation of Siberian Cranes was held at Almaty, Kazakhstan. During the meeting, Keoladeo National Park, Rajasthan has been accorded as a potential wintering site for Siberian Cranes. Two more potential sites, viz, Etawah-Mainpuri Wetlands in Uttar Pradesh and Banni Grasslands in Gujarat, are also under consideration for conservation of Siberian Cranes.
- India has also signed a Memorandum of Understanding with the Convention on Migratory Species (CMS) on 20th February, 2007 at Bangkok, for the Conservation and management of Marine Turtles and their Habitats of the Indian Ocean and South East Asia.

### – International Whaling Commission

- India has been a member of the International Whaling Commission since 1981 and has played a proactive and prominent role in bringing about a moratorium on commercial whaling and supporting the Commission in its efforts towards conservation of migratory species of wild animals.
- The 59th Annual meeting of the International Whaling Commission was held at Anchorage, Alaska from 28-31 May, 2007. An Indian delegation attended the meeting. India had played a proactive role during the meeting in its efforts to conserve the whale population in the world.

### – Coalition Against Wildlife Trafficking (CAWT)

- India has joined hands with United States of America and other partners against the illegal Wildlife crime/

trafficking by joining Coalition Against Wildlife Trafficking (CWAT). First meeting of the Ministerial partners of the coalition was held in Nairobi on 10th Feb, 2007. Hon'able Minister of Environment and Forests attended this meeting. It was a follow up of the preparatory meeting held in London on 20-21 November, 2006, which was also attended by India.

- The Coalition Against Wildlife Trafficking (CAWT), is a global coalition of Governments and international business and conservation organizations, working together to support each other's efforts to end the illegal trade in wildlife and wildlife products. It is not a legal entity but a partnership of like-minded governments and organizations who are willing to make a political commitment to end wildlife trafficking. The partners will be able to work jointly and severally toward achieving the Coalition's goals, with each partner acting where it can contribute most effectively.

### Wildlife Institute of India

- Established in 1982, Wildlife Institute of India (WII) is an autonomous institution under the administrative control of the Ministry and has been recognized as a country's premier training and research institution in the field of wildlife conservation. The Institute was awarded the Rajiv Gandhi Wildlife Conservation Award in 1999 in the Institutional Category by the MoEF for its outstanding performance and activities.
- The Institute also conducted various research projects and academic programmes during the year. The details of these programmes are given in chapter 7 and 8 respectively.

## Central Zoo Authority

### Introduction and Objective

The Central Zoo Authority (CZA) was established by the Government of India in the year 1992 through an amendment in the Wild Life (Protection) Act, 1972. The main objective is to oversee the functioning of Zoos and to enforce minimum standards and norms for upkeep and health care of animals in Indian Zoos and to restrain mushrooming of unplanned and ill-conceived Zoos that were cropping up as adjuncts to public parks, industrial complexes and waysides. The Central Zoo Authority has been reconstituted sixth time in the month of September, 2007 with Minister of State, Environment and Forests (Forests & Wildlife) as Chairman. The Central Zoo Authority is a 12 Member body headed by a Chairman. The Member Secretary is the Chief Executive Officer of the Authority. There is a 15 Member contingent in the office of the Central Zoo Authority for discharge of its mandated functions.

### Progress of Activities Undertaken

- Thirty nine different Zoos and Rescue Centres have been evaluated during the year. Out of which, 33 Zoos/ Rescue Centres have been given conditional recognition. Six Mini Zoos/ Rescue Centres have been de-recognized during the period.
- Sixty one different critically endangered wild animal species have been identified for coordinated conservation breeding programme in Indian Zoos. This has been done after a series of meeting with Chief Wild Life Wardens and Zoo Directors of the concerned States. Meetings at Guwahati (for the endemic species of North-east), New Delhi (for high altitude Himalayan species) and Ooty (for endemic species of Western ghats) were organized for the purpose.
- Funds for creation of off-display conservation breeding centres for Vultures

(Junagarh, Bhopal, Hyderabad and Bhubaneswar), Painted roof turtle (Kukrail) Blyth's tragopan (Rangapahar), Hume's pheasant (Aizawl) and Pangolin (Bhubaneswar) were released during the year.

