INSIGHTS IAS - SUMMARY OF ENVIRONMENT REPORT – 2017-2018
ROLE AND MANDATE OF THE MINISTRY

- The Ministry of Environment, Forests and Climate Change (MoEFCC) is the nodal agency for overseeing the implementation of
  - India’s environment and forest policies
  - Programmes of conservation of natural resources including
    - Lakes and rivers
    - Biodiversity
    - Forests and wildlife
- It ensures
  - Welfare of animals
  - Prevention and abatement of pollution.
- It is also the nodal agency for
  - United Nations Environment Programme (UNEP)
  - South Asia Co-operative Environment Programme (SACEP)
  - International Centre for Integrated Mountain Development (ICIMOD)
  - United nations Conference on Environment and Development (UNCED)
- The Ministry coordinates with
  - Commission on Sustainable Development (CSD)
  - Global Environment Facility (GEF)
  - Economic and Social Council for Asia and Pacific (ESCAP)
  - SAARC

ACHIEVEMENTS and ACTIVITIES OF THE MINISTRY

June-2017 to February-2018

- The 3rd meeting of BRICS Environment Ministers’ and Environmental Senior Officers meeting was held in Tianjin, China on 22-23 June, 2017.
  - The major outcomes include adoption of:
    - Tianjin Statement on Environment
    - BRICS Partnership for Urban Environmental Sustainability Initiative
- The 8th India-European Union Environment Forum was organised by EU on the theme of "Resource Efficiency and the Circular Economy - Benefits beyond environment" in New Delhi on 30th June, 2017.
- Wildlife Crime Control Bureau organized and coordinated an enforcement operation named "Operation Wildnet" to drag the attention of the enforcement agencies within the country to focus their attention on
  - The ever increasing illegal wildlife trade over internet using Social Media Platforms such as Facebook, Twitter, Whatsapp, Wechat, various online classified sites and trade portals, websites and Blog spots.
The 2nd dialogue between India and Bangladesh Forest Departments for **trans-boundary elephant conservation** was held on 27.07.2017 at Shillong, Meghalaya.

The Cabinet on 24th January, 2017 has approved to **ratify the Second Commitment Period of the Kyoto Protocol (Doha Amendment) in containing the emission of Green House Gases.**

The Doha Amendment establishes a second commitment period (2013–20) for the Kyoto Protocol, an international agreement to reduce the emissions of greenhouse gases.

**International Snow Leopard Conservation Forum** was held from 24-25 August 2017 at Bishkek, Kyrgyz Republic.

MoEF&CC participated in the first Conference of the Parties to the **Minamata Convention on Mercury** held during 24-29 September 2017 in Geneva, Switzerland.

"**Swachhta hi Sewa Campaign**" was observed by the Ministry from 15th September to 2nd October 2017.

India hosted the fifth **Global Wildlife Programme conference** in New Delhi and Pench Tiger Reserve, MP from 2nd to 5th October, 2017. Representatives from 18 Global Wildlife Programme Partner Countries participated in the conference.

The project on "**Carbonaceous Aerosol Emissions, Source Apportionment and Climate Impacts** (COALESCE) was launched at I Bombay on 7.07.2017 under the National Carbonaceous Aerosols Programme (NCAP) as a constituent activity of the National Action Programme for Climate Change.

The GWP is a World-Bank led global partnership that promotes wildlife conservation and sustainable development by combatting illicit trafficking in wildlife.

By approaching the poaching crisis holistically through various country projects and a larger global project, it seeks to reduce both the supply and demand that drives the illegal wildlife trade, and protect species and habitats through integrated landscape planning.

The **12th Meeting of Conference of Parties (COP) to the Convention on Migratory Species (CMS)** was held from 23-28 October 2017 at Manila, Philippines.
The Climate Change Conference of Parties (CoP-23) under the United Nations Framework Convention on Climate Change (UNFCCC) was held in Bonn, Germany from 6-18 November, 2017. India participated in CoP-23 with a constructive and positive approach with the aim to protect long term interests.

India participated in G20 Resource Efficiency Dialogue which was held during 27-28 November, 2017 in Berlin. The motive of the event is to profit from good practice examples from the G20 countries.

MoEF&CC in partnership with the Secretariat of the Convention on Biological Diversity, National Biodiversity Authority, UNDP and Indian Institute of Management Bangalore organized an international workshop on "Sustainable Production and Consumption and Novel Economic Instruments for Biodiversity Conservation" from 17 to 18 November 2017 at Indian Institute of Management Bangalore.

Centrally Sponsored Scheme of Intensification of Forest Management Scheme (IFMS) has been restructured to focus on forest fire.

The components of Intensification of Forest Management Scheme (IFMS) include forest fire control and management, survey, demarcation and preparation of working plans, strengthening of infrastructure such as roads, camp offices, watch towers, improved mobility, providing fire arms and use of modern information and communication technology. etc.

CMS is an environmental treaty under the aegis of the United Nations Environment Programme, CMS provides a global platform for the conservation and sustainable use of migratory animals and their habitats.

CMS brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range.

As the only global convention specializing in the conservation of migratory species, their habitats and migration routes, CMS complements and co-operates with a number of other international organizations, NGOs and partners in the media as well as in the corporate sector.
International Conference on "Resilient Hindu Kush Himalaya-Developing Solutions towards a sustainable future for Asia" organized by ICIMOD was held during 3rd - 6th December, 2017 at Kathmandu, Nepal.

The International Centre for Integrated Mountain Development is a regional intergovernmental learning and knowledge sharing centre serving the eight regional member countries of the Hindu Kush Himalayas - Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – based in Kathmandu.

World Hoolock Gibbon Day was celebrated on 14th January, 2018.

The Hoolock Gibbons are three primate species of genus Hoolock in the gibbon family, Hylabatidae, native to eastern Bangladesh, Northeast India and Southwest China.

"Clean Air for Delhi" Campaign was launched from 10th February, 2018 to 23rd February, 2018 to create awareness and induce remedial measures to mitigate the causes responsible for degradation of AQI in Delhi/NCR. During this Campaign, 66 Pollution Watch Control Groups (PWCG) were constituted and these groups ensured ground level implementation of identified set of activities towards mitigating Air Pollution. This campaign witnessed an overwhelming success with active participation of all the stakeholders as well as wide publicity of this campaign among masses. It is worth mentioning that Air Quality Index in Delhi improved significantly after the campaign.

Several Eco Sensitive Zones notifications and Draft ESZ notifications have been issued.

Eco-Sensitive Zones (ESZs) or Ecologically Fragile Areas (EFAs) are areas notified by the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India around Protected Areas, National Parks and Wildlife Sanctuaries.

A new Indo-German Technical Cooperation project on 'Human-Wildlife Conflict Mitigation in India' was conceptualized on 5th February, 2018 at New Delhi.

- The project is being commissioned by Federal Ministry for Economic Cooperation and Development (BMZ) and is being implemented by MoEF&CC, State Forest Departments of Karnataka, Uttarakhand, West Bengal and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
- The Project aims at providing technical support at the National level and in selected partner states of Karnataka, West Bengal and Uttarakhand for effective implementation of Human Wildlife Conflict mitigation measures.
Collaboration with Species-360, USA
- In association with the Species360, USA organized three numbers of interactive sessions during the month of February, 2018 at
  - Kamla Nehru Zoological Garden, Ahmadabad.
  - Sanjay Gandhi Biological Park, Patna.
  - Indian Veterinary Research Institute, Bareilly.
- The session is aimed to facilitate entry, update and completion of animal records of respective zoos in the Zoological Information management system software for Husbandry and Medical Management of the member zoos.

Centre for Biodiversity Policy and Law (CEBPOL) was in news.

Government of India in collaboration with the Norwegian Government has established a “Centre for Biodiversity Policy and Law (CEBPOL)” in the National Biodiversity Authority (NBA), Chennai
- To develop professional expertise in biodiversity policies and laws and develop capacity building.
- To focus on biodiversity policies and laws that cater to the needs of national and international rule-making and subsequent implementation on issues of biodiversity.
BOTANICAL SURVEY OF INDIA ACTIVITIES

Exploration and inventorisation
- Field tours for studies of floristic, ethnobotanical and pharmacognostical studies on
  - Flowering plants
  - Non-flowering Plants
  - Live germplasm collection
- Herbarium consultation tours
- Ex-situ conservation tours

Documentation of Phytodiversity
- National flora
- Regional/State/District Flora
- Flora of Protected Areas
- Ex-situ Conservation
- Micro-propagation of Threatened Species
- Documentation of indigenous knowledge on plant resources
- Digitization

ZOOLOGICAL SURVEY OF INDIA ACTIVITIES

- Faunal Surveys
- Taxonomical Studies
- Discoveries of new taxa/species and New Record to India
- Development of National zoological collections
- Publications and book releases

Acts/Rules governing ZSI:
- Indian Wildlife (Protection) Act, 1972
- The Biological Diversity Act, 2002

Projects:
- India Integrated Coastal Zone Management Project
  - To conserve, protect and manage the coastal and marine environment.
  - The World Bank assists the project.
  - Society of Integrated Coastal Management (SICOM) is established as a nodal body.
  - Thrust has been given to implement at regional and national levels.
  - Implemented as pilot projects in Gujarat, Orissa and West Bengal
National Centre for Sustainable Coastal Management (NCSCM) is set up

**FOREST SURVEY OF INDIA ACTIVITIES**


**e-Green Watch**

The e-Green Watch is a web-based and user-friendly application that is transparent, reliable, and accountable. It is an integrated e-governance portal that enables the temporal change detection for the effective online monitoring and evaluation of works in forestry sector undertaken by State CAMPA.

- It is a holistic approach to facilitate the automation of various management processes related to utilization of CAMPA and other funds provided by states under various centrally sponsored schemes for plantation and other forestry related works.
- The application is capable of showing the Compensatory Afforestation, Diverted Land, Plantations, other Plantations and Assets categories on the Google earth imageries and FSI portal.
Pre-Warming Alert System for Forest Fires & Burnt Area Assessment

FSI has undertaken the exercise and developed an indigenous methodology from the perspective to provide the pre-warming alert system for forest fire on weekly basis using forest cover map, forest type map, RFA boundary, temperature and fire historical data and disseminates the same to state Forest Department.

FSI is currently using AWIFS image for the identification of burnt area and their severity assessment. Most of the objectives, including methodology of the project has been streamlined. However, the system is being made more robust by addition of different parameters.

The Advanced Wide Field Sensor (AWiFS) operates in three spectral bands in VNIR and one band in SWIR with 56 metre spatial resolution and a combined swath of 730 km achieved through two AWIFS cameras.

The catalog contains the orthorectified multi-spectral AWiFS data. The ortho-rectification process is carried out for correcting Terrain relief errors, Scale variation, Sensor attitude/orientation and Internal errors.

International Tropical Timber Organization

It is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. Its members represent about 80% of the world’s tropical forests and 90% of the global tropical timber trade.

International Network of Bamboo and Rattan (INBAR):- The International Network for Bamboo and Rattan (INBAR) is an intergovernmental organization established in 1997. INBAR is dedicated to improving the social, economic, and environmental benefits of bamboo and rattan. INBAR plays a unique role in finding and demonstrating innovative ways of using bamboo and rattan to protect the environment and biodiversity, alleviate poverty, and facilitates fairer pro-poor trade.

Rattan is the name for roughly 600 species of old world climbing palms. The climbing habit is associated with the characteristics of its flexible woody stem, derived typically from a secondary growth, makes rattan a liana rather than a true wood.

Rattan furniture
**CONSERVATION**

**Convention on Biological Diversity**

The Convention on Biological Diversity (CBD) entered into force on 29 December 1993. It has 3 main objectives:

- The conservation of biological diversity
- The sustainable use of the components of biological diversity
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources

**Nagoya Protocol**

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity

- It is a supplementary agreement to the Convention on Biological Diversity.
- It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD:
  - The fair and equitable sharing of benefits arising out of the utilization of genetic resources.

The Nagoya Protocol on ABS was adopted on 29 October 2010 in Nagoya, Japan and entered into force on 12 October 2014.

**Cartagena Protocol on Biosafety**

The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international treaty governing the movements of living modified organisms (LMOs) resulting from modern biotechnology from one country to another.

- **Conference of the Parties (CoP)** to the Convention on Biological Diversity adopted a supplementary agreement to the Convention known as the Cartagena Protocol on Biosafety. The Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology.

- It establishes an advance informed agreement (AIA) procedure for ensuring that countries are provided with the information necessary to make informed decisions before agreeing to the import of such organisms into their territory.


- The Protocol also establishes a Biosafety Clearing-House to facilitate the exchange of information on living modified organisms and to assist countries in the implementation of the Protocol.

