

2018

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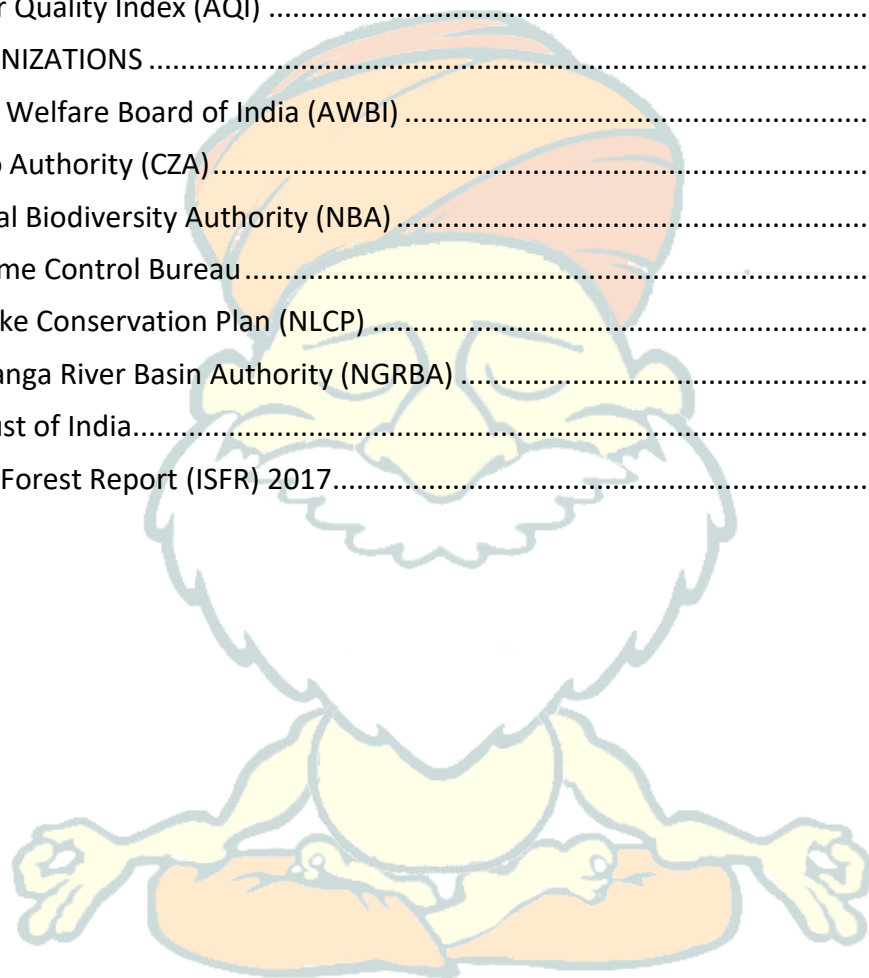
## [SET 7: ENVIRONMENT-PART 1]

Integrated Learning Programme 2018 is a step towards 'Enabling a person located at the most remote destination a chance at cracking AIR 1 in UPSC/IAS'

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## ACTS AND PROGRAMS

### Constitutional Provisions related to Environment

According to 42nd amendment –

- **Article-48-A** of the constitution provides - "The state shall endeavor to protect, and improve the environment and to safeguard forest and wildlife of the country."
- **Article 51-A** (g) provides – "It shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures,"
- Thus our constitution includes environmental protection and conservation as one of our fundamental duties.

### Wildlife Protection Act, 1972

- This act has been adopted by all the states except that of Jammu and Kashmir which has a similar law enacted for the purpose of wildlife protection. The operation of the Act is mandatory in the Union Territories too.
- It provides the basic framework to ensure the protection and management of wildlife.
- It was amended in 1982, 1986, 1991 and 1993 to accommodate provision for its effective implementation.

### Salient features of Act

- It has 7 chapters, 66 sections and 6 schedules.
- After various amendments it provides various tools to prevent damage to wildlife.
- Schedules I to V is in accordance with the risk of survival of the wildlife (fauna) enlisted in them.
- Animals included in schedule are provided for total protection from hunting and the trade and commerce related to such animals are strictly regulated.
- Schedule VI was added by amendment to Wildlife (protection) Act, 1991 to include plant species.
- An expert committee, constituted by the Indian Board of Wildlife considers amendments to the Act, as and when necessary.