- A Memorandum of Understanding (MoU) has been signed with Wildlife Institute of India, Dehradun for establishment of National Studbook Cell for maintaining National studbooks of all the endangered wild animal species taken up for coordinated conservation breeding.
- Eleven proposals for exchange of animals between Indian Zoos and seven such proposals between Indian and foreign Zoos were approved by the Central Zoo Authority during the year.
- Proposal for creation of Night Safari at Greater Noida was approved along with approval of addition of a Night Safari in Arignar Anna Zoological Park, Chennai.
- One week Training programme for Zoo Veterinarians was organized at Bareilly in collaboration with Indian Veterinary Research Institute, Bareilly. Two weeks training programme for middle level Zoo personnel was organized at Chennai with help from Wildlife Institute of India, Dehradun. 7 Nos. training programmes for Zookeepers on regional basis were organized at Kanpur, Guwahati, Bhubaneswar, Chennai, Mysore, Ahmedabad and Hyderabad. One Zoo Director and one Zoo Veterinarian attended three weeks training programme at Durrell's Wildlife Conservation Trust. Member Secretary attended the Annual Meeting of Conservation Breeding Specialist Group and World Association of Zoos & Aquariums at Budapest, Hungary.
- Hands on trainings for Zoo Veterinarians on control of avian influenza were organized at New Delhi (Northern region) and Chennai (for rest of India). One day workshop on Conservation of Bustards was organized at New Delhi involving Chief Wild Life Wardens from the concerned States and other experts.
- A National Referral Centre (NRC) was established at Indian Veterinary Research Institute, Bareilly for providing super specialty services and diagnostic facilities for better health care of wild animals in Indian Zoos. A MoU for Rs. 100.34 lakhs has been signed with Centre for Cellular & Molecular Biology, Hyderabad for initiating research on biotechnological interventions in conservation of wildlife at newly established facility i.e. LaCONES to work on genetic fingerprinting of captive stock, frozen Zoo and assisted reproduction. A research programme on diet of wild animals in captive conditions has been initiated at Indian Veterinary Research Institute, Bareilly for Rs. 31.44 lakhs. Six fellowships in form of small grants have been awarded to different Zoos to work on local issues.
- The Central Zoo Authority approved grant of Rs. 707.61 lakhs for improvement of different recognized public sector Zoos during the year. Rs. 467.65 lakhs have also been approved by the Central Zoo Authority for maintenance of seven Rescue Centres especially created for rehabilitation of wild animals whose performance has been banned in the Circuses.
- The Central Zoo Authority brought out the book 'Zoos in India' giving details on legislation, policy, guidelines and strategy related to improvement and management of Zoos. The Authority also published the manual on Zoo Barriers Designs during the year.

## Project Tiger

(National Tiger Conservation Authority)

### Introduction and Objectives

The Centrally Sponsored Scheme “Project Tiger” was launched in April, 1973 with the objective “to ensure maintenance of a viable population of Tigers in India for scientific, economic, aesthetic, cultural and ecological values, and to preserve for all times, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people”.

### Progress of Activities Undertaken

#### Legal steps

- Amendment of the Wild Life (Protection) Act, 1972 for providing enabling provisions for constitution of the National Tiger Conservation Authority and the Tiger and Other Endangered Species Crime Control Bureau. The punishment in cases of offence within a tiger reserve has been enhanced. The Act also provides for

forfeiture of any equipment, vehicle or weapon that has been used for committing any wild life offence.