**Principle 15:** In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
Biological Diversity Act

- Pursuant to the CBD, India enacted the Biological Diversity Act in 2002, and notified Biological Diversity Rules in 2004, to give effect to the provisions of this Convention.

- The Act is implemented through a three-tiered institutional structure at the national, state and local levels.

- The National Biodiversity Authority (NBA) has been set up in October, 2003 in Chennai.

- The vision of NBA is the conservation and sustainable use of India’s rich biodiversity and associated knowledge with people’s participation, ensuring the process of benefit sharing for well-being of present and future generations.

- The mission of NBA is to ensure effective implementation of Biological Diversity Act, 2002 and the Biological Diversity Rules 2004 for conservation of biodiversity, sustainable use of its components and fair and equitable sharing of benefits arising out of utilization of genetic resources.

- The NBA inter alia deals with all matters relating to
  - Requests for access by foreign individuals
  - Institutions or companies,
  - Transfer of results of research to any foreigner.

- The State Biodiversity Boards (SBBs) constituted by the State Governments deal with all matters relating to access by Indians for commercial purposes.

- The institutions of self-governments are required to set up Biodiversity Management Committees (BMCs) in their respective areas for conservation, sustainable use, documentation of biodiversity and chronicling of knowledge related to biodiversity.

BIOFIN: Biodiversity Finance Initiative

BIOFIN was initiated in response to the urgent global need to divert more finance from all possible sources towards global and national biodiversity goals, as highlighted during the 2010 CBD COP 10 in Nagoya.

The objectives of BIOFIN:

- To deliver a new methodological framework
- Facilitating the identification
- Development and implementation of optimal and evidence-based finance plans and solutions.

BIOFIN is coordinated by UNDP through a global team developing and updating the BIOFIN methodology, supporting its implementation in the countries, and developing capacities at national and global level on biodiversity finance.
NATIONAL BIODIVERSITY TARGETS

Conservation Mangroves & Coral Reefs

The Government has identified 38 mangrove and 4 coral reef sites throughout the Country for intensive conservation and management of mangroves and coral reefs. List of identified sites is at Annexure-1. During the FY. 2016-17, the Ministry of Environment, Forest and Climate Change is providing central assistance in the ratio 60:40 to the Forest Departments of the Coastal States/U.Ts, whosoever requests, for Conservation and Management of Mangroves and Coral Reefs. Besides this, the Ministry also supports R&D activities with emphasis on targeted research on mangrove and coral reef biodiversity and its management.

Coral sites
Mangroves for the Future (MFF) is a unique multi-country, multi-sectoral, partner-led initiative which builds on the long history of coastal management interventions and lessons learned during the course of post-tsunami reconstruction and rehabilitation.

- The initiative is founded on a vision for a more healthy, prosperous and secures future for all Indian Ocean Coastal communities, where all the ecosystems are conserved and managed sustainably and seeks to promote investment and action in ecosystem conservation for sustainable coastal development.
- MFF is being coordinated by International Union for Conservation of Nature, IUCN covering, initially, six Tsunami affected countries namely India, Indonesia, Maldives, Seychelles, Srilanka and Thailand. India has agreed to participate in the IUCN- MFF Initiative.

Objectives:

- To strengthen the environmental sustainability of coastal development.
- To promote the investment of funds and effort in coastal ecosystem management for sustainable development.

The initiative seeks to effect demonstrable changes and results across four key areas of influence:

- Regional cooperation
- National programme support
- Private sector engagement
- Community action using a strategy of generating knowledge, empowering institutions and people to use that knowledge and, thereby promoting good governance in coastal areas.

The National Strategy and Action Plan (NSAP) for conservation and management of the coastal zone ecosystems spread across the country has been drafted under MFF India project.

India NSAP envisages promoting conservation and management of coastal and marine biodiversity on three important aspects:

- Coastal restoration
- Coastal livelihoods
- Integrated coastal zone management.

Biosphere Reserve

- Biosphere reserves are sites established by countries and recognized under UNESCO’s Man and the Biosphere (MAB) Programme to promote sustainable development based on local community efforts and sound science.
- The programme of Biosphere Reserve was initiated by UNESCO in 1971.
- The purpose of the formation of the biosphere reserve is to conserve in situ all forms of life, along with its support system, in its totality, so that it could serve as a referral system for monitoring and evaluating changes in natural ecosystems.

- Presently, there are 18 notified biosphere reserves in India.
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name</th>
<th>Date of Notification</th>
<th>Area (in km²)</th>
<th>Location (State)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nilgiri</td>
<td>01.09.1986</td>
<td>5520</td>
<td>Part of Wayanad, Nagarhole, Bandipur and Madumalai, Nilambur, Silent Valley and Siruvani hills (Tamil Nadu, Kerala and Karnataka).</td>
</tr>
<tr>
<td>2</td>
<td>Nanda Devi</td>
<td>18.01.1988</td>
<td>5860.69</td>
<td>Part of Chamoli, Pithoragarh, and Bageshwar districts (Uttarakhand).</td>
</tr>
<tr>
<td>3</td>
<td>Nokrek</td>
<td>01.09.1988</td>
<td>820</td>
<td>Part of Garo hills (Meghalaya).</td>
</tr>
<tr>
<td>4</td>
<td>Great Nicobar</td>
<td>06.01.1989</td>
<td>885</td>
<td>Southern most islands of Andaman And Nicobar (A&amp;N Islands).</td>
</tr>
<tr>
<td>5</td>
<td>Gulf of Mannar</td>
<td>18.02.1989</td>
<td>10,500</td>
<td>Indian part of Gulf of Mannar between India and Sri Lanka (Tamil Nadu).</td>
</tr>
<tr>
<td>6</td>
<td>Manas</td>
<td>14.03.1989</td>
<td>2837</td>
<td>Part of Kokrajhar, Bongaigaon, Barpeta, Nalbari, Kamrup and Darang districts (Assam)</td>
</tr>
<tr>
<td>7</td>
<td>Sunderbans</td>
<td>29.03.1989</td>
<td>9630</td>
<td>Part of delta of Ganges and Brahmaputra river system (West Bengal).</td>
</tr>
<tr>
<td>8</td>
<td>Simlipal</td>
<td>21.06.1994</td>
<td>4374</td>
<td>Part of Mayurbhanj district (Orissa).</td>
</tr>
<tr>
<td>9</td>
<td>Dibru-Saikhowa</td>
<td>28.07.1997</td>
<td>765</td>
<td>Part of Dibrugarh and Tinsukia Districts (Assam)</td>
</tr>
<tr>
<td>10</td>
<td>Dehang-Dibang</td>
<td>02.09.1998</td>
<td>5111.50</td>
<td>Part of Siang and Dibang Valley in Arunachal Pradesh.</td>
</tr>
<tr>
<td>11</td>
<td>Pachmarhi</td>
<td>03.03.1999</td>
<td>4926</td>
<td>Parts of Betul, Hoshangabad and Chindwara districts of Madhya Pradesh.</td>
</tr>
<tr>
<td>12</td>
<td>Khangchendzonga</td>
<td>07.02.2000</td>
<td>2619.92</td>
<td>Parts of Khangchendzonga hills and Sikkim.</td>
</tr>
<tr>
<td>14</td>
<td>Achanakamar - Amarkantak</td>
<td>30.03.2005</td>
<td>3835.51</td>
<td>Covers parts of Anupur and Dindori districts of M.P. and parts of Bilaspur districts of Chhattishgarh State.</td>
</tr>
<tr>
<td>15</td>
<td>Kachchh</td>
<td>29.01.2008</td>
<td>12,454</td>
<td>Part of Kachchh, Rajkot, Surendra Nagar and Patan Civil Districts of Gujarat State</td>
</tr>
<tr>
<td>16</td>
<td>Cold Desert</td>
<td>28.08.2009</td>
<td>7770</td>
<td>Pin Valley National Park and surroundings; Chandratal and Sarchu&amp;Kibber Wildlife Sanctuary in Himachal Pradesh</td>
</tr>
<tr>
<td>17</td>
<td>Seshachalam Hills</td>
<td>20.09.2010</td>
<td>4756</td>
<td>Seshachalam Hill Ranges covering parts of Chittoor and Kadapa districts of Andhra Pradesh</td>
</tr>
<tr>
<td>18</td>
<td>Panna</td>
<td>25.08.2011</td>
<td>2999</td>
<td>Part of Panna and Chhattarpur districts in Madhya Pradesh.</td>
</tr>
</tbody>
</table>
Ten of the eighteen biosphere reserves are a part of the World Network of Biosphere Reserves (WNBR), based on the UNESCO Man and the Biosphere (MAB) Programme list.

Assistance to Botanical Gardens

The scheme on Assistance to Botanic Gardens and Centres 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 facilities ex-site conservation of rare endemic plants.
- The achievements made in these Botanic Gardens are periodically monitored with the help of Botanical survey of India.

The Guidelines envisage establishment and promotion of Lead Gardens in each phyto-geographic zone. These Lead Gardens shall provide necessary expertise for smaller gardens, and shall be equipped with modern facilities.

The Ministry of Environment and Forests (MoEF) has released the draft of India’s new National Forest Policy (NFP), proposing the levy of a green tax. It has also touched upon the contentious issue of human-animal conflict.

**DRAFT NATIONAL FOREST POLICY, 2016**

The Ministry of Environment and Forests (MoEF) has released the draft of India’s new National Forest Policy (NFP) replacing the one crafted in 1988.

It is drafted by the Indian Institute of Forest Management, the research arm of the environment ministry.

- It has proposed the levy of a green tax.
- It addresses the issue of human-animal conflict.

Incorporating consequences of climate change but entirely ignoring one of the three forest related laws, the Forest Rights Act, the policy brings new focus to

- Plantations
- Growing trees outside forest lands
- Wood industry.

The policy continues with the national goal of a minimum of one-third of the geographical area under forest or tree cover. But it does away with the goal for hill and mountainous regions to maintain two-thirds of the geographical area under forest cover.
Promising to set up a parallel arrangement to the Forest Rights Act, the policy proposes to launch a new Community Forest Management Mission, bringing government, community and private land under the new proposed management system.

The policy moots that special communities at the gram sabha (village council) level be created to take over management of forests.

The plans prepared by the gram sabhas for their forestlands would also have to be vetted by the forest department based on rules prepared for the same, such as wider management plans the forest department prepares.

**WILDLIFE CONSERVATION**

**Integrated Development of Wildlife Habitats**

The Government of India provides financial and technical assistance to the State/UT Governments for activities aimed at wildlife conservation through the Centrally Sponsored Scheme viz. 'Integrated Development of Wildlife Habitats'.

The scheme has following three components:

- Support to Protected Areas (National Parks, Wildlife Sanctuaries, Conservation Reserves and Community Reserves)
- Protection of Wildlife Outside Protected Areas
- Recovery programmes for saving critically endangered species and habitats.

**Support to Protected Areas:**

Eligible PAs:

- National Parks
- Wildlife Sanctuaries
- Conservation Reserves and Community Reserves, other than those availing central assistance under the CSS- Project Tiger, which are duly notified under the Wildlife (Protection) Act, 1972 and are under the control of the Chief Wildlife Wardens.

**Protection of Wildlife outside Protected Areas:**

There is substantial wildlife and natural resources lying outside the Protected Areas network of India. This component seeks to support the conservation of wildlife in these areas.

Eligible areas:

High value biodiversity areas outside PAs. Areas contiguous to PAs/corridors are given priority.

The Chief Wildlife Wardens prepare a Biodiversity Conservation Plan for such selected area; Human-wildlife conflict management in and around forests.
Recovery programme for critically endangered species and habitats:

This component is for affecting the recovery of critically endangered species in the country. Initially 17 species have been identified under this component. These are Snow Leopard, Bustard (including Floricans), Dolphin, Hangul, Nilgiri Tahr, Marine Turtles, Dugongs, Edible Nest Swiftlet, Asian Wild Buffalo, Nicobar Megapode, Manipur Brow-antlered Deer, Vultures, Malabar Civet, Indian Rhinoceros, Asiatic Lion, Swamp Deer and Jerdon’s Courser.

The Director, Wildlife Preservation, Government of India, in consultation with the Wildlife Institute of India or the relevant scientific institute and with the approval of the Standing Committee of the NBWL can initiate other recovery programmes or wind up an ongoing programme.

**Wildlife Crime Control Bureau**

Wildlife Crime Control Bureau is a statutory multi-disciplinary body established by the Government of India under the MoEFCC to combat organized wildlife crime in the country.