- With the amendment of the Act in 1991, powers of the State Governments have been withdrawn almost totally. Now the State Governments are not empowered to declare any wild animal a vermin. "vermin" means any wild animal specified in Schedule V.
- Out of the six schedules, Schedule I and part II of Schedule II provide absolute protection and offences under these are prescribed the highest penalties.
- The penalties for Schedule III and Schedule IV are less and these animals are protected.
- Schedule V includes the animals which may be hunted. These are Common crow, Fruit bats, Mice & Rats only.
- Schedule VI contains the plants, which are prohibited from cultivation and planting.
- Declaration of Sanctuary, National Park and Game Reserves come under this act.

### Environment (Protection) Act, 1986

Environment Protection Act, 1986 is an Act of the Parliament of India. In the wake of the Bhopal Tragedy, the Government of India enacted the Environment Protection Act of 1986 under Article 253 of the Constitution.

- Compared to previous laws on environment protection, this Act is a more effective and bold measure to fight the problem of pollution.
- The genesis of Act is in Article 48A (Directive Principles of State Policy) and Article 51A (g) (Fundamental Duties) of the Indian Constitution.
- It has 26 Sections and it has been divided into 4 chapters relating to
  - Preliminary
  - General Powers of the Central Government
  - Prevention, Control, and Abatement of Environmental Pollution
  - Miscellaneous.
- The Act consists of and deals with more stringent penal provisions.
- The Act empowers the Central Government to take all appropriate measures to –
  - Prevent and control pollution
  - Establish effective machinery for the purpose of protecting
  - Improving the quality of the environment
  - Protecting, controlling and abating environmental pollution.
- The Central Government or any other person duly authorized is empowered to collect the samples of air, water, soil or other substances as evidence of the offences under the Environment (Protection) Act, 1986.
- It prescribes a special procedure for handling hazardous substances.

- If a Government Department offend this act, the Act holds the Head of the Department as guilty of the offence unless the head of the Department proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.
- It empowers and authorizes the Central Government to issue directions for the operation or process, prohibition, closure, or regulation of any industry. For this purpose government is also authorized to stop, regulate the supply of electricity or water or any other service directly without obtaining the order of the Court in this regard.
- It grants immunity to the officers of the Government for any act done under the provisions of this.
- The Central Government is also empowered to enter and inspect anyplace through any person or through any agency authorized by Central Government.
- The Act debars the Civil Courts from having any jurisdiction to entertain any suit or proceeding in respect of an action, direction, order issued by Central Government or other statutory authority under this Act.
- This act will be superior over anything inconsistent contained in any enactment other than this Act.

### **National Forest Policy 1988**

- Aim - to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which is vital for sustenance of all life forms, human, animal and plant.

#### **Objectives**

1. Maintenance of environmental stability through preservation and, where necessary, restoration of the ecological balance that has been adversely disturbed by serious depletion of the forests of the country.
2. Conserving the natural heritage of the country by preserving the remaining natural forests which are habitat to diverse flora and fauna.
3. Checking desertification
4. Increasing the forest/tree cover in the country through massive afforestation and social forestry programs.
5. Meeting the requirements of fuel-wood, fodder, minor forest produce and small timber of the rural and tribal populations.
6. Increasing the productivity of forests to meet essential national needs.
7. To minimize pressure on existing forests.

#### **Major achievements of National Forest Policy**

- Point 4 and 5 of above objectives.
- Involvement of local communities in the protection, conservation and management of forests through Joint Forest Management Programme.
- Conservation of Biological Diversity and Genetic Resources of the country through ex-situ and in-situ conservation measures.
- Significant contribution in maintenance of environment and ecological stability in the country.

### Biological Diversity Act, 2002

- It was born out of India's attempt to realize the objectives enshrined in the UN **Convention on Biological Diversity (CBD) 1992**.
- CBD recognizes the sovereign rights of states to use their own Biological Resources.
- The Act provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources.