#### Administrative steps

- Strengthening of antipoaching activities, including special strategy for monsoon patrolling, by providing funding support to Tiger Reserve States, as proposed by them, for deployment of antipoaching squads involving ex-army personnel / home guards, apart from workforce comprising of local people, in addition to strengthening of communication / wireless facilities.
- 100% Central Assistance provided to 17 Tiger Reserves as an additionality for deployment of Tiger Protection Force, comprising of ex-army personnel and local workforce.
- Constitution of the National Tiger Conservation Authority with effect from 4.09.2006, for strengthening tiger



Fig.31 Tigers – our national animal

**Table-7 : Forest occupancy and population estimates of tigers as per the refined methodology.**

State	Tiger Km <sup>2</sup>	Tiger Numbers		
		No.	Lower limit	Upper limit
<b>Shivalik-Gangetic Plain Landscape Complex</b>				
Uttarakhand	1901	178	161	195
Uttar Pradesh	2766	109	91	127
Bihar	510	10	7	13
Shivalik-Gangetic	5177	297	259	335
<b>Central Indian Landscape Complex and Eastern Ghats Landscape Complex</b>				
Andhra Pradesh	14126	95	84	107
Chattisgarh	3609	26	23	28
Madhya Pradesh	15614	300	236	364
Maharashtra	4273	103	76	131
Orissa	9144	45	37	53
Rajasthan	356	32	30	35
Jharkhand**	1488	Not Assessed		
Central Indian	48610	601	486	718
<b>Western Ghats Landscape Complex</b>				
Karnataka	18715	290	241	339
Kerala	6168	46	39	53
Tamil Nadu	9211	76	56	95
Western Ghats	34094	402	336	487
<b>North East Hills and Brahmaputra Flood Plains</b>				
Assam*	1164	70	60	80
Arunachal Pradesh*	1685	14	12	18
Mizoram*	785	6	4	8
Northern West Bengal *	596	10	8	12
<b>North East Hills, and Brahmaputra</b>	<b>4230</b>	<b>100</b>	<b>84</b>	<b>118</b>
Sunderbans	1586	Not Assessed		
<b>Total Tiger Population</b>		<b>1411</b>	<b>1165</b>	<b>1657</b>

\* Population estimates are based on possible density of tiger occupied landscape in the area, not assessed by double sampling.

\*\* Data was not amenable to population estimation of tiger. However, available information about the landscape indicates low densities of tiger in the area ranging from 0.5 to 1.5 per 100 km<sup>2</sup>.

conservation by, inter alia, ensuring normative standards in tiger reserve management, preparation of reserve specific tiger conservation plan, laying down annual / audit report before Parliament, constituting State level Steering Committees under the Chairmanship of Chief Ministers and establishment of Tiger Conservation Foundation.

- Constitution of a multidisciplinary Tiger and Other Endangered Species Crime Control Bureau (Wildlife Crime Control Bureau) with effect from 6.6.2007 comprising of officers from Police, Forest, Customs and other enforcement agencies to effectively control illegal trade in wildlife.
- Approval accorded for declaring eight new Tiger Reserves.
- The revised Project Tiger guidelines have been issued to States for strengthening tiger conservation, which apart from ongoing activities, inter alia, include funding support to States for enhanced village relocation/rehabilitation package for people living in core or critical tiger habitats (from Rs. 1 lakh/family to Rs. 10 lakhs/family, rehabilitation/resettlement of communities involved in traditional hunting and mainstreaming livelihood and wildlife concerns in forests outside tiger reserves and fostering corridor conservation through restorative strategy to arrest habitat fragmentation.
- A scientific methodology for estimating tiger (including copredators, prey animals and assessment of habitat status) has been evolved and mainstreamed. The findings of this estimation/assessment (Table-7) are bench marks for future tiger conservation strategy.
- Around 31111 sq.km. of critical/core tiger habitat identified in 17 States.

- Memorandum of Understanding developed for better/concerted implementation of conservation inputs through tiger reserve States.