Under Section 38 (Z) of the Wild Life (Protection) Act, 1972, it is mandated to collect and collate intelligence related to organized wildlife crime activities and to disseminate the same to State and other enforcement agencies for immediate action so as to

- Apprehend the criminals
- Establish a centralized wildlife crime data bank.
- Co-ordinate actions by various agencies in connection with the enforcement of the provisions of the Act.
- Assist foreign authorities and international organization concerned to facilitate co-ordination and universal action for wildlife crime control.
- Capacity building of the wildlife crime enforcement agencies for scientific and professional investigation into wildlife crimes and
- Assist State Governments to ensure success in prosecutions related to wildlife crimes.
- Advise the Government of India on issues relating to wildlife crimes having national and international ramifications, relevant policy and laws.
- Assist and advise the Customs authorities in inspection of the consignments of flora & fauna as per the provisions of Wild Life Protection Act, CITES and EXIM Policy governing such an item.

**Central Zoo Authority of India (CZA)**

- The Central Zoo Authority of India (CZA) is the body of the government of India responsible for oversight of zoos. It is an affiliate member of the World Association of Zoos and Aquariums (WAZA).
- The CZA was formed to bring Indian zoos up to international standards. Before the CZA was formed, many zoos were poorly managed, with unsuitable animal enclosures and little or no breeding records of animals, which caused inbreeding and hybridization.
The Central Zoo Authority has been constituted under the Wild Life (Protection) Act. Standards and norms for housing, upkeep, health care and overall management of animals in zoos has been laid down under the Recognition of Zoo Rules, 1992.

Every zoo in the country is required to obtain recognition from the Authority for its operation. The Authority evaluates the zoos with reference to the parameters prescribed under the Rules and grants recognition accordingly. Zoos which have no potential to come up to the prescribed standards and norms may be refused recognition and asked to close down.

The Authority's role is more of a facilitator than a regulator. It, therefore, provides technical and financial assistance to such zoos which have the potential to attain the desired standard in animal management. Only such captive facilities which have neither the managerial skills nor the requisite resources are asked to close down.

**Tiger Reserves**

- **Project Tiger** was launched by the Government of India in the year 1973 to save the endangered species of tiger in the country.
  - Starting from nine (9) reserves in 1973, the number is grown up to fifty (50) in 2016.
  - A total area of 71027.10 km² is covered by these project tiger areas.
**PROJECT ELEPHANT**

Project Elephant was launched by the Government of India in the year 1992 as a Centrally Sponsored Scheme with following objectives:

- To protect elephants, their habitat & corridors
- To address issues of man-animal conflict
- Welfare of captive elephants

The Project is being mainly implemented in 16 States / UTs, viz. Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Jharkhand, Karnataka, Kerala, Maharashtra, Meghalaya, Nagaland, Orissa, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand, Uttar Pradesh, West Bengal.

The Ministry of Environment, Forest and Climate Change provides the financial and technical support to major elephant range states in the country through Project Elephant.

**Elephant Reserves**
The Indian elephant (Elephas maximus) occurs in

- The Central and South Western Ghats
- North-east India
- Eastern India and
- Northern India
- Some parts of southern peninsular India.


The Animal Welfare Board of India

The Animal Welfare Board of India is a statutory advisory body on Animal Welfare Laws and promotes animal welfare in the country.

- It was established in 1962 under Section 4 of the Prevention of Cruelty to Animals Act, 1960.
- It was started under the stewardship of Late Smt. Rukmini Devi Arundale, well known humanitarian.
- It ensures that animal welfare laws in the country are diligently followed.
- It provides grants to Animal Welfare Organizations.
- It advises the Government of India on animal welfare issues.

Environmental Impact Assessment (EIA)

Environmental Impact Assessment (EIA) is an important management tool for ensuring optimal use of natural resources for sustainable development. A beginning in this direction was made in our country with the impact assessment of river valley projects in 1978-79 and the scope has subsequently been enhanced to cover other developmental sectors such as industries, thermal power projects, mining schemes etc. To facilitate collection of environmental data and preparation of management plans, guidelines have been evolved and circulated to the concerned Central and State Government Departments. EIA has now been made
mandatory under the Environmental (Protection Act, 1986 for 29 categories of developmental activities involving investments of Rs.50 crores and above.

Environmental Appraisal Committees
With a view to ensure multi-disciplinary input required for environmental appraisal of development projects, Expert Committees have been constituted for the following sectors:

- Mining Projects
- Industrial Projects
- Thermal Power Projects
- River Valley, Multipurpose, Irrigation and H.E. Projects
- Infrastructure Development and Miscellaneous Projects
- Nuclear Power Projects

Environmental Appraisal Procedure

- Once an application has been submitted by a project authority along with all the requisite documents specified in the EIA Notification, it is scrutinised by the technical staff of the Ministry prior to placing it before the Environmental Appraisal Committees.
- The Appraisal Committees evaluate the impact of the project based on the data furnished by the project authorities and if necessary, site visits or on-the-spot assessment of various environmental aspects are also undertaken.
- Based on such examination, the Committees make recommendations for approval or rejection of the project, which are then processed in the Ministry for approval or rejection.
- In case of site specific projects such as Mining, River Valley, Ports and Harbours etc., a two stage clearance procedure has been adopted whereby the project authorities have to obtain site clearance before applying for environmental clearance of their projects. This is to ensure avoiding areas which are ecologically fragile and environmentally sensitive.
- In case of projects where complete information has been submitted by the project proponents, a decision is taken within 90 days.

Monitoring

After considering all the facets of a project, environmental clearance is accorded subject to implementation of the stipulated environmental safeguards. Monitoring of cleared projects is undertaken by the six regional offices of the Ministry functioning at Shillong, Bhubaneshwar, Chandigarh, Bangalore, Lucknow and Bhopal.

Coastal Area Management

Coastal States/UTs are required to prepare Coastal Zone Management Plans (CZMPs) as per the provisions of the Coastal Regulation Zone (CRZ) Notification 1991, identifying and categorising the coastal areas for different activities and submitting it to the Ministry for approval.

The Ministry has constituted a Task Force for examination of these plans submitted by Maharashtra and Gujarat States have been discussed in the meetings of the Task Force and these need to be modified. The Government of Orissa has submitted a partial plan covering only a part of their coastal area. In respect of
West Bengal, a preliminary concept document of the CZMP has been submitted. Revised CZMP/clarifications have been received from the State of Goa and UTs of Daman & Diu, Lakshadweep and Andaman & Nicobar Islands. During the year, the Task Force had seven meetings and two site visits for consideration of the plans. Once the plans of the different States/UTs are finalised, the development activities in the coastal belt would be more forcefully regulated to ensure non-violation of CRZ Notification.

**Island Development Authority (IDA)**
The 9th meeting of IDA was held on 22.1.96 under the Chairmanship of the Prime Minister to decide on various policies and programmes aimed at integrated development of the islands, keeping in view the relevant aspects of environmental protection, and also to review the progress of implementation and impact of the programmes of development.

**Studies on Carrying Capacity**
Natural resources are finite and are dwindling at a fast pace. Optimization of natural resources for achieving the objective of sustainable development is crucial. This can be done only when environmental considerations are internalized in the development process. It has often been observed that one or more natural resource(s) becomes a limiting resource in a given region thereby restricting the scope of development portfolios. The Ministry of Environment & Forests has been sponsoring Carrying Capacity Studies for different regions. The studies involve:

- Inventorisation of the natural resources available;
- Preparation of the existing environmental settings;
- Perspective plans and their impact on natural resources through creation of "Business As Usual Scenario";
- Identification of "Hot Spots" requiring immediate remedial action to overcome air, water or land pollution;
- Formulation of alternative development scenarios including a Preferred Scenarios. A comparison between "Business As Usual" and the "Preferred Scenario" would indicate the future course of action to be adopted for development of the region after the package has been discussed with the local people as well as the planners.
Environmental Clearance granted in various sectors during current year & last 4 years

- 2012-13: 439
- 2013-14: 498
- 2014-15: 438
- 2015-16: 670
- 2016-17 (Till Dec 16): 196
**Assistance for Abatement of Pollution**

The scheme of Assistance for Abatement of Pollution was conceptualized in 1992 during the 7th Five-Year Plan with the objective inter alia to strengthen the CPCB and SPCBs/PCCs for enforcing statutory provisions for pollution abatement. The scheme is a part of a centrally sponsored umbrella scheme of ‘Pollution Abatement’. The scheme of assistance for pollution abatement comprise of sub-components are Grants-in-aid-General; Grants for creation of Capital Assets; Environment Health Cell (EHC) & Trade and Environment (PL) including North Eastern Region; Grants-in-aid-General and North Eastern Region Grants for creation of Capital Assets.

Under this Scheme the Grants are provided to the State Pollution Control Boards/UT Pollution Control Committees, Environment Departments of States/UTs, Central/State Research Institutes, and other government agencies/organizations with the aim of strengthening their technical capabilities to achieve the objectives of the Policy Statement. Assistance is also provided to North Eastern Pollution Control Boards & Pollution Control Committees as salary support for the technical staff. In addition, support is also extended for undertaking projects for Abatement of Pollution.

**Categorization of Industrial Sectors Under Red, Orange, Green And White:** CPCB has finalized the criteria for classifying industries into Red, Orange, Green and White category. The classification is based on pollution potential will help bring uniformity for its adoption by SPCBs. Classification of industries may be linked with the siting criteria, consent mechanism and determining periodicity for inspections. Red, Orange, Green and White Categories of Industries
National Ambient Air Quality Monitoring Programme: CPCB is executing a nation-wide National Ambient Air Quality Monitoring Programme (NAMP). The ambient air quality monitoring network has 514 operating stations covering 254 cities/towns in 29 States and 5 Union Territories.

CPCB has developed a network of real time data from CAAQM stations being operated by CPCB, SPCBs and PCCs. This data is provided to all stake holders and being published in public domain for taking corrective measures in time. In the beginning of the year 2015, CPCB network connected to 27 stations in 10 cities spread in 06 states, has been expanded to cover total 40 stations located in 22 cities of 11 states.

National Air Quality Index: The National Air Quality Index (AQI) was launched by Hon'ble Prime Minister on 6th April, 2015 covering 10 cities.

Presently AQI of 43 Continuous Ambient Air Quality Monitoring Stations covering 24 cities in 10 states is released and AQI Bulletin is published every day at 4:00 pm for dissemination.

National Ambient Noise Monitoring Network: CPCB in association with State Pollution Control Boards has established National Ambient Noise Monitoring Network covering 07 metropolitan cities i.e. in Mumbai, Delhi, Kolkata, Chennai, Bangalore, Lucknow and Hyderabad and installed 70 Noise Monitoring System (10 stations in each city).

Real-Time Emission & Effluent Monitoring Systems: CPCB made it mandatory to all 17 Categories of Industries and GPls to install real-time emission and effluent monitoring systems.

Out of 3377 industries to 17 category of industries to which directions were issued to 2015 industries have already installed online monitoring system and 415 industries are under process of installation.1168 units have been issued Closure directions, for non-compliance.
Hazardous and Other Wastes Management Rules, 2016

The salient features of Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 include the following:-

The ambit of the Rules has been expanded by including ‘Other Waste’.

Waste Management hierarchy in the sequence of priority of prevention, minimization, reuse, recycling, recovery, co-processing; and safe disposal has been incorporated.

All the forms under the rules for permission, import/export, filing of annual returns, transportation, etc. have been revised significantly, indicating the
stringent approach for management of such hazardous and other wastes with simultaneous simplification of procedure.

The basic necessity of infrastructure to safeguard the health and environment from waste processing industry has been prescribed as Standard Operating Procedure (SOPs), specific to waste type, which has to be complied by the stakeholders and ensured by SPCB/PCC while granting such authorisation.

Procedure has been simplified to merge all the approvals as a single window clearance for setting up of hazardous waste disposal facility and import of other wastes.

Co-processing as preferential mechanism over disposal for use of waste as supplementary resource, or for recovery of energy has been provided.

The approval process for co-processing of hazardous waste to recover energy has been streamlined and put on emission norms basis rather than on trial basis.

The process of import/export of waste under the Rules has been streamlined by simplifying the document-based procedure and by revising the list of waste regulated for import/export.

The import of metal scrap, paper waste and various categories of electrical and electronic equipment for re-use purpose has been exempted from the need of obtaining Ministry's permission.

The basic necessity of infrastructure to safeguard the health and environment from waste processing industry has been prescribed as Standard Operating Procedure (SOPs) specific to waste type.

**Responsibilities of State Government** for environmentally sound management of hazardous and other wastes have been introduced as follows:

- To set up/ allot industrial space or sheds for recycling, pre-processing and other utilization of hazardous or other waste.
- To register the workers involved in recycling, pre-processing and other utilization activities.
- To form groups of workers to facilitate setting up such facilities.
- To undertake industrial skill development activities and ensure safety and health of workers.