#### Objectives

- Conservation of biological diversity;
- Sustainable use of its components; and
- Fair and equitable sharing of the benefits arising from the utilization of genetic resources. (i.e. no greed)
- The Act envisages a three-tier structure to regulate access to the biological resources, comprising of -
  - National Biodiversity Authority (NBA)
  - State Biodiversity Boards (SBB)
  - Biodiversity Management Committees (BMC) - local level

### The Scheduled Tribes and other Traditional Forest Dweller (Recognition of Forest Rights) Act, 2006

- It provides for the restitution of deprived forest rights across India, including both individual rights to cultivated land in forestland and community rights over common property resources.
- It integrates conservation and livelihood rights of the people.

#### FRA is a potential tool

- To empower and strengthen the local self-governance



- To address the livelihood security of the people
- To address the issues of Conservation and management of the Natural Resources and conservation governance of India.

### The Act recognizes and secures

- Individual rights + community Rights
- Right to protect, regenerate or conserve or manage any community forest resource which the communities have been traditionally protecting and conserving for sustainable use.
- Right to intellectual property and traditional knowledge related to biodiversity and cultural diversity
- Rights of displaced communities & Rights over developmental activities

### Salient features

- **Nodal Agency for implementation** – MoTA (Ministry of Tribal Affairs).
- **This Act is applicable for** - Tribal and Other Traditional Forest Dwelling Communities.
- It recognizes traditional forest dwellers rights provided they have for at least three generations prior to 13.12.2005 primarily resided in and have depended on the forest or forest land for bonafide livelihood needs.
- **"generation"** = period of 25 years.
- Maximum limit of the recognizing rights on forest land – 4 ha.
- **Recognition of rights in** - National Parks, Sanctuaries, Reserve Forest, Protected Forests.
- The Act recognizes the right of ownership access to collect, use, and dispose of minor forest produce which has been traditionally collected within or outside village boundaries.
- **Term "minor forest produce"** = non-timber forest produce of plant origin (including bamboo, brush wood, stumps, cane, tussar, cocoons, honey, wax, lac, tendu or kendu leaves, medicinal plants and herbs, roots, tubers and the like)
- The rights conferred under the Act shall be **heritable but not alienable or transferable** and shall be registered jointly in the name of both the spouses in the case of married persons and in the name of the single head, in the case of a household headed by a single person and in the absence of a direct heir, the heritable right shall pass on to the next of kin.
- Till the recognition and verification procedure is completed, no member of a forest dwelling Scheduled Tribe or other traditional forest dwellers shall be **evicted or removed** from forest land under his occupation.