#### Financial steps

- Financial and technical help is provided to the States under various Centrally Sponsored Schemes, viz. Project Tiger and Development of National Parks and Sanctuaries for enhancing the capacity and infrastructure of the States for providing effective protection to wild animals.

#### International Cooperation

- India has a Memorandum of Understanding with Nepal on controlling trans-boundary illegal trade in wildlife and conservation, apart from a protocol on tiger conservation with China.
- A Global Tiger Forum of Tiger Range Countries has been created for addressing international issues related to tiger conservation.
- During the 14th meeting of the Conference of Parties to CITES, which was held from 3-15 June, 2007 at The Hague, India introduced a resolution along with China, Nepal and the Russian Federation, with directions to Parties with operations breeding tigers on a commercial scale, for restricting such captive populations to a level supportive only to conserving wild tigers. The resolution was adopted as a decision with minor amendments. Further, India made an intervention appealing to China to phase out tiger farming, and eliminate stockpiles of Asian big cats body parts and derivatives. The importance of continuing the ban on trade of body parts of tigers was emphasized.

#### Project Elephant

##### Introduction and Objectives

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 in their natural habitats. The Project is being implemented in States, viz Andhra Pradesh, Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Meghalaya, Nagaland, Orissa, Tamilnadu, Uttaranchal, Uttar Pradesh and West Bengal. States are being given financial as well as technical assistance in achieving the objectives of the Project. Help is also provided to other States with small populations of elephants for the purpose of census, training of field staff and mitigation of human- elephant conflict. Major activities of the Project Elephant include

- Strengthening of measures for protection of wild elephants from poachers.
- Development of scientific and planned management for conservation of elephants habitats and viable population of wild Asiatic elephants in India.
- Ecological restoration of existing natural habitats and migratory routes of elephants.
- Promotion of measures for mitigation of man-elephant conflict in problem areas and moderating pressures of human and live stock on crucial elephant habitats.
- Eco-development
- Veterinary care
- Research on elephant issues relating to elephant conservation.
- Public education and awareness programme
- Capacity building of field staff, mahouts and veterinarians.

#### Progress of Activities Undertaken

- Assistance was provided to Haryana for creation of first elephant rehabilitation centre in the country
- All India estimation of elephant was carried out in May 2007 all over India except the North East states where it will be done in winter due to climatic conditions .



Fig.32 Elephant with calf at Kaziranga National Park

**Table-8. Elephant Reserves in India with 2005 Census Population**

S.No.	Elephant Range	Elephant Reserve	State	Total Area (Sq. Km)	P.A. in (Sq. Km.)	ER Population in 2005
I	Eastern India (South West Bengal- Jharkhand-Orissa)	1. Mayurjharna ER (24.10.02)	W. Bengal	414	–	96
		2. Singhbhum ER (26.9.01)	Jharkhand	4530	193	371
		3. Mayurbhanj ER (29.9.01)	Orissa	3214	1309	465
		4. Mahanadi ER (20.7.02)*	Orissa	1038	964	464
		5. Sambalpur ER (27.3.02)*	Orissa	427	427	284
		6. Baitarni ER#	Orissa	1755	–	108
		7. South Orissa ER#	Orissa	4216	750	138
		8. Lemru #	Chattisgarh	450	–	–
		9. Badalkhol- Tamoringla- #	Chattisgarh	1048.30	1154.93	–
	<b>Total</b>			<b>15594</b>	<b>3643</b>	<b>1978</b>
II	North Brahmaputra (Arunachal – Assam)	10. Kameng ER (19.6.02)	Arunachal	1892	748	
		11. Sonitpur ER (6.3.03)*	Assam	1420	420	612
	<b>Total</b>			<b>3312</b>	<b>1168</b>	<b>612+</b>
III	South Brahmaputra (Assam- Arunachal)	12. Dihing-Patkai ER (17.4.03)	Assam	937	345	295
		13. Deomali (South Arunachal) ER#	Arunachal	1957.50	378.13	129
	<b>Total</b>			<b>1,837+</b>	<b>345</b>	<b>424</b>
IV	Kaziranga (Assam- Nagaland)	14. Kaziranga – Karbi Anglong ER (17.4.03)	Assam	3270	1073	1940
		15. Dhansiri-Lungding ER (19.4.03)	Assam	2740		275
		16. Intanki ER (28.2.05)	Nagaland	202	202	30
	<b>Total</b>			<b>6212</b>	<b>1275</b>	<b>2245</b>
V	Eastern Dooars (Assam- W. Bengal)	17. Chirang-Ripu ER (7.3.03)	Assam	2600	526+	658
		18. Eastern Dooars ER (28.8.02)	W. Bengal	978	484	300-350
	<b>Total</b>			<b>3578</b>	<b>1010</b>	<b>1008</b>