List of processes generating hazardous wastes has been reviewed taking into account the technological evolution in the industries.

List of Waste Constituents with Concentration Limits has been revised as per international standard and drinking water standard.

The following items have been **prohibited for import**:

- Waste edible fats and oil of animals, or vegetable origin;
- Household waste;
- Critical Care Medical equipment;

Tyres for direct re-use purpose;
Solid Plastic wastes including Pet bottles;
- Waste electrical and electronic assemblies scrap;
- Other chemical wastes especially in solvent form.

State Government is authorized to prepare integrated plan for effective implementation of these provisions, and have to submit annual report to Ministry of Environment, Forest and Climate Change.

State Pollution Control Board (SPCB) is mandated to prepare an annual inventory of the waste generated; waste recycled, recovered, utilised including co-processed; waste re-exported and waste disposed and submit to the Central Pollution Control Board by the 30th day of September every year.

**E-waste Management Rules, 2016**

**Responsibilities of the manufacturer.**

- Collect e-waste generated during the manufacture of any electrical and electronic equipment and channelize it for recycling or disposal.
- Apply for an authorisation from the concerned State Pollution Control Board.
- Ensure that no damage is caused to the environment during storage and transportation of e-waste.
- Maintain records of the e-waste generated, handled and disposed and make such records available for scrutiny by the concerned State Pollution Control Board
- File annual returns to the concerned State Pollution Control Board.

**Responsibilities of the producer.**

- The producer of electrical and electronic equipment listed in Schedule I shall be responsible for implementing the Extended Producers Responsibility with the following frameworks, namely
  - Collection and channelization of e-waste generated from the ‘end-of-life’ of their products or ‘end-of-life’ products with same electrical and electronic equipment code and historical waste.
  - The mechanism used for channelization of e-waste from ‘end-of-life’ products including those from their service centres to authorised dismantler or recycler shall be in accordance with the Extended Producer Responsibility - Authorisation. In cases of fluorescent and other mercury containing lamps, where recyclers are not available, and channelization may be from collection centre to Treatment, Storage and Disposal Facility.
  - For disposal in Treatment, Storage and Disposal Facility, a pre-treatment is necessary to immobilise the mercury and reduce the volume of waste to be disposed off.
  - Extended Producer Responsibility - Authorisation should comprise of general scheme for collection of waste Electrical and Electronic Equipment from the Electrical and Electronic Equipment placed on the market earlier, such as through dealer, collection centres, Producer Responsibility Organisation, through buy-back arrangement, exchange scheme, Deposit Refund System, etc. whether
- Providing contact details such as address, e-mail address, toll-free telephone numbers or helpline numbers to consumer(s) or bulk consumer(s) through their website and product user documentation so as to facilitate return of end-of-life electrical and electronic equipment.
- Creating awareness through media, publications, advertisements, posters, or by any other means of communication and product user documentation accompanying the equipment.
- The producer shall opt to implement Extended Producer Responsibility individually or collectively. In individual producer responsibility, producer may set up his own collection centre or implement take back system or both to meet Extended Producer Responsibility. In collective system, producers may tie-up as a member with a Producer Responsibility Organisation or with e-waste exchange or both. It shall be mandatory upon on the individual producer in every case to seek Extended Producer Responsibility - Authorisation from Central Pollution Control Board.

**Solid Waste Management Rules, 2016**

- The Rules are now applicable beyond Municipal areas and extend to urban agglomerations, census towns, notified industrial townships, areas under the control of Indian Railways, airports, airbase, Port and harbour, defence establishments, special economic zones, State and Central government organizations, places of pilgrims, religious & historical importance.
- The source segregation of waste has been mandated to channelize the waste to wealth by recovery, reuse and recycle.
- Responsibilities of Generators have been introduced to segregate waste in to three streams, **Wet (Biodegradable), Dry (Plastic, Paper, metal, wood, etc.) and domestic hazardous wastes (diapers, napkins, empty containers of cleaning agents, mosquito repellents, etc.)** and handover segregated wastes to authorized rag-pickers or waste collectors or local bodies.
- Integration of waste pickers/ rag pickers and waste dealers/ Kabadiwalas in the formal system should be done by State Governments, and Self Help Group, or any other group to be formed.
- **No person should throw, burn, or bury the solid waste generated by him, on streets, open public spaces outside his premises, or in the drain, or water bodies.**
- Generator will have to pay ‘**User Fee**’ to waste collector and for ‘**Spot Fine**’ for Littering and Non-segregation.
- Used sanitary waste like diapers, sanitary pads should be wrapped securely in pouches provided by manufacturers or brand owners of these products or in a suitable wrapping material and shall place the same in the bin meant for dry waste / non- bio-degradable waste.
- The concept of partnership in Swachh Bharat has been introduced. Bulk and institutional generators, market associations, event organizers and
hotels and restaurants have been made directly responsible for segregation and sorting the waste and manage in partnership with local bodies.
- All hotels and restaurants should segregate biodegradable waste and set up a system of collection or follow the system of collection set up by local body to ensure that such food waste is utilized for composting/bio-methanation.
- All Resident Welfare and market Associations, Gated communities and institution with an area >5,000 sq. m should segregate waste at source- in to valuable dry waste like plastic, tin, glass, paper, etc. and handover recyclable material to either the authorized waste pickers or the authorized recyclers, or to the urban local body.
- The bio-degradable waste should be processed, treated and disposed of through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local authority.
- New townships and Group Housing Societies have been made responsible to develop in-house waste handling, and processing arrangements for bio-degradable waste.
- Every street vendor should keep suitable containers for storage of waste generated during the course of his activity such as food waste, disposable plates, cups, cans, wrappers, coconut shells, leftover food, vegetables, fruits etc. and deposit such waste at waste storage depot or container or vehicle as notified by the local authority.
- The developers of Special Economic Zone, industrial estate, industrial park to earmark at least 5% of the total area of the plot or minimum 5 plots/sheds for recovery and recycling facility.
- All manufacturers of disposable products such as tin, glass, plastics packaging etc. or brand owners who introduce such products in the market shall provide necessary financial assistance to local authorities for the establishment of waste management system.
- All such brand owners who sale or market their products in such packaging material which are non-biodegradable should put in place a system to collect back the packaging waste generated due to their production.
- Manufacturers or Brand Owners or marketing companies of sanitary napkins and diapers should explore the possibility of using all recyclable materials in their products or they shall provide a pouch or wrapper for disposal of each napkin or diapers along with the packet of their sanitary products.
- All such manufacturers, brand owners or marketing companies should educate the masses for wrapping and disposal of their products.
- All industrial units using fuel and located within 100 km from a solid waste based RDF plant shall make arrangements within six months from the date of notification of these rules to replace at least 5% of their fuel requirement by RDF so produced.
- Non-recyclable waste having calorific value of 1500 K/cal/kg or more shall not be disposed of on landfills and shall only be utilized for generating energy either or through refuse derived fuel or by giving away as feed stock for preparing refuse derived fuel.
- High calorific wastes shall be used for co-processing in cement or thermal power plants.
- Construction and demolition waste should be stored, separately disposed off, as per the Construction and Demolition Waste Management Rules, 2016.
- Horticulture waste and garden waste generated from his premises should be disposed as per the directions of local authority.
- An event, or gathering organiser of more than 100 persons at any licensed/unlicensed place, should ensure segregation of waste at source and handing over of segregated waste to waste collector or agency, as specified by local authority.
- Special provision for management of solid waste in hilly areas:
  - Construction of landfill on the hill shall be avoided. A transfer station at a suitable enclosed location shall be setup to collect residual waste from the processing facility and inert waste. Suitable land shall be identified in the plain areas, down the hill, within 25 km for setting up sanitary landfill. The residual waste from the transfer station shall be disposed off at this sanitary landfill.
  - In case of non-availability of such land, efforts shall be made to set up regional sanitary landfill for the inert and residual waste.

**The Plastic Waste Management Rules, 2016**

- Increase minimum thickness of plastic carry bags from 40 to 50 microns and stipulate **minimum thickness of 50 micron** for plastic sheets also to facilitate collection and recycle of plastic waste,
- Expand the jurisdiction of applicability from the municipal area to rural areas, because plastic has reached rural areas also;
- To bring in the responsibilities of producers and generators, both in plastic waste management system and to introduce collect back system of plastic waste by the producers/brand owners, as per extended producers responsibility;
- To introduce collection of **plastic waste management fee** through pre-registration of the producers, importers of plastic carry bags/multi layered packaging and vendors selling the same for establishing the waste management system;
- To **promote use of plastic waste for road construction** as per Indian Road Congress guidelines or energy recovery, or waste to oil etc. for gainful utilization of waste and also address the waste disposal issue; to entrust more responsibility on waste generators, namely payment of user charge as prescribed by local authority, collection and handing over of waste by the institutional generator, event organizers.

An eco-friendly product, which is a complete substitute of the plastic in all uses, has not been found till date. In the absence of a suitable alternative, it is impractical and undesirable to impose a blanket ban on the use of plastic all over the country. The real challenge is to improve plastic waste management systems.

**Collect back system**
The producers, importers and brand owners who introduce the plastic carry bags, multi-layered plastic sachet, or pouches, or packaging in the market within a period of six months from the date of publication of these rules, need to establish a system for collecting back the plastic waste generated due to their products. They shall work out modalities for waste collection system based on Extended Producers Responsibility and involving State Urban Development Departments, either individually or collectively, through their own distribution channel or through the local body concerned. This plan of collection has to be submitted to the State Pollution Control Boards while applying for consent to Establish or Operate or Renewal. The producers / brand owners whose consent has been renewed before the notification of these rules shall submit such plan within one year from the date of notification of these rules and implement within two years thereafter.

**Responsibility of waste generator**

- All institutional generators of plastic waste, shall segregate and store the waste generated by them in accordance with the Solid Waste Management Rules, and handover segregated wastes to authorized waste processing or disposal facilities or deposition centres, either on its own or through the authorized waste collection agency.
- All waste generators shall pay such user fee, or charge, as may be specified in the bye-laws of the local bodies for plastic waste management, such as waste collection, or operation of the facility thereof, etc.;
- Every person responsible for organising an event in open space, which involves service of food stuff in plastic, or multi layered packaging, shall segregate and manage the waste generated during such events, in accordance with the Solid Waste Management Rules.

**Responsibility of local bodies and Gram Panchayat**

The local bodies shall be responsible for setting up, operationalization and co-ordination of the waste management system and for performing associated functions.

**Responsibility of retailers and street vendors**

- Retailers or street vendors shall not sell, or provide commodities to consumers in carry bags, or plastic sheet, or multi layered packaging, which are not manufactured and labelled or marked, as prescribed under these rules.
- Every retailer, or street vendor, selling or providing commodities in, plastic carry bags or multi layered packaging or plastic sheets, or like, or covers, made of plastic sheets which are not manufactured, or labelled, or marked, in accordance with these rules shall be liable to pay such fines, as specified under the bye-laws of the local bodies.

**Pre-registration fee**

- The shopkeepers and street vendors willing to provide plastic carry bags for dispensing any commodity shall register with local body. The local body shall, within a period of six months from the date of final publication of these rules on the Official Gazette of India notification of these rules, by
notification, or an order under their appropriate state statute or byelaws shall make provisions for such registration on payment of plastic waste management fee of minimum Rs.48, 000/- @ Rs.4,000/- per month. The concerned local body may prescribe higher plastic waste management fee, depending upon the production, or sale capacity. The registered shopkeepers shall display at prominent place that plastic carry bags are given on payment.

- Only the registered shopkeepers, or street vendors shall be eligible to provide plastic carry bags for dispensing the commodities.
- The local body shall utilize the amount paid by the customers for the carry bags exclusively for the sustainability of the waste management system within their jurisdictions.
- The introduction of provision to collect fee from the producers, importers of plastic carry bags / multi layered packaging and vendors selling the same, will strengthen the financial status of local authorities and improve Plastic Waste Management System.


- Applies to everyone who generates construction and demolition waste.

- Duties of waste Generators
  - Every waste generator shall segregate construction and demolition waste and deposit at collection centre or handover it to the authorised processing facilities
  - Shall ensure that there is no littering or deposition so as to prevent obstruction to the traffic or the public or drains.
  - Large generators (who generate more than 20 tons or more in one day or 300 tons per project in a month) shall submit waste management plan and get appropriate approvals from the local authority before starting construction or demolition or remodelling work,
  - Large generators shall have environment management plan to address the likely environmental issues from construction, demolition, storage, transportation process and disposal / reuse of C & D Waste.
  - Large generators shall segregate the waste into four streams such as concrete, soil, steel, wood and plastics, bricks and mortar,
  - Large generators shall pay relevant charges for collection, transportation, processing and disposal as notified by the concerned authorities;

- Duties of Service providers and Contractors
  - The service providers shall prepare a comprehensive waste management plan for waste generated within their jurisdiction, within six months from the date of notification of these rules,
  - Shall remove all construction and demolition waste in consultation with the concerned local authority on their own or through any agency.