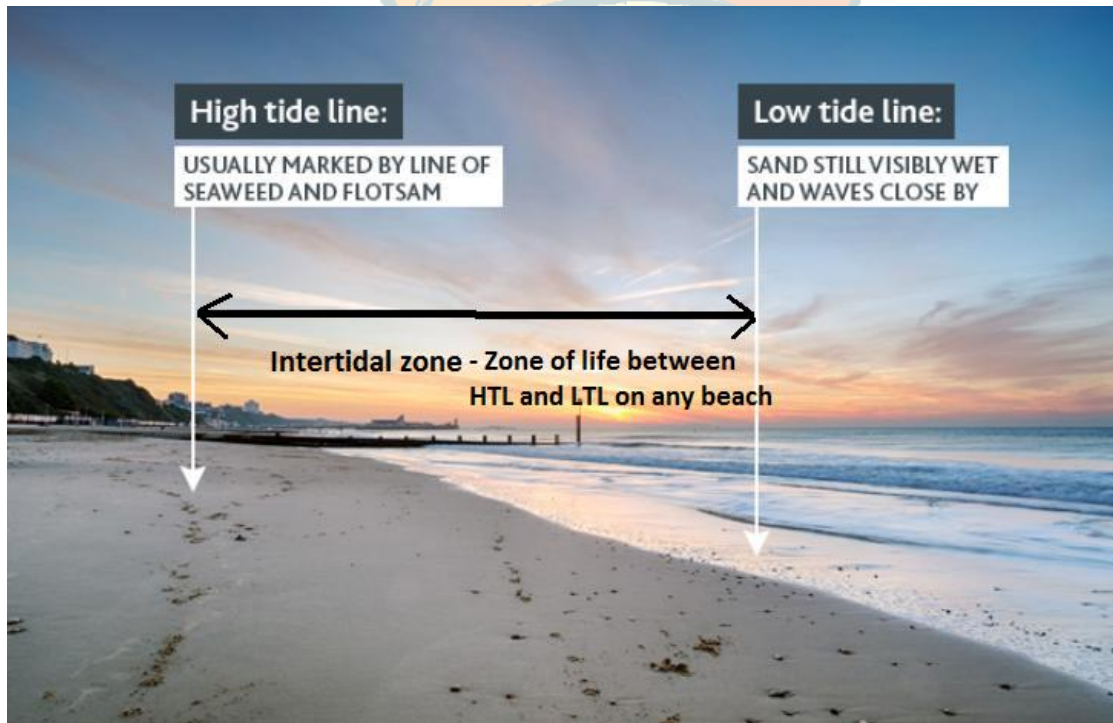


- **Gram sabha** will be the **competent authority** for initiating the process of determining the nature and extent of individual or community forest rights or both that may be given to the forest dwelling Scheduled Tribes and other traditional forest dwellers.

### Coastal Regulation Zone (CRZ)

- The coastal stretches of seas, bays, estuaries, creeks, rivers and back waters which are influenced by tidal action up to 500 meters from the **High Tide Line (HTL)** and the land between the **Low Tide Line (LTL)** and the HTL are declared "Coastal Regulation Zone" (CRZ)

**High Tide Line** means the line on the land up to which the highest water line reaches during the spring tide.



**Aim** - protecting coastal stretches in India.

- National Coastal Zone Management Authority (NCZMA) and State Coastal Zone Management Authority (SCZMA) are for enforcement and monitoring of the CRZ Notification.

### Classification Criteria and Regulatory Norms

The coastal regulation zone has been classified for the purpose of regulation of the permitted activities.

**Category I (CRZ-I) -**

- Areas that are ecologically sensitive and important, such as national parks/marine parks, sanctuaries, reserve forests etc.
- Area between Low Tide Line and the high Tide Line.

**Category-II (CRZ-II) –**

- Areas that have already been developed upto or close to the shoreline.
- **“developed area”** - area within the municipal limits or in other legally designated urban areas which is already substantially built up and which has been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains.

**Category-III (CRZ-III):**

- Areas that are relatively **undisturbed** and those which do **not belong to either Category-I or II**.
- These will include coastal zone in the rural areas (developed and undeveloped) and also areas within Municipal limits or in other legally designated urban areas which are not substantially built up.

**Category-IV (CRZ-IV):**

- Coastal stretches in the Andaman & Nicobar, Lakshadweep and small islands, except those designated as CRZ-I, CRZ-II or CRZ-III

**Norms for Regulation of Activities**

#### CRZ-I

- No new construction shall be permitted in CRZ- I except
- Projects relating to Department of Atomic Energy
- Pipelines, conveying systems including transmission lines
- Facilities that are essential for activities permissible under CRZ-I.

#### CRZ-II

- Buildings shall be permitted **only on the landward side of the existing road (or roads approved in the Coastal Zone Management Plan of the area) or on the landward side of existing authorised structures**
- Reconstruction of the authorised buildings to be permitted subject to the existing FSI/FAR norms and without change in the existing use.
- The design and construction of buildings shall be consistent with the surrounding landscape and local architectural style

#### CRZ-III

- Undisturbed areas + those which do not belong to either CRZ-I or CRZ-II which includes mainly the rural area and those not built up within designated urban areas.
- The area up to 200 meters from HTL is earmarked as "No Development Zone".
- No construction permission except for repairs to the existing authorized.
- Development of vacant plots between 200 and 500 meters of HTL is permitted in CRZ III for the purpose of construction of dwelling units and hotels/beach resorts subject to certain conditions.

#### CRZ-IV

- No new construction of buildings shall be permitted within 200 metres of the HTL.
- Corals from the beaches and coastal waters shall not be used for construction and other purposes.
- Sand may be used from the beaches and coastal waters, only for construction purpose upto the 30th day of September 2002 and thereafter it shall not be used for construction and other purposes.
- Dredging and underwater blasting in and around coral formations shall not be permitted

### Wetlands (Conservation And Management) Rules 2010

- **Purpose** - To ensure that there is no further degradation of wetlands.
- The rules specify activities which are harmful to wetlands like industrialization, construction, dumping of untreated waste and reclamation and prohibit these activities in, the wetlands.