Contd....

Table-8. Contd....

VI	E. Himalayas (Meghalaya)	19. Garo Hills ER (31.10.01)	Meghalaya	3,500	402	1047
		20. Khasi Hills ER^	Meghalaya			383
	<b>Total</b>					<b>1430</b>
VII	Nilgiri –Eastern Ghat (Karnataka- Kerala- Tamilnadu-Andhra)	21. Mysore ER (25.11.02)	Karnataka,	6724	3103	4452
		22. Wayanad ER (2.4.02)	Kerala	1200	394	636
		23. Nilgiri ER (19.9.03)	Tamilnadu	4663	716	2862
		24. Rayala ER (9.12.03)	Andhra	766	525	12
	<b>Total</b>			<b>13335</b>	<b>4738</b>	<b>7962</b>
VIII	South Nilgiri (Kerala- Tamilnadu)	25. Nilambur ER (2.4.02)	Kerala	1419	90	281
		26. Coimbatore ER (19.9.03)	Tamilnadu	566	482	329
	<b>Total</b>			<b>1985</b>	<b>572</b>	<b>610</b>
IX	Western Ghat (Tamilnadu- Kerala)	27. Anamalai ER (19.9.03)	Tamilnadu	1457	300	179
		28. Anamudi ER (2.4.02)	Kerala	3728	780	1726
	<b>Total</b>			<b>5185</b>	<b>1080</b>	<b>1430</b>
X	Periyar (Kerala- Tamilnadu)	29. Periyar (2.4.02)	Kerala	3742	1058	1100
		30. Srivilliputtur ER (19.9.03)	Tamilnadu	1249	568	638
	<b>Total</b>			<b>4991</b>	<b>1626</b>	<b>1738</b>
XI	Northern India (Uttaranchal-U.P.)	31. Shivalik ER (28.10.02)	Uttaranchal	5405	1340	1510
		32. Ganga-Jamuna ER#	U.P.	744	-	NA
	<b>Total</b>			<b>6149</b>	<b>1340</b>	<b>1510+</b>
		<b>TOTAL</b>		<b>58,900+</b>	<b>16,400+</b>	<b>21,200+</b>

# Approved by Govt. of India, but not yet notified by the State Government.

⚙️ Proposal for extension approved by GOI, but not yet notified by the State.

^ Under consideration

- The preliminary reports indicate increase in population compared to 2002 census .
- Permission was given for creation of three more Elephant reserves – two in Chattisgarh namely - Lemru & Badalkhod and; Deomali in Arunachal Pradesh . Updated list of Elephant Reserves (ERs) is given in Table-8.
- 100 % utilization of outlay of Rs 15.09 crores during the financial year 2006-07
- Independent evaluation of the scheme was completed in 2007.
- One week training course on wild life crime was organized for forest , police and Custom officers in LNIN National Institute of Criminology & Forensic science in collaboration with Global Tiger Forum .
- One day National workshop on elephant corridors sponsored and organized by WTI, New Delhi and Karnataka Forest

department at Bangalore in December 2007.