- Standards for products of construction and demolition waste
• The Bureau of Indian Standards need to prepare code of practices and standards for products of construction and demolition waste
• Indian Roads Congress need to prepare standards and practices pertaining to products of construction and demolition waste in roads construction.

- **Facility for processing / recycling facility**
  • The operator of the facility shall obtain authorization from State Pollution Control Board or Pollution Control Committee.
  • The processing / recycling site shall be away from habitation clusters, forest areas, water bodies, monuments, National Parks, Wetlands and places of important cultural, historical or religious interest.
  • The processing/recycling facility exceeding five tonnes per day capacity, shall maintain a buffer zone of no development around the facility.

**FLY ASH UTILIZATION**

- A useful bye-product, ash in the form of fly ash, bottom or pond ash is available at the Coal and Lignite based thermal Power Plants. It needs to be utilized in various ways and applications.
- The future capacity addition will take into account the capabilities to ensure safe utilization of fly ash, bottom ash and pond ash. Ash has specific utilities depending upon the characteristics and Engineering properties.
- Based on the properties; the ash can be processed to enhance its utility. The safe Environmental concerns cannot afford to increased ash pond areas; increased heights of ash dykes; as well as the likely pollution it may have in air, surface water and the Ground water.
- The ash in its natural form may not be free from likely environmental hazards. The protections from environmental hazards that can be anticipated necessitate 100 percent ash utilization in a variety of ways.
- Ash needs to be converted into ash based products and utilized so that ash does not fly in air; it does not get washed away with surface water flow and also does not get leached to cause ground water pollution.
- Safe utilization of ash is essential. Ash Utilization therefore needs to be a continuous activity at all the coal and lignite based thermal power stations. Ash utilization is an industry in itself and fly ash based industry needs to be developed at the thermal power plants in the immediate vicinity and the ash dump areas. It will provide employment opportunities to many in the nearby villages.
- Ash utilization has corresponding benefits in reducing the requirement of ash pond areas, ash handling system, consumptive power and saves time and energy that is utilized for creating these infrastructures. Ash based product bring return to the society and therefore the effect on tariff is
negligible. The expenditures on ash utilization, promotional measures and facilitation component are essential.

The ash utilization is required to be carried out at all the coal and lignite based thermal power plants that are emitting ash and it needs to be carried out by all projects that are under construction, renovation, modernization and those at the preliminary stage of investigation and infrastructure development within 100km radial distance and if necessary, ash utilization may also be carried out beyond 100km radial distance.

The important areas of ash utilization are indicated below:

- Building Sector for use in bricks, blocks, tiles, cement, concrete, plaster, etc.
- Land reclamation, filling low lying areas, raising ground levels.
- Roads, embankments, ash dykes, road blocks, kerb stones, etc.
- Agriculture and wasteland area development.
- Hydro Sector, Irrigation, drains, water supply & drainage, lining of rivers, tributaries, canals, minors, sub-minors etc.
- Mine filling.
- Industrial applications & high value areas.
- Roller compacted dams, pavements, roads etc.
- Special use for ash e.g., collecting cenospheres from floating ash.

**NATIONAL RIVER CONSERVATION PLAN**
National River Conservation Plan

The river conservation programme was initiated with the launching of the Ganga Action Plan (GAP) in 1985. The Ganga Action Plan was expanded to cover other rivers under National River Conservation Plan (NRCP) in the year 1995. The objective of NRCP is to improve the water quality of rivers, which are major water sources in the country, through implementation of pollution abatement works in various towns along identified polluted stretches of rivers on cost sharing basis between the Central & State Governments.

The pollution abatement works taken up under the NRCP include:
- Interception and diversion works/laying of sewerage system to capture raw sewage flowing into the rivers through open drains and diverting them for treatment;
- Setting up of Sewage Treatment Plants (STPs) for treating the diverted sewage;
- Construction of Low Cost Sanitation Toilets to prevent open defecation on river banks;
- Construction of Electric Crematoria and Improved Wood Crematoria to conserve the use of wood;
- River Front Development works, such as improvement of bathing ghats;
- Public participation & awareness and capacity building, etc.

Presently NRCP (excluding Ganga and its tributaries) has covered polluted stretches of 31 rivers in 75 towns spread over 14 States and a treatment capacity of 2445 million litres per day (mld) has been created so far under NRCP (excluding Ganga and its tributaries). The 31 rivers covered under the programme are given in Table.

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**Externally Aided Projects:**
- Pollution Abatement of River Mula-Mutha at Pune

**Non-Externally Aided Projects:**
- Pollution abatement of River Sutlej and Beas
- Pollution abatement of River Ghaggar
- Pollution abatement of River Mindhola at Surat
- Sabarmati River Conservation Project Phase-II

National Plan for Conservation of Aquatic Ecosystems
National Wetland Conservation Programme (NWCP)

Government of India operationalized National Wetland Conservation Programme (NWCP) in close collaboration with concerned State Government during the year 1985/86. Under the programme 115 wetlands have been identified till now by the Ministry which requires urgent conservation and management initiatives.

Aim of the Scheme

Conservation and wise use of wetlands in the country so as to prevent their further degradation.

Objectives of the Scheme

The scheme was initiated with the following objectives:-

- To lay down policy guidelines for conservation and management of wetlands in the country;
- To undertake intensive conservation measures in priority wetlands;
- To monitor implementation of the programme; and
- To prepare an inventory of Indian wetlands.

Ramsar Convention on Wetland

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Ramsar Convention is the only global environment treaty dealing with a particular ecosystem.

The Ramsar Convention on Wetlands was developed as a means to call international attention to the rate at which wetland habitats were disappearing, in part due to a lack of understanding of their important functions, values, goods and services. Governments that join the Convention are expressing their willingness to
make a commitment to helping to reverse that history of wetland loss and degradation.

In addition, many wetlands are international systems lying across the boundaries of two or more countries, or are part of river basins that include more than one country. The health of these and other wetlands is dependent upon the quality and quantity of the trans-boundary water supply from rivers, streams, lakes, or underground aquifers. This requires framework for international discussion and cooperation toward mutual benefits. Major obligations of countries which are party to the Convention are:

- Designate wetlands for inclusion in the List of Wetlands of International Importance.
- Promote, as far as possible, the wise use of wetlands in their territory.
- Promote international cooperation especially with regard to trans-boundary wetlands, shared water systems, and shared species.
- Create wetland reserves.

India has 26 Ramsar sites in which Loktak Lake and Keoldeo National Park are identified by Montreux Record.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Wetland</th>
<th>State</th>
<th>Date of declaration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chandrabal</td>
<td>H.P.</td>
<td>08/11/05</td>
</tr>
<tr>
<td>2.</td>
<td>Renuka</td>
<td>H.P.</td>
<td>08/11/05</td>
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<tr>
<td>3.</td>
<td>Rudrasagar</td>
<td>Tripura</td>
<td>08/11/05</td>
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<tr>
<td>4.</td>
<td>Upper Ganga</td>
<td>U.P.</td>
<td>08/11/05</td>
</tr>
<tr>
<td>5.</td>
<td>Holarsar</td>
<td>J&amp;K</td>
<td>08/11/05</td>
</tr>
<tr>
<td>6.</td>
<td>Sarusara - Mansar</td>
<td>J&amp;K</td>
<td>08/11/05</td>
</tr>
<tr>
<td>7.</td>
<td>Bhitarpani Mangroves</td>
<td>Odisha</td>
<td>19/08/02</td>
</tr>
<tr>
<td>8.</td>
<td>Bhog Wetland</td>
<td>Madhya Pradesh</td>
<td>19/08/02</td>
</tr>
<tr>
<td>9.</td>
<td>Deor Beel</td>
<td>Assam</td>
<td>19/08/02</td>
</tr>
<tr>
<td>10.</td>
<td>East Calcutta Wetlands</td>
<td>West Bengal</td>
<td>19/08/02</td>
</tr>
<tr>
<td>11.</td>
<td>Kolleru Lake</td>
<td>Andhra Pradesh</td>
<td>19/08/02</td>
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<tr>
<td>12.</td>
<td>Sasthamkotta Lake</td>
<td>Kerala</td>
<td>19/08/02</td>
</tr>
<tr>
<td>13.</td>
<td>Ashimemburi</td>
<td>Kerala</td>
<td>19/08/02</td>
</tr>
<tr>
<td>14.</td>
<td>Tsomoriri</td>
<td>Jammu &amp; Kashmir</td>
<td>19/08/02</td>
</tr>
<tr>
<td>15.</td>
<td>Vembanad-Kol Wetland</td>
<td>Kerala</td>
<td>19/08/02</td>
</tr>
<tr>
<td>16.</td>
<td>Pooni Calmure Sanctuary</td>
<td>Tamil Nadu</td>
<td>19/08/02</td>
</tr>
<tr>
<td>17.</td>
<td>Pong Dam Lake</td>
<td>Himachal Pradesh</td>
<td>19/08/02</td>
</tr>
<tr>
<td>18.</td>
<td>Kanji</td>
<td>Punjab</td>
<td>22/01/02</td>
</tr>
<tr>
<td>19.</td>
<td>Koshi</td>
<td>Punjab</td>
<td>22/01/02</td>
</tr>
<tr>
<td>20.</td>
<td>Hariche Lake</td>
<td>Punjab</td>
<td>23/03/00</td>
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<tr>
<td>21.</td>
<td>Loktak Lake</td>
<td>Manipur</td>
<td>23/03/00</td>
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<tr>
<td>22.</td>
<td>Samohar Lake</td>
<td>Rajasthan</td>
<td>23/03/00</td>
</tr>
<tr>
<td>23.</td>
<td>Wular Lake</td>
<td>Jammu &amp; Kashmir</td>
<td>23/03/00</td>
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<tr>
<td>24.</td>
<td>Chilika Lake</td>
<td>Odisha</td>
<td>01/10/81</td>
</tr>
<tr>
<td>25.</td>
<td>Keoldeo National Park</td>
<td>Rajasthan</td>
<td>01/10/81</td>
</tr>
<tr>
<td>26.</td>
<td>Nakarwar Wetland</td>
<td>Gujarat</td>
<td>24/08/12</td>
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</tbody>
</table>
Montreux Record

Montreux Record under the Convention is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference. It is maintained as part of the Ramsar List.

Montreux Record identifies priority sites for positive national and international conservation attention. Sites may be added to and removed from the Record only with the approval of the Contracting Parties in which they lie.

World Wetland Day

World Wetland Day which is celebrated each year on 2 February, marks the date of the adoption of the Convention on Wetlands on 2 February 1971, in the Iranian city of Ramsar on the shores of the Caspian Sea. World Wetland Day was celebrated for the first time on February 2, 1997, on the 16th anniversary of the Ramsar Convention. Each year since 1997, government agencies, non-governmental organizations, and groups of citizens at all levels of the community have taken advantage of the opportunity to undertake actions aimed at raising public awareness of wetland values and benefits in general and the Ramsar Convention in particular.

Wetland (Conservation and Management) Rules, 2017

These rules shall apply to the following wetlands or wetlands complexes, namely:

- Wetlands categorised as ‘wetlands of international importance’ under the Ramsar Convention.
- Wetlands as notified by the Central Government, State Government and Union Territory Administration: (Provided that these rules shall not apply to the wetlands falling in areas covered under the Indian Forest Act, 1927, the Wild Life (Protection) Act, 1972, the Forest (Conservation) Act, 1980, the State Forest Acts, and the Coastal Regulation Zone Notification, 2011 as amended from time to time.)

Restrictions of activities in wetlands:

- The wetlands shall be conserved and managed in accordance with the principle of ‘wise use’ as determined by the Wetlands Authority.

- The following activities shall be prohibited within the wetlands, namely,
  - Conversion for non-wetland uses including encroachment of any kind.
  - Setting up of any industry and expansion of existing industries.
  - Manufacture or handling or storage or disposal of construction and demolition waste covered under the Construction and Demolition Waste Management Rules, 2016; hazardous substances covered under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 or the Rules for Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms Genetically engineered organisms or cells, 1989 or the Hazardous Wastes (Management,

- Solid waste dumping.
- Discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements.
- Any construction of a permanent nature except for boat jetties within fifty metres from the mean high flood level observed in the past ten years calculated from the date of commencement of these rules.
- Poaching.