- **Other activities** – like harvesting and dredging may be carried out only with prior permission from the concerned authorities.
- The rules have classified the wetlands for **better management and easier identification**.
- **Central Wetland Regulatory Authority** – It had been set up to ensure proper implementation of the Rules and perform all functions for management of wetlands in India.
- Authority shall have a number of expert members apart from govt. representatives to ensure that wetland conservation is carried out in the best possible manner.
- The Rules are a positive step towards conservation of wetlands in India. This will go a long way in protecting our wetlands which are under severe threat.

## National Green Tribunal (NGT)



- Preamble of act – NGT is established for the 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.
- India had become one of the distinguished league of countries that have a dedicated adjudicatory forum to address environmental disputes.

- This court can rightly be called '**special**' because India is the **third country** following Australia and New Zealand to have such a system.
- The specialized architecture of NGT will facilitate **fast track resolution of environmental cases** and provide a boost to the implementation of many sustainable development measures.
- This is the first body of its kind that is required by its parent statute to apply the "**polluter pays**" principle and the **principle of sustainable development**.
- Members - The tribunal shall consist of a **full time chairperson**, judicial members and expert members. The **minimum number** of judicial and expert member prescribed is **ten** in each category and **maximum number is twenty** in each category.
- A judge of the Supreme Court of India or Chief Justice of High Court are eligible to be Chairperson or judicial member of the Tribunal.
- Even existing or retired judge of High Court is qualified to be appointed as a Judicial Member.
- NGT is mandated to dispose the cases within six months of their respective appeals.
- Speedy environmental justice by NGT will help to reduce the burden of litigation in the higher courts.
- 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 four place of sitting of the Tribunal.

#### The Ozone Depleting Substances Rules

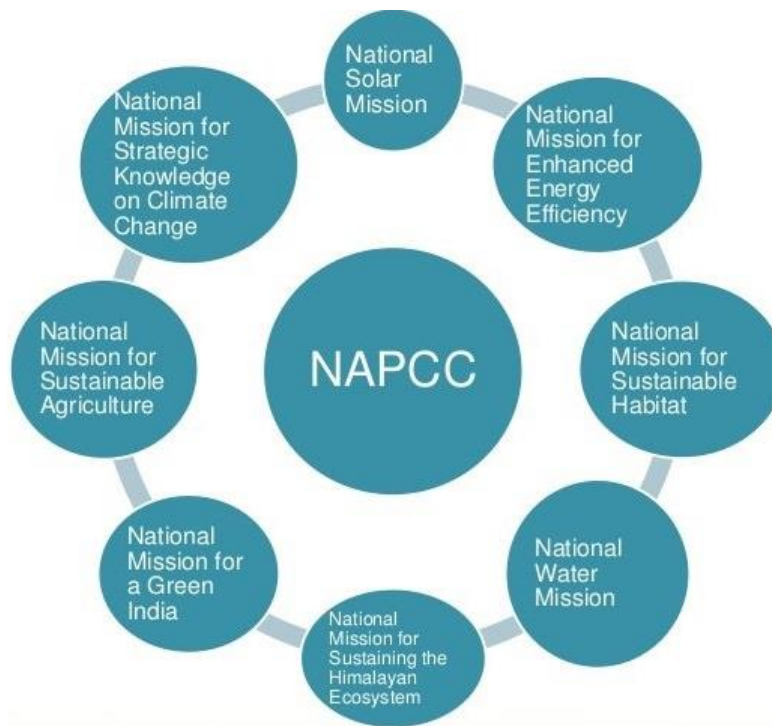
- They set the deadlines for phasing out of various ODSs, besides regulating production, trade import and export of ODSs and the product containing ODS.
- Amendments were done in 2001, 2003, 2004 and 2005 to facilitate implementation of ODS phase-out at enterprises in various sectors.
- These Rules prohibit the use of CFCs in manufacturing various products beyond 1st January 2003 except in metered dose inhaler and for other medical purposes.
- Use of halons is prohibited after 1st January 2001 except for essential use.
- Carbon tetrachloride and methylchloroform are other ODSs.
- Use of methyl bromide has been allowed up to 1st January 2015. Since HCFCs are used as interim substitute to replace CFC, these are allowed up to 1st January 2040.

#### India's National Action Plan on Climate Change

- The National Action Plan hinges on the development and use of new technologies.



- The implementation of the Plan includes public private partnerships and civil society action.
- The focus will be on promoting **understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation.**
- There are Eight National Missions which form the core of the National Action Plan.