- One week training was sponsored and organized in December 2007 by Karnataka FD and conducted by FSI, Dehradun on spatial referencing of Mitigation of Illegal Killing of Elephants (MIKE) reporting for southern states.
- Elephant Day was celebrated during the wildlife week (October 2007) in all the Elephant Reserves in the country.

## Animal Welfare

### Introduction and Objectives

- The Animal Welfare Division is entrusted with the implementation of the provisions of the Prevention of Cruelty to Animals Act, 1960 (59 of 1960). Plan Schemes are in operation for implementation of the statutory obligations under this Act. Two statutory organizations viz. Animal Welfare Board of India (AWBI) and Committee for the Purpose of Supervision and Control of Experiments on Animals (CPCSEA) have also been set up under this Act.
- The mandate of the Animal Welfare Division is to prevent the infliction of unnecessary pain or suffering on animals.

### Progress of Activities Undertaken

To accomplish the mission, a three-pronged approach is being adopted by AWBI

### Regulatory

Some of the important Rules framed under the Prevention of Cruelty to Animals Act 1960 which are regulatory in nature include

- Performing Animals (Registration) Rules, 2001 as amended.
- Transport of Animals Rules, 1978 & 2001.
- Prevention of Cruelty (Slaughter Houses) Rules, 2001.
- Prevention of cruelty to Animals

(Establishment and Regulation of Society for Prevention of Cruelty to Animals) Rules 2001.

- Animal Birth Control (Dogs) Rules, 2001.
- Breeding of and Experiments on Animals (Control and Supervision) Rules, 1998 as amended.

### Developmental

#### Animal Welfare Board of India (AWBI)

- AWBI is a statutory body under Section 4 of the Prevention of Cruelty to Animals Act 1960, with head quarters at Chennai. The Board is a statutory body consisting of 28 members including six members of Parliament, (four from Lok Sabha and two from Rajya Sabha), Govt. officials viz., Director General of forests and Special Secretary, Animal Husbandry commissioner (as ex-officio) and representatives from Ministry of Home Affairs and Education, India Board for Wildlife, Medicine, Veterinary care, municipal Corporation, Humanitarian and SPCAs/AWOs. Its basic mandate is to advise the Government on animal welfare issues, and create awareness in animal welfare.
- Under a Plan scheme, the Animal Welfare Board of India gives financial assistance to eligible Animal Welfare Organisations for regular schemes viz. maintenance of animal shelters, medicines, purchase of medical equipment and conducting of veterinary camps etc.
- The Animal Welfare Division releases funds to the Animal Welfare Board of India for regular schemes of AWBI as well as for four Central Sector Schemes. The following Central Sector schemes are being implemented by the Animal Welfare Board of India

#### Scheme for Shelter Houses for Looking After the Animals

- The objective of this scheme is to establish



and maintain shelter houses for distressed animals in the country. Primarily, Non-Governmental Organisations (NGOs) and Society for Prevention of Cruelty to Animals (SPCAs) are given grants of upto Rs.22.50 lakhs for construction of boundary walls, shelters, water tank, drains In-house Dispensary, Medical Equipment, contingencies etc.

- In the current financial year, 13 shelter houses have been constructed up to November, 2007.

#### Scheme for Birth Control and Immunization of Stray Dogs

- The scheme is meant for controlling the population of stray dogs by sterilization & reducing incidences of rabies by immunization. NGOs and SPCAs working in collaboration with local bodies are eligible for this grant.
- Under this scheme financial assistance is given @ Rs.370/ per dog for pre & postoperative care, including medicines and anti rabies vaccine (ARV); and Rs.75/- per dog for catching and relocation of the dog. The aid is released in three installments.
- In the current financial year, 33222 animal birth control operations have been conducted upto November, 2007.