**NATIONAL AFFORESTATION**

**National Afforestation Programme**

As per 10th Plan document of Planning Commission relating to the Forests and Environment sector, the National Afforestation Programme (NAP) Scheme was initiated by scaling-up the Saminavit Gram Vanikaran Samridhi Yojana (SGVSY) project experience and converging all afforestation schemes of the 9th Plan period to avoid duplicity or redundancy, and at the same time keeping in focus the decentralization agenda of the government. NAP is being operated as a 100% Central Sector Scheme.

Objectives:

The overall objective of the scheme is to develop the forest resources with people’s participation, with focus on improvement in livelihoods of the forest-fringe communities, especially the poor.

NAP Scheme aims to support and accelerate the ongoing process of devolving forest protection, management and development functions to decentralized institutions of Joint Forest Management Committee (JFMC) at the village level, and Forest Development Agency (FDA) at the forest division level.
Components:

Financial support under NAP Scheme is available for:

- Mobilisation of village JFMC, and Micro-planning in project villages
- Afforestation following components:
  - Aided Natural Regeneration
  - Artificial Regeneration
  - Bamboo plantation
  - Cane Plantation
  - Mixed Plantation of trees having MFP & medicinal value
  - Regeneration of perennial herbs & shrubs of medicine value
  - Pasture Development/ Silvipasture
- Soil & Moisture Conservation
- Entry Point Activity (for village development; average assistance Rs. 1.6 lakh per village)
- Fencing, Monitoring & Evaluation, Training, Awareness raising, Overheads

Eco-Development Forces scheme

The Scheme was initiated by the Ministry of Defence in 1982 with a view to securing involvement of ex-servicemen in afforestation and eco-development in remote and difficult areas to undertake restoration of degraded ecosystems through afforestation, soil conservation and water resource management techniques. The scheme also serves as a mechanism to rehabilitate the ex-servicemen for productive work and to create employment for retired army personnel mainly in the rural areas. The Scheme has been in operation for last four Five Year Plans. Therefore, the basic requirements with regard to procedural and financial aspects stand fulfilled. Eco task force (ETF) battalions work under the scheme.

The progress of the Eco- Task Force (ETF) Battalions is being closely reviewed jointly by Ministry of Defence and MoEFCC.

National Mission for Green India (GIM)

National Mission for Green India (GIM) is one of the eight Missions outlined under the National Action Plan on Climate Change (NAPCC). It aims at protecting; restoring and enhancing India’s diminishing forest cover and responding to climate change by a combination of adaptation and mitigation measures. It envisages a holistic view of greening and focuses on multiple ecosystem services, especially, biodiversity, water, biomass, preserving mangroves, wetlands, critical habitats etc. along with carbon sequestration as a co-benefit. This mission has adopted an integrated cross-sectoral approach as it will be implemented on both public as well as private lands with a key role of the local communities in planning, decision making, implementation and monitoring.
Mission Goals

- To increase forest/tree cover and improve quality of forest/tree cover of forest/non-forest lands.
- To improve/enhance eco-system services like carbon sequestration and storage (in forests and other ecosystems), hydrological services and biodiversity; along with provisioning services like fuel, fodder, and timber and non-timber forest produces (NTFPs).
- To increase forest based livelihood income of households.
- Agro-forestry and Social-forestry
- Restoration of wetlands
- Promoting alternative fuel energy

Ecosystems Service Improvement Project

Green India Mission Division intends to take up a World Bank aided "Ecosystem Services Improvement Project" (ESIP) in selected landscapes of Chhattisgarh and Madhya Pradesh States which has been designed to enhance the outcomes of the GIM. The project proposes to improve forest quality and productivity along with interventions aimed at reforestation, reducing land degradation, institutional capacities building and enhancing NTFP trade and improve the livelihoods of forest dependent communities in Central Indian Highlands.

The intended major outcomes of the project are:

- Improved ecosystem services and reversal of land degradation in select locations at the landscape level, resulting in an overall net increase in carbon sequestration, higher volumes of NTFP and increased availability of fodder for cattle and other livestock.
- Augmentation of the shared natural resources on which extreme poor communities depend and therefore, contribute to enhancing and sustaining their incomes.
- Enhance connectivity between Protected Areas (PA) by geographically targeting investments in biological corridor areas that are remote, fragmented and often poorly connected.

Increased availability of tree and plant biomass, Non-Timber Forest Products (NTFPs), firewood and small timber for bonafide use is expected, which are available to communities;

Inclusive growth by reaching the yet un-served communities living around remote forest areas; and

Increased wage labour opportunities for the local population, particularly during the lean agriculture season, when the bulk of pre-plantation activities are carried out.

RESEARCH IN ENVIRONMENT

The Ministry of Environment and Forest, is classified as a ‘Scientific Ministry’ under the Government of India. Since its inception in 1985, the Ministry has been funding research through grant-in-aid projects to many research institutions in different areas under the broad ambit of environment protection and management. The Ministry has brought out Guidelines for Support to Environmental Research in
the year 2012. The Ministry has taken a number of new initiatives to strengthen scientific research in the area of environmental sciences. Some of these include institution of National Environmental Sciences Fellows Programme, Mahatma Gandhi Chair in Ecology and Environment etc.

**Environment Research Programme (EnvRP)**

- Environment Research Programme (EnvRP) deals with problems related to pollution and development of suitable cost effective technologies for abatement of pollution.
- Emphasis is laid on development of eco-friendly biological and other interventions for prevention, abatement of pollution and development of strategies, technologies etc. for control of pollution.
- Projects are also encouraged for development of biodegradable plastics, to carryout epidemiological studies, strategies to reduce impact of mining, chemical pollution of soils, and hazardous substances including pesticides, heavy metals etc.
- Projects related to waste recycling and resource recovery from waste along with the development of eco-friendly and cleaner technologies are given priority. Projects are supported in the identified thrust area of environment research.
- As per the Guideline the Programme Advisory Committee for Environment Research Programme (EnvRP), will appraise and scrutinize the new research proposals and also review the ongoing proposals.

**Ecosystem Research Programme (EcRP)**

- Ecosystem Research Programme is an interdisciplinary programme of research which emphasizes ecological approach for studying the relationship between man and environment.
- The Ecosystem Research Programme (EcRP) deals with “green issues” relating to ecology, conservation of natural resources, Eastern and Western Ghats, aquatic and terrestrial ecosystems, mountain ecosystems, tropical rainForest, wetlands, mangroves and coral reefs, biosphere reserves, biodiversity and the study of inter-relationships between humans and environment and seeks to generate scientific knowledge needed to manage natural resources wisely.
- The objective of the programme is to develop a basis within the field of natural and social sciences for rational use and conservation of resources for general improvement of the relationship between man and his environment.
- The programme seeks to provide a scientific basis to solve the practical problems of resource management. The programme also seeks to provide a scientific knowledge and trained personnel needed to manage the natural resources in a rational and sustainable manner.
- Ecosystem studies become even more important as the Earth’s environmental ecosystems are increasingly being affected at all levels. Ecological understanding and research in this area offer tangible hope for addressing extremely complex and potentially devastating assaults on local, regional and global ecosystems.
Under the scheme, emphasis is laid on multi-disciplinary aspects of environmental conservation with emphasis on eco-system approach consistent with the identified thrust areas and orientation.

As per the Guideline the Programme Advisory Committee for Ecosystem Research Programme (EcRP), will appraise and scrutinize the new research proposals and also review the ongoing proposals.

**Research Programme in Socio-Economic issues of Environment (RPSE)**

- The Programme supports research on environmental and ecological economics, socio-economic issues arising out of extant as well as new contemplated legislations, tribal, rural, urban issues vis-à-vis legislation, role of gram panchayats and civil society in the implementation of environmental legislation.
- The programme is governed by the Guidelines for support to Environmental Research, 2012.
- As per the Guideline the Programme Advisory Committee for Research Programme in Socio-Economic issues of Environment (RPSE), will appraise and scrutinize the new research proposals and also review the ongoing proposals. The constitution of the Committee is attached in Annexure –III.

**NATIONAL MISSION ON HIMALAYA STUDIES**

Realizing that the Himalaya is important for Ecological Security of the country, the Government of India attaches highest priority to protect unique but highly fragile Himalayan ecosystem. The National Mission on Himalayan Studies (NMHS), a Central Sector Grant-in-aid Scheme, therefore, targets to provide much needed focus, through holistic understanding of system’s components and their linkages, in addressing the key issues relating to conservation and sustainable management of natural resources in Indian Himalayan Region (IHR). The ultimate goal is to improve quality of life and maintain ecosystem health of the region to ensure long-term ecological security to the country.
As the Mission specifically targets the Indian Himalayan Region (IHR), the jurisdiction of NMHS includes **10 Himalayan states fully (i.e., Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and Uttarakhand) and two states partially (i.e., hill districts of Assam and West Bengal)**. With a broad Vision to support the sustenance and enhancement of the ecological, natural, cultural, and socio-economic capital assets and values of the IHR, the mission is to launch and support innovative studies and related knowledge interventions. The NMHS envisages to work towards a set of linked and complementary goals to:

1. Foster conservation and sustainable management of natural resources;
2. Enhance supplementary and/or alternative livelihoods and overall economic well-being of the region;
3. Control and prevent pollution in the region;
4. Foster increased/augmented human and institutional capacities and the knowledge and policy environment in the region; and
5. Strengthen, greening, and fostering development of climate-resilient core infrastructure and basic services assets.

**Indian Council of Forestry Research and Education**

Institutes under the Indian Council of Forestry Research and Education

- Advanced Research Centre for Bamboo and Rattan, Aizawl
- Arid Forest Research Institute, Jodhpur
- Centre for Forest-based Livelihoods and Extension (CFLE), Agartala
- Centre for Forestry Research and Human Resource Development, Chhindwara
- Centre for Social Forestry and Eco-Rehabilitation, Allahabad
- Forest Research Institute (India), Dehradun
- Himalayan Forest Research Institute, Shimla
- Institute of Forest Biodiversity, Hyderabad
- Institute of Forest Genetics and Tree Breeding, Coimbatore
- Institute of Forest Productivity, Ranchi
- Institute of Wood Science and Technology,
- Bangalore Rain Forest Research Institute, Jorhat
- Tropical Forest Research Institute, Jabalpur
- Van Vigyan Kendras (Forest Science Centres)
National Green Corps

National Green Corps is a major initiative of MOEFCC for creating environmental awareness launched in 2001-02 which aims at building cadres of young children working towards environmental conservation and sustainable development. The phenomenal response that NGC has received and has made the network more than 100000 Eco clubs across the country. It is one of the largest conservation networks that indicates its importance at grass root level in taking the environment awareness at mass.

The unique partnership between the MoEFCC, the state Government agencies along with the dedicated NGOs, working in the field of Environmental Education has contributed to the success of the programme.

It is operated through Eco-clubs set up in schools registered as members of NGC, this programme exposes school children to in-depth field experiences, and provides opportunities to convert their ideas into creative action.

The programme has a cascading effect, seeks to redirect the consciousness of students towards environment friendly attitudes and actions and goes beyond schools, promoting school-society interactions to sensitize the society. Also in order to strengthen monitoring mechanism of NGC programme, MoEFCC is in process to establish Management Information system (MIS) which will open up vistas in sharing and accessing the information on NGC among all stakeholders. The MIS reporting and monitoring would be interactive and creative in ensuring NGC mobility and services.

National Environmental Awareness Campaign (NEAC)

The NEAC was launched in 1986 with the objective of creating environmental awareness at the national level. In this campaign, nominal financial assistance is provided to NGOs, schools, colleges, universities, research institutes, women and
youth organisations, army units, government departments etc. from all over the country for conducting awareness raising and action oriented activities. Thirty four Regional Resource Agencies (RRAs) appointed by the Ministry are involved in conducting, supervising and monitoring the NEAC activities.

**Global Learning and Observations to Benefit the Environment (GLOBE)**

Global Learning and Observations to Benefit the Environment (GLOBE) is a hands-on international environmental science and educational program.

The GLOBE Programme was introduced in April 1994 by U. S. Vice President Al Gore.

GLOBE links students, teachers, and the scientific research community in an effort to learn more about the environment through student data collection and observation.

**Centres of Excellence**

**Centre for Environment Education (CEE), Ahmedabad**

CEE has launched Paryavaran Mitra, one of the largest sustainability and climate change education programmes in the world on 24th July 2010. Paryavaran Mitra is a programme for students that envisions creating Paryavaran Mitra (Friends of the Environment) in schools across India. The goal of the programme is to create a network of young people across the nation who have the knowledge, awareness and commitment to meet the challenges of global citizenship and Climate Change. CEE also implements NGC programme in fifteen States and two UTs as resource agency.