1. National Solar Mission
2. National Mission On Sustainable Habitat
3. National Water Mission (NWM)
4. National Mission For Sustaining The Himalayan Ecosystem (NMSHE)
5. National Mission For A Green India
6. National Mission For Sustainable Agriculture (NMSA)
7. National Mission on Strategic Knowledge for Climate Change (NMSKCC)
8. National Bio-Energy Mission

### **National Solar Mission**

The National Solar Mission is a major initiative to promote ecologically sustainable growth while addressing India's energy security challenge.

The Mission has 3-phase approach:

1. Spanning the remaining period of the 11th Plan and first year of the 12th Plan (up to 2012-13) as Phase 1,
2. The 12th Plan (2013-17) as Phase 2 and
3. The 13th Plan (2017-22) as Phase 3.

## **Objectives**

- To establish India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country as quickly as possible.
- To create an enabling policy framework for the deployment of 100,000 MW of solar power by 2022.
- To create favorable conditions for solar manufacturing capability, particularly solar thermal for indigenous production and market leadership.

## **National Mission for Enhanced Energy Efficiency (NMEEE)**

- NMEEE seeks to strengthen the market for energy efficiency by creating conducive regulatory and policy regime.
- NMEEE has been envisaged to foster innovative and sustainable business models to the energy efficiency sector.
- The NMEEE seeks to create and sustain markets for energy efficiency in the entire country which will benefit the country and the consumers".

## **National Mission on Sustainable Habitat**

- "National Mission on Sustainable Habitat" seeks to promote sustainability of habitats through improvements in energy efficiency in buildings, urban planning, improved management of solid and liquid waste, modal shift towards public transport and conservation through appropriate changes in legal and regulatory framework.
- It also seeks to improve ability of habitats to adapt to climate change by improving resilience of infrastructure, community based disaster management and measures for improving advance warning systems for extreme weather events.

## **National Water Mission (NWM) Mission**

- Ensuring integrated water resource management for conservation of water, minimization of wastage and equitable distribution both across and within states.



- Developing a framework for optimum water use through increase in water use efficiency by 20% through regulatory mechanisms with differential entitlements and pricing, taking the National Water Policy (NWP) into consideration.
- Ensuring that a considerable share of water needs of urban areas is met through recycling of waste water.
- Meeting water requirements of coastal cities through the adoption of new and appropriate technologies such as low-temperature desalination technologies allowing use of ocean water.
- Revisiting NWP to ensure basin-level management strategies to deal with variability in rainfall and river flows due to climate change.
- Developing new regulatory structures to optimize efficiency of existing irrigation systems.

### **National Mission for Sustaining the Himalayan Ecosystem (NMSHE)**

#### **Primary objectives**

- Develop a sustainable National capacity to continuously assess the health status of the Himalayan Ecosystem
- Assist States in the Indian Himalayan Region with their implementation of actions selected for sustainable development.

### **National Mission for a Green India**

#### **Mission Objectives**

- Increased forest/tree cover on 5 million hectares (ha) of forest/non-forest lands and improved quality of forest cover on another 5 million ha of non-forest/forest lands (a total of 10 million ha)
- Improved ecosystem services including biodiversity, hydrological services, and carbon sequestration from the 10 million ha of forest/ non-forest lands mentioned above
- Increased forest-based livelihood income of about 3 million households, living in and around the forests
- Enhanced annual CO<sub>2</sub> sequestration by 50 to 60 million tons in the year 2020.

### **National Mission on Seabuckthorn**

- Seabuckthorn plant is popularly known as **Leh berries**.

- The MoEF and DRDO have launched a major national initiative for seabuckthorn cultivation in the **high-altitude, cold desert ecosystems**.
- The initiative is one of many conservation measures for fragile high-altitude ecosystems.
- Seabuckthorn, also called the “Wonder plant” and “Ladakh gold”.

### Uses

- It has multi-purpose **medicinal** and **nutritional properties**, and also helps in **soil conservation and nitrogen fixation**.
- Hardy, drought-resistant and tolerant to extreme temperatures from – 43° C to + 40° C, the plant has an extensive root system which can fix atmospheric nitrogen, making it ideal for controlling soil erosion and preventing desertification.
- The initiative is a part of Sub-Mission on Cold Desert Ecosystems under the Green India Mission — which is a part of the National Action Plan on Climate Change.