#### Scheme for Provision of Ambulance Services to Animals in Distress

- Under this scheme the animal welfare organizations are given grant for purchase of suitable vehicle for transportation, rescue and also for providing emergency services to animals in distress.
- NGOs are assisted to the extent of 90% of project cost of purchase of a suitable vehicle and equipment and fitting thereon. The maximum amount of grant-in-aid is limited to Rs.3.50 lakhs for purchase of vehicle and Rs.1.00 lakhs for equipments and fitting thereon.

- In the current financial year, 22 ambulances have been given to Animal Welfare Organisations (AWOs) upto November, 2007.

#### Scheme for Relief to Animals during Natural Calamities and Unforeseen Circumstances

- Every year, there are natural calamities in the form of floods, droughts or earthquakes. In such circumstances there is an immediate requirement for provision of fodder, adequate shelter, medical attention etc. for the affected animals or otherwise they are smuggled across the borders for slaughter. Funds for relief of such animals are provided under this scheme.
- Two AWOs were granted 0.06 Crore for relief work under the Natural Calamity Scheme while the Board received of Rs. 0.32 Crore during the period (as on up to November, 2007).

#### Other activities of AWBI

- The Board has granted recognition to 55 newly established Animal Welfare organizations (AWOs) during the year 2007-08.
- The Board is providing free, on the spot veterinary treatment to sick and injured animals belonging to the poor and downtrodden people through its Mobile Clinic (MAC) programme operating from the Headquarters at Chennai.
- One of the main functions of the Board is propagation of Humane Education. The Animal Welfare fortnight (from 14-30 January, 2008) and World Animal Day (4th October) are celebrated by all animal Welfare Organizations, SPCAs.
- During the year, the board published AWBI publications viz Animal Citizen (English), Jeev Sarthi (Hindi) and AWBI Newsletter (English and Hindi). The Animal Citizen/Jeev Sarthi was brought out special on "Rabies Free India" and various issues were highlighted by AWBI Newsletter of the Animal Welfare.

- Under Rule 3 of the Performing Animals (Registration) Rules, 2001 the Board is the prescribed authority to issue registration certificates.
- Throughout the year, the Board continuously received complaints regarding cruelty to animals from various parts of the country which were prevented with the help of District Collectors/District Magistrate/District superintendent of Police. The cruelty matter were always given priority and a total 65 cruelty cases were reported for action till 22nd November, 2007. The AWOs filed several FIRs against animal cruelties and the offenders were prosecuted. The AWBI has filed a Petition in Supreme Court of India to ban the Cruel game of cattle race and obtained stay order.
- The Animal welfare Board of India has taken initiatives for modernizing the Gaushalas through in house training of goshala personnel at few of the Modal Gaushalas on the issues of Bio-gas generation and production of Methane gas.
- A National Conference on "Glory of Gomata" was organized at Tirupati, Andhra Pradesh from 1-3, December, 2007 by Tirumala Tirupathi Devasthanam Board and Bhasyakara Trust, Chennai. The three day conference had widely discussed on various issues pertaining to preservation and prevention of Cattle wealth in India. AWBI has organized a three day stall at the Conference to promote the animal welfare activities and highlighted the various acts and rules including compassion to the dump and speechless animals to the visitors. A lead paper titled "Prevention of Cruelty to Cattle-Legislative Measures by AWBI" was presented on the occasion.
- The Board is making all the efforts to modernize the goshalas by utilizing the huge potential of Bio-mass for production

of Bio-gas, Bio-fertilizers & Bio-pesticide would go a long way in upliftment of rural economy. Earlier, the Board has encouraged the gaushalas to utilize the huge bio-mass by establishing the Institutional Biogas Plants in their gaushala and to utilize the gas for various purposes including generation of electricity for utilizing it in different implements viz., for glowing bulb, grass cutting machine, drawing well water, and others.