**CPR Environmental Education Centre (CPREEC), Chennai**

The objective of CPREEC is to create awareness among various stakeholders about current environmental issues and our responsibilities towards the preservation of our environment. The programmes are conducted in the states of Andhra Pradesh, Goa, Karnataka, Kerala, Orissa, Maharashtra and Tamil Nadu and the Union Territories of Andaman and Nicobar Islands and Puducherry.

**Centre for Animals and Environment, CARTMAN, Bengaluru**

The Project on Centre of Excellence for Animals & Environment (CAE) awarded by the Ministry to CARTMAN, Bengaluru in 2000 and discontinued after two years for administrative reasons was resumed during 2009.

The main objective of the Project is to study the mutual dependence and inter-relationship between the Animals (Livestock) and Environment (Plant Life) and initiate steps to preserve environment and to improve the health and welfare of animals by making them more productive. Another activity envisaged is to eliminate pollution of environment caused by City based Abattoirs by providing alternate locations where animals are born and reared. This would also result in development of rural areas by retaining the Value added in the process in villages and nearby towns.
The Centre for Ecological Sciences

The Centre for Ecological Sciences at the Indian Institute of Science, Bangalore offers exciting opportunities for research in a variety of areas in ecology. These include Animal Behaviour, Evolutionary Biology and Socio-biology, Community and Habitat Ecology, Molecular Genetics and Conservation Biology, Large Mammal and Forest Ecology, and Climate Change. The projects consist of theoretical, laboratory and field-based research with the different approaches being used in a complementary manner.

The Salim Ali Centre for Ornithology and Natural History (SACON)

The Salim Ali Centre for Ornithology and Natural History (SACON) was formally inaugurated on 5th June 1990. Located at Anaikatty, 24km northwest of Coimbatore, SACON is a national centre for studies in Ornithology and Natural History. The centre was named befittingly after Dr. Salim Ali in appreciation of his life-long services to India's bird life and conservation of natural resources. Apart from developing and conducting regular postgraduate courses in Ornithology and Natural History, SACON also designs and conducts research in ornithology covering all aspects of biodiversity and natural history.

Centre for Environmental Management of Degraded Ecosystems (CEMDE)

Centre for Environmental Management of Degraded Ecosystems (CEMDE) functions under the aegis of School of Environmental Studies (SES), University of Delhi. Established in 2001, the Centre works towards strengthening awareness, research and training in priority areas of environmental management of degraded ecosystems. The Centre closely coordinates with the other departments of SES, viz. Department of Environmental Biology and Centre for Interdisciplinary Studies of Mountain & Hill Environment (CISMHE) on issues of biodiversity conservation, habitat loss, pollution and rehabilitation of displaced people due to developmental activities.

Madras School of Economics

The Ministry of Environment and Forests designated Madras School of Economics as a Centre for Excellence in Environmental Economics in 2002. The main objectives of the Centre are to conduct research on issues of national importance in this field along with providing teaching and training support to students, technicians, economists, non-economists and industries. The Centre also disseminates the relevant and latest information available on environmental economics.

The Foundation for Revitalisation of Local Health Traditions (FRLHT)

The Foundation for Revitalisation of Local Health Traditions (FRLHT), Bangalore is a dedicated Centre of Excellence on Medicinal Plants and Traditional Knowledge. Over the past 14 years, FRLHT has been spearheading action and research on various issues related to conservation and management of medicinal plant resources. The Centre has also helped the State Forest Departments of several states in setting up a network of 55 sites for conservation of priority medicinal plants.
ENVIRONMENTAL INFORMATION

The Environmental Information System (ENVIS) was implemented by the Ministry by end of 6th Five Year Plan as a Plan Scheme for environmental information collection, collation, storage, retrieval and dissemination to policy planners, decision makers, scientists and environmentalists, researchers, academicians and other stakeholders.

ENVIS is a decentralized computerized network database system consisting of the focal point located in the Ministry and a chain of network partners, known as ENVIS Centres located in the potential organizations/institutions throughout the country.

In order to develop ENVIS network as a comprehensive distributed environmental information network system, the ambit of ENVIS was extended to cover all the States/UTs of the country. Necessary guidelines and policies were provided to revise the earlier EFC of the scheme and the new concept for covering the State Government departments were completed through a revised SFC.

The National Green Tribunal

The National Green Tribunal has been established on 18.10.2010 under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto. It is a specialized body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.

The Tribunal’s dedicated jurisdiction in environmental matters shall provide speedy environmental justice and help reduce the burden of litigation in the higher courts. The Tribunal is mandated to make and endeavour for disposal of applications or appeals finally within 6 months of filing of the same. Initially, the NGT is proposed to be set up at five places of sittings and will follow circuit procedure for making itself more accessible. New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other 4 place of sitting of the Tribunal.
CLIMATE CHANGE

Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or external forces, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

Greenhouse gases (for example, carbon dioxide, methane, nitrous oxide, water vapour, ozone), re-emit some of this heat to the earth's surface. If they did not perform this useful function, most of the heat energy would escape, leaving the earth cold (about -18°C) and unfit to support life.

However, ever since the Industrial Revolution began about 150 years ago, man-made activities have added significant quantities of GHGs to the atmosphere. The atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have grown by about 31%, 151% and 17%, respectively, between 1750 and 2000 (IPCC 2001).

An increase in the levels of GHGs could lead to greater warming, which, in turn, could have an impact on the world’s climate, leading to the phenomenon known as climate change. Indeed, scientists have observed that over the 20th century, the mean global surface temperature increased by 0.6°C (IPCC 2001).

However, variations in temperature have also occurred in the past - the best known is the Little Ice Age that struck Europe in the early Middle Ages, bringing about famines, etc. It is therefore difficult to determine whether current observations of increasing temperature are due to natural variability or whether they have been forced by anthropogenic (man-made) activities.

Scientific studies and projections are further complicated by the fact that the changes in temperature that they have been observing do not occur uniformly over different layers of the lower atmosphere or even different parts of the earth.

The Earth’s climate system constantly adjusts so as to maintain a balance between the energy that reaches it from the sun and the energy that goes from Earth back to space. This means that even a small rise in temperature could mean accompanying changes in cloud cover and wind patterns. Some of these changes may enhance the warming (positive feedback), while others may counteract it (negative feedback). Negative feedback (causing a cooling effect) may result from an increase in the levels of aerosols (small particles of matter or liquid that can be produced by natural or man-made activities). Positive feedback may result from an increase in water vapour (because of greater evaporation with temp rise), which itself is a GHG and can further add to the warming effect.

All the factors described above complicate the work of scientists who try to predict the fallout of climate change.
The United Nations Framework Convention on Climate Change

The UNFCCC entered into force on 21 March 1994. Today, it has near-universal membership. The 197 countries that have ratified the Convention are called Parties to the Convention.

The UNFCCC is a “Rio Convention”, one of three adopted at the “Rio Earth Summit” in 1992. Its sister Rio Conventions are the UN Convention on Biological Diversity and the Convention to Combat Desertification. The three are intrinsically linked. It is in this context that the Joint Liaison Group was set up to boost cooperation among the three Conventions, with the ultimate aim of developing synergies in their activities on issues of mutual concern. It now also incorporates the Ramsar Convention on Wetlands.

Preventing “dangerous” human interference with the climate system is the ultimate aim of the UNFCCC.

The Convention:

Recognized that there was a problem.

In 1994, when the UNFCCC took effect, there was less scientific evidence than there is now. The UNFCCC borrowed a very important line from one of the most successful multilateral environmental treaties in history (the Montreal Protocol, in 1987): it bound member states to act in the interests of human safety even in the face of scientific uncertainty.

Sets a lofty but specific goal.

The ultimate objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner."

Puts the onus on developed countries to lead the way.

The idea is that, as they are the source of most past and current greenhouse gas emissions, industrialized countries are expected to do the most to cut emissions on home ground. They are called Annex I countries and belong to the Organization for Economic Cooperation and Development (OECD). They include 12 countries with "economies in transition" from Central and Eastern Europe. Annex I countries were expected by the year 2000 to reduce emissions to 1990 levels. Many of them have taken strong action to do so, and some have already succeeded.

Directs new funds to climate change activities in developing countries.

Industrialized nations agree under the Convention to support climate change activities in developing countries by providing financial support for action on climate change-- above and beyond any financial assistance they already provide to these countries. A system of grants and loans has been set up through the Convention and is managed by the Global Environment Facility. Industrialized countries also agree to share technology with less-advanced nations.
Keeps tabs on the problem and what’s being done about it.

Industrialized countries (Annex I) have to report regularly on their climate change policies and measures, including issues governed by the Kyoto Protocol (for countries which have ratified it).

They must also submit an annual inventory of their greenhouse gas emissions, including data for their base year (1990) and all the years since.

Developing countries (Non-Annex I Parties) report in more general terms on their actions both to address climate change and to adapt to its impacts - but less regularly than Annex I Parties do, and their reporting is contingent on their getting funding for the preparation of the reports, particularly in the case of the Least Developed Countries.

Charts the beginnings of a path to strike a delicate balance.

Economic development is particularly vital to the world’s poorer countries. Such progress is difficult to achieve even without the complications added by climate change. The Convention takes this into consideration by accepting that the share of greenhouse gas emissions produced by developing nations will grow in the coming years. Nonetheless, in the interests of fulfilling its ultimate goal, it seeks to help such countries limit emissions in ways that will not hinder their economic progress. One such win-win solution was to emerge later, when the Kyoto Protocol to the Convention was conceived.

Kicks off formal consideration of adaptation to climate change.

The Convention acknowledges the vulnerability of all countries to the effects of climate change and calls for special efforts to ease the consequences, especially in developing countries which lack the resources to do so on their own. In the early years of the Convention, adaptation received less attention than mitigation, as Parties wanted more certainty on impacts of and vulnerability to climate change. When IPCC’s Third Assessment Report was released, adaptation gained traction, and Parties agreed on a process to address adverse effects and to establish funding arrangements for adaptation. Currently, work on adaptation takes place under different Convention bodies. The Adaptation Committee, which Parties agreed to set up under the Cancun Adaptation Framework as part of the Cancun Agreements, is a major step towards a cohesive, Convention-based approach to adaptation.

**TIMELINE of UNFCCC**

1992 — The INC adopts UNFCCC text. At the Earth Summit in Rio, the UNFCCC is opened for signature along with its sister Rio Conventions, UNCBD and UNCCD. More about the two other Rio Conventions: UNCBD and UNCCD.


1995 — The first Conference of the Parties (COP 1) takes place in Berlin.

1996 — The UNFCCC Secretariat is set up to support action under the Convention. More on the Secretariat.


2005 — Entry into force of the Kyoto Protocol. The first Meeting of the Parties to the Kyoto Protocol (MOP 1) takes place in Montreal. In accordance with Kyoto Protocol requirements, Parties launched negotiations on the next phase of the KP under the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP). What was to become the Nairobi Work Programme on Adaptation (it would receive its name in 2006, one year later) is accepted and agreed on. More about the Nairobi Work Programme.


This timeline detailing the international response to climate change provides a contextual entry point to the Essential Background. You can also use the links on the left-hand column under Essential Background to navigate this section.

2009 — Copenhagen Accord drafted at COP 15 in Copenhagen. This was taken note of by the COP. Countries later submitted emissions reductions pledges or mitigation action pledges, all non-binding.

2010 — Cancun Agreements drafted and largely accepted by the COP, at COP16. More on the Cancun Agreements.

2011 — The Durban Platform for Enhanced Action drafted and accepted by the COP, at COP17. More on the Durban outcomes.

2012 - The Doha Amendment to the Kyoto Protocol is adopted by the CMP at CMP 8. More on the Doha Amendment. Several decisions taken opening a gateway to greater ambition and action on all levels. More on the Doha Climate Gateway.

2013 - Key decisions adopted at COP 19/CMP 9 include decisions on further advancing the Durban Platform, the Green Climate Fund and Long-Term Finance, the Warsaw Framework for REDD Plus and the Warsaw International Mechanism for Loss and Damage. Under the Durban Platform, Parties agreed to submit “intended nationally determined contributions”, known as INDCs, well before the Paris conference. More on the Warsaw Outcomes.


**Paris Agreement:**

The Paris Agreement’s aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework. There will be a global stocktake every 5 years to assess the collective progress towards achieving the purpose of the Agreement and to inform further individual actions by Parties.

Nationally determined contributions

The Paris Agreement requires all Parties to put forward their best efforts through “nationally determined contributions” (NDCs) and to strengthen these efforts in the years ahead. This includes requirements that all Parties report regularly on their emissions and on their implementation efforts.