### National Mission for Sustainable Agriculture (NMSA)

The NMSA has identified key dimensions for

- Adaptation and mitigation:
- Improved Crop Seeds, Livestock and Fish Culture
- Water Efficiency
- Pest Management
- Improved Farm Practices
- Nutrient Management
- Agricultural Insurance
- Credit Support
- Markets
- Access to Information
- Livelihood Diversification

### The National Mission on Strategic Knowledge for Climate Change (NMSKCC)

#### Mission Objectives

- Formation of knowledge networks among the existing knowledge institutions engaged in research and development relating to climate science.

- Establishment of global technology watch groups with institutional capacities to carry out research on risk minimized technology selection for developmental choices
- Development of national capacity for modeling the regional impact of climate change on different ecological zones within the country for different seasons and living standards
- Establishing research networks and encouraging research in the areas of climate change impacts on important socio-economic sectors like agriculture, health, natural ecosystems, biodiversity, coastal zones, etc.

### **National Bio-Energy Mission**

- The government is preparing a national bio-energy mission to boost power generation from biomass, a renewable energy source abundantly available in India.
- The national mission will aim at improving energy efficiency in traditional biomass consuming industries, seek to develop a bio-energy city project and provide logistics support to biomass processing units.
- It will also propose a GIS-based National Biomass Resource Atlas to map potential biomass regions in the country.
- According to estimates, biomass from agro and agro-industrial residue can potentially generate 25,000 MW of power in India.

### **Indian Network on Climate Change Assessment**

- Launched by MoEF in an effort to promote domestic research on climate change.
- Reports prepared by the INCCA will form a part of India's National Communication (Nat Com) to the United Nations Framework Convention on Climate Change (UNFCCC).

### **National Communication (NATCOM)**

- In pursuance of the implementation of the provisions of UNFCCC, India's Initial National Communication (NATCOM) has been initiated in 2002 funded by the Global Environment Facility.

### **The Water (Prevention and Control of Pollution) Act of 1974 and Amendment, 1988**

The main objective of this act is to provide prevention and control of water pollution.

Some important provisions of this Act are given below:

- The Act vests regulatory authority in **State Pollution Control Boards** to establish and enforce effluent standards for factories.
- A **Central Pollution Control Board** performs the same functions for Union Territories and formulates policies and **coordinates** activities of different State Boards.
- The Act grants power to SPCB and CPCB to test equipment and to take the sample for the purpose of analysis.
- Prior to its amendment in 1988, enforcement under the Act was achieved through criminal prosecutions initiated by the Boards.
- The 1988 amendment act empowered SPCB and CPCB to close a defaulting industrial plant.

#### The Water (Prevention and Control of Pollution) Cess Act of 1977

- The Water Cess Act was passed to generate financial resources to meet expenses of the Central and State Pollution Boards.
- The Act creates **economic incentives** for pollution control and requires local authorities and certain designated industries to pay a cess (tax) for water effluent discharge.
- The **Central Government**, after deducting the expenses of collection, pays the central board and the states such sums, as it seems necessary.
- To encourage capital investment in pollution control, the Act gives a polluter a 70% rebate of the applicable cess upon installing effluent treatment equipment.

#### The Air (Prevention and Control of Pollution) Act of 1981 and amendment, 1987

- To implement the decisions taken at the **United Nations Conference on the Human Environment** held at Stockholm in June 1972, Parliament enacted the nationwide Air Act.
- The main objectives of this Act are to improve the quality of air and to prevent, control and abate air pollution in the country.

#### Important provisions of this Act are given below:

- The Air Act's framework is **similar** to that of the Water Act of 1974.
- The Air Act expanded the authority of the central and state boards established under the Water Act, to include air pollution control.
- States not having water pollution boards were required to set up air pollution boards.
- Under the Air Act, all industries operating within designated air pollution control areas must obtain "consent" (**permit**) from the **State Boards**.

- The states are required to prescribe emission standards for industry and automobiles after consulting the central board and noting its ambient air quality standards.
- The Act grants power to SPCB and to test equipment and to take the sample for the purpose of analysis from any chimney, fly ash or dust or any other.
- Prior to its amendment in 1988, enforcement under the Act was achieved through criminal prosecutions initiated by the Boards.
- The 1988 amendment act empowered SPCB and CPCB to close a defaulting industrial plant.
- Notably, the 1987 amendment introduced a citizen's suit provision into the Air Act and extended the Act to include **noise pollution**.