- The Animal Welfare Division of the Ministry, has entrusted the work of evaluation of Animal Welfare Schemes-TANUVAS Study Programme." The total cost of the this project is Rs. 10,55,125/- and was sanctioned on 30th March, 2007. According to evaluation project, sixty animal Welfare Organizations located in the States of Tamil Nadu, Andhra Pradesh, Karnataka, Kerala, Orissa, Maharashtra Goa, Uttar Pradesh and New Delhi have already been inspected.

#### Educational

- One of the main functions of the Board is propagation of Human Education. The Animal Welfare fortnight (from 14-30 January, 2008) and World animal Day(4th October) were celebrated by all Animal Welfare Organizations, SPCAs, Animal Welfare Trainers, Hon. Animal Welfare Officers, Govt. Animal Husbandry Departments, Zoological Parks and Voluntary organizations throughout the country with great interests, Zeal and enthusiasm. During the fortnight celebration, the activists were involved for feeding of animals, free veterinary treatment to sick animals. Seminars Radio and TV talks student rallies, oratorical and painting competitions, distribution of pamphlets were also under taken for spreading the message of having compassion to our animals companions.
- During the current year, AWBI resumed

publication of the quarterly journals 'Animal Citizen' (English), Jeev Sarthi (Hindi) and AWBI Newsletter (English/Hindi) Animal Citizen/Jeev Sarthi was brought out special on "Rabies Free India" and various issues were highlighted by AWBI Newsletter of the Animal Welfare which had earlier been kept in abeyance. The Board is also publishing the AWBI monthly Newsletter in which important news, events, articles and activities of Animal Welfare Organizations etc. are being published.

- During the current year, 612 films /Ad films were granted registration certificates for using animals in their films. Total of 338 Hony. Animal Welfare Officers (HAWOs) were appointed till 22nd November, 2007 for seizing and prosecuting the offenders.

#### National Institute of Animal Welfare (NIAW), Ballabgarh, Faridabad, Haryana

- The NIAW, a sub-ordinate office of the Ministry imparts training and education in Animal Welfare on diversified basis comprising, among other things, animal management, their behaviour and ethics. The aim is to create an enabling environment for fulfillment of the statutory requirements as laid down in the Prevention of Cruelty to Animals Act, 1960.
- The work of designing and running in – service and other short term courses training was assigned to Ed CIL, a public sector enterprise under the Ministry of Human Resource Development, on turnkey basis and courses commenced from 2nd January, 2006. Forty six Training programmes have been completed upto November, 2007.
- NIAW has been conceptualized as an apex body in the field of animal welfare and its broad mandate covers the need to improve animal welfare through education, research and public outreach.

The Institute is expected to evolve as a premier body with international stature, with participation of faculty / trainees from other countries.

- A Steering Committee has been set up under the Chairmanship of Secretary (E&F) to review the modalities of operation of NIAW and to facilitate constant review of the functioning of the Institute. Apart from officials of the Ministry, the Steering Committee comprises of DG (CSIR) or his representative, Member Secretary (CZA), Animal Husbandry Commissioner, Ministry of Agriculture and representatives of the Ministries of Information and Broadcasting and Urban Development.
- Important stake holders in the training programmes have been identified, including municipal officials, animal welfare organizations, animal readers, transporters, faculty of veterinary colleges, animal traders, animal trainers, employees of slaughter houses and SPCA inspectors and specialized courses are being designed in consultation with AWBI.

#### Committee for Purpose of Control & Supervision of Experiments on Animals (CPCSEA)

- CPCSEA is a statutory body under Section 15 of Prevention of Cruelty to Animals Act, 1960 with head quarters at Chennai. The mandate of this Committee is to ensure that while conducting various types of experiments, in connection with medical research or education, animals are not subjected to avoidable pain or suffering. The main function of this Committee is to register institutions carrying out animal experimentation and / or breeding; to consider approval of animal house facilities and to regulate use of animals in experimentation.
- So far, 1124 establishments have been registered with this Committee. More than 80 project proposals on large animals have been received and 61 have been