Status of ratification

The Paris Agreement entered into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55% of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

**India’s Intended Nationally Determined Contribution:**

- India has submitted its Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change. Some of the salient points of the INDC are:

  • To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation.

  • To adopt a climate-friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development.

  • To reduce the emissions intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level.
To achieve about 40 per cent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030, with the help of transfer of technology and low cost international finance, including from Green Climate Fund.

To create an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover by 2030.

To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management.

To mobilize domestic and new and additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.

To build capacities, create domestic framework and international architecture for quick diffusion of cutting edge climate technology in India and for joint collaborative R&D for such future technologies.

**OZONE DEPLETION**

India signed and ratified the Vienna Convention for the Protection of the Ozone Layer in 1991 and the Montreal Protocol on Substances that Deplete the Ozone Layer in 1992, signalling the country’s commitments to the global cause of addressing the harmful effects of the ozone layer depletion.

**Highlights**

Since 1993, the United Nations Development Programme (UNDP) has played a crucial role in the phase-out of ozone depleting substances by the Government of India and has been instrumental in implementing US$ 40 million in multilateral fund projects.

As a result of support, India completely phased out production and consumption of Chlorofluorocarbons, carbon tetrachloride and halons, man-made chemicals responsible for the depletion of the Ozone Layer. This remarkable milestone was achieved two years ahead of schedule. With this achievement, India has contributed significantly to this global environmental cause, by reducing 25,000 ozone depleting particles tonnes and a further potential of 23,000 ozone depleting particles.

Carbon tetrachloride, a harmful chemical is used by some of the largest steel manufacturing units in the country, to clean steel. Today, many steel companies, including the country’s largest public sector undertaking in the steel sector, use tetrachloroethene which is less harmful for the environment.
Manufacturers of metered dose inhalers have completely transitioned to ozone-friendly and affordable alternatives, demonstrating the potential for environment-friendly public health management in the country.

As a next step, UNDP is supporting the Government of India in phasing out Hydrochlorofluorocarbons (HCFCs) by 2030, as part of the country’s commitment to the Montreal Protocol.

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UNDP has also supported close consultations with industry through the Ozone Cell, a separate unit within the Ministry of Environment and Forests dedicated to protecting the ozone layer, to ensure phase-out in harmony with the country’s National Industrial Development Strategy. Updates to the strategy has focused on lessons learnt, and outlining of measures to phase out remaining ozone depleting substances in the country.

The second phase of collaboration between UNDP and the Government in 2000-2010 supports the phase out of other ozone-depleting chemicals in a diverse range of industries. For example, carbon tetrachloride, a harmful chemical is used by some of the largest steel manufacturing units in the country, to clean steel. Today, many steel companies, including the country’s largest public sector undertaking in the steel sector, use tetrachloroethene which is less harmful for the environment.

Results are also visible in the medical sector. India produces and exports millions of metered dose inhalers each year, providing relief to countless people suffering from asthma. With UNDP support, manufacturers of metered dose inhalers have completely transitioned to ozone-friendly and affordable alternatives, demonstrating the potential for environment-friendly public health management in the country. The country is now focusing attention on phasing out such chemicals in foam, refrigeration and halon sector. As a next step, UNDP is supporting the Government of India in phasing out (HCFCs) by 2030, as part of the country’s commitment to the Montreal Protocol.

Kigali Agreement

Highlights

- Around 197 countries, including India, China and the USA, agreed at Kigali to reduce the use of HFCs by roughly 85% of their baselines by 2045.
- It amends the 1987 Montreal Protocol.
It is proposed to reduce Hydro fluorocarbons (HFCs).

**India and Kigali Agreement**

- India joins the nations of the world in lauding the Hydro fluorocarbon (HFC) Amendment to the Montreal Protocol
- About 2% to 3% of India’s households have ACs, the demand for which is expected to grow at 20% per annum.
- India had announced that it will eliminate the use of HFC-23, a greenhouse gas that harms the ozone layer, by 2030.
- Alternatives such as Hydro fluoroolefins (HFOs) are expensive and will have a bearing on the cost structure.
- Most of the alternative gases are not manufactured in India currently and some of these have got patent rights to somewhere around 2025.
- The cost burden also includes onetime cost of the product re-design, servicing equipment, training of personnel etc.
- The agreement recognizes the development imperatives of high-growth economies like India, and provides a realistic and viable roadmap for the implementation of a phase-out schedule.
- This will also provide a mechanism for countries like India to access and develop technologies that leave a low carbon footprint.
- The Kigali amendment is a signal to industry and entrepreneurs in India and across the world to develop viable and scalable climate solutions.
- India needs to invest and encourage in research and development of alternatives.
- Domestically, it needs to push industry segments that are able to make the transition to climate friendly refrigerant gases soon and not wait till 2028 to begin the process.
- Need to align its goals for ‘Make in India’ with green technologies in order to remain competitive in global markets.

**DESERIFICATION**

**UNCCD and India**

Desertification, along with climate change and the loss of biodiversity were identified as the greatest challenges to sustainable development during the 1992 Rio Earth Summit. Adopted in 1994, United Nations Convention to Combat Desertification (UNCCD) entered into force in 1996 and became a legally binding international agreement linking environment and development to sustainable land management.

The Convention addresses specifically the issue of Desertification, Land Degradation and Drought (DLDD) in arid, semi-arid and dry sub-humid areas of...
dry lands, which are home to some of the most vulnerable people and ecosystems in the world. The Convention’s 195 parties work together to improve the living conditions for people in dry lands, to maintain and restore land and soil productivity, and to mitigate the effects of drought.

India became a signatory to UNCCD on 14th October 1994 and ratified it on 17th December 1996. The Ministry of Environment, Forest and Climate Change is the nodal Ministry in the Government of India for the UNCCD, and Desertification Cell is the nodal point within the Ministry to co-ordinate all issues pertaining to the Convention.

Combating DLDD requires interventions in form of Preventive and Curative Measures. Preventive measures include adopting Sustainable Land Management (SLM) practices that can ensure sustainable productivity of land resources and; food, water and livelihood security for present and future generations. Curative measures involve undertaking restoration and reclamation interventions on degraded lands and subsequent SLM of reclaimed land resources.

After ratification in 1996, India prepared its National Action Programme (NAP) to Combat Desertification and sent it to the UNCCD Secretariat in 2001.

NAP 2001 provides an overview of
- The status of natural resources in the country.
- The status and impacts of desertification
- Measures under implementation
- The initiatives taken for combating desertification.

Though India does not have a specific policy or legislative framework for combating desertification as such, the concern for arresting and reversing land degradation and desertification gets reflected in many of our national policies for e.g.,

- National Water Policy 2012
- National Forest Policy 1988
- National Agricultural Policy 2000
- Forest (Conservation) Act 1980
- Environment (Protection) Act 1986
- National Environmental Policy 2006
- National Policy for Farmers 2007
- National Rain-fed Area Authority (NRAA)- 2007

These acts and policies have enabling provisions for addressing these problems. It is also implicit in the goals of sustainable forest management (SFM), sustainable agriculture, sustainable land management (SLM) and the overarching goal of sustainable development which the country has been pursuing. The subject has in fact been engaging the attention of our planners and policy makers since the inception of planning. The first five year plan (1951-1956) had ‘land rehabilitation’ as one of the thrust areas. In the subsequent plans too, high priority has been consistently attached to development of the dry lands.
International Cooperation - Multi-lateral matters: The division is nodal for United Nations Environment Programme (UNEP), Global Environment Facility (GEF), United Nations Development Programme (UNDP), International Resource Panel (IRP), the World Bank (WB), and regional bodies like Economic & Social Commission for Asia & Pacific (ESCAP), South Asian Association for Regional Cooperation (SAARC), South Asia Cooperative Environment Programme (SACEP), Association of South-East Asian Nations (ASEAN), Asian Development Bank (ADB), European Union (EU), India-Brazil-South Africa (IBSA) Summit on Environment amongst others. The Division supports annual contributions to various UN and other international bodies working on environmental matters. The Division directly contributes USD 31,850 annually to South Asia Cooperative Environment Programme (SACEP).

EXTERNALLY AIDED PROJECTS

- Himachal Pradesh Forest Ecosystem Management & Livelihood Project (JICA)
- Country Focused training of Officials of MoEF&CC and State Forest Department on issues around sustainable Forest Management, Biodiversity conservation and adoption of new technologies – (JICA)
- Himachal Pradesh: Forests for Prosperity – (World Bank)
- Innovation in Green Growth Management, Uttarakhand – (World Bank)
- World Bank project on Situation analysis on Forest Fire – (World Bank)
- Application for Technical Cooperation project on Project Development of REDD plus implementation mechanism for Sustainable Forest Management in Odisha – (JICA)
- Nagaland Afforestation and Eco-development project (JICA)
- Odisha Forestry Sector Development Project (JICA)

Working Group (WG) meetings:

BRICS (Brazil, Russia, India, China & South Africa) Environment Ministers meeting: India being BRICS Chair for the year 2016, from environment perspective, the Ministry of Environment, Forest and Climate Change (MoEFCC) hosted the second BRICS Environment Ministers meeting at Goa on 15 – 16 September 2016.

The Environment Ministers / representatives of the BRICS nations, accompanied by their senior officials participated in a two-day long event held in Goa to discuss the global climate change and other environmental issues. During the meeting, the Ministers agreed to enhance cooperation in the areas of abatement and control of air and water pollution, efficient management of liquid and solid waste, climate change and conservation of bio-diversity.

BRICS Nations Join Hands to Save Environment:

The BRICS Environment Ministers adopted a Goa Statement on Environment during the BRICS Environment Meeting and called upon the developed countries to honour their commitments related to means of implementation and facilitate its operationalisation with a clear road-map for the successful achievement of various global environmental agreements and sustainable development goals.
Key Findings of Recent Glacial Studies in the Indian Himalayas

The studies undertaken from mid 1970s till date have revealed the following interesting findings related to the glaciers in the Indian Himalayas:

- All the glaciers under observation, during the last three decades of 20th century have shown cumulative negative mass balance.

- Degeneration of the glacier mass has been the highest in Jammu & Kashmir, relatively lower in Himachal Pradesh, even lower in Uttarakhand and the lowest in Sikkim thus clearly showing a declining trend from north-west to north-east.

- Irrespective of latitudinal differences, glacier melt contributes to about 25% to 30% of the total discharge of glacier ice. Maximum discharge takes place from mid-July to mid-August.

- On an average, the sediment load producing capacity of glacier ice in the Himalayas has been found to be to the order of 30 tonnes of ice per day per square km² during the melt season in a granite / gneissic terrain.

- Ice, forming a glacier in the Himalayas, in its vertical profile, can exhibit the characteristics of a cold glacier at certain levels and that of a temperate glacier at other levels.

- Smaller glaciers in the Himalayas - less than 5km long - exhibit an ice thickness of the order of 250m in the cirque region, and an ice thickness of the order of 40-60m along the middle regions, though some larger glaciers like Zemu exhibit an ice thickness of over 200m in the middle regions.

- An aerosol/dust cover has the maximum effect as far as melting of glaciers is concerned. This impact is maximum on north facing glaciers in the month of September. Additional thickness of dust does not make any appreciable change in melting. In fact thickness of dust beyond 6mm serves more as an insulator rather than a conductor of solar heat.

- Himalayan glaciers, although shrinking in volume and constantly showing a retreating front, have not in any way exhibited, especially in recent years, an abnormal annual retreat, of the order that some glaciers in Alaska and Greenland are reported.

- Glaciers in the Himalayas, over a period of the last 100 years, behave in contrasting ways. As an example, Sonapani glacier has retreated by about 500m during the last one hundred years. On the other hand, Kangriz glacier has practically not retreated even an inch in the same period. Siachen glacier is believed to have shown an advance of about 700m between 1862 and 1909, followed by an equally rapid retreat of around 400m between 1929 and 1958, and hardly any retreat during the last 50 years. Gangotri glacier, which had hitherto been showing a rather rapid retreat, along its glacier front, at an average of around 20m per year till up to 2000 AD, has since slowed down considerably, and between September 2007 and June 2009 is practically at a standstill. The same is true of the Bhagirathkharak and Zemu glaciers.

- It is premature to make a statement that glaciers in the Himalayas are retreating abnormally because of the global warming. A glacier is affected by a range of
physical features and a complex interplay of climatic factors. It is therefore unlikely that the snout movement of any glacier can be claimed to be a result of periodic climate variation until many centuries of observations become available. While glacier movements are primarily due to climate and snowfall, snout movements appear to be peculiar to each particular glacier.