### Genetic Engineering Approval Committee (GEAC)

1. **Biosafety concerns** have led to the development of regulatory regime in India.
2. The **MoEFCC** has notified the Rules for Manufacture, Use/Import/ Export & Storage Of Hazardous Micro Organisms/Genetically Engineered Organisms or Cells, 1989 ['Rules 1989']
3. Aim of 'Rules 1989' is to protect environment, nature and health in connection with application of gene technology and micro-organisms.
4. These rules cover areas of research as well as large scale applications of GMOs and their products including experimental field trials and seed production.
5. The Rules 1989 also define the competent authorities and composition of such authorities for handling of various aspects of the Rules.

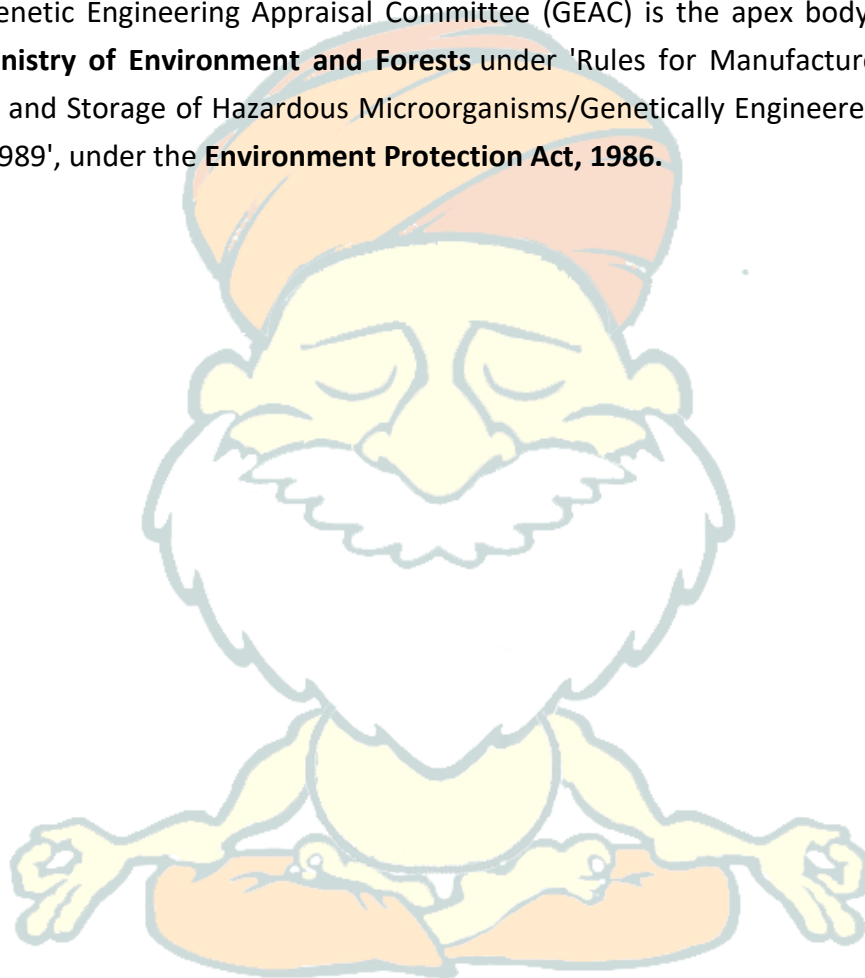
### Presently there are six committees

1. **Recombinant DNA Advisory Committee (RDAC)**: The functions are of an advisory nature. It recommends safety regulations for India in recombinant research, use and applications.
2. **Review Committee on Genetic Manipulation (RCGM)** established under the Department of Biotechnology, **ministry of Science** and technology is to monitor the safety related aspects in respect of on-going research projects.
3. **Genetic Engineering Appraisal Committee (GEAC)**
4. **State Biotechnology Coordination Committee (SBCC's)** has a major role in monitoring. It also has powers to inspect, investigate and take punitive action in case of violations of statutory provisions.

5. **District Level Committees (DLCs)** have a major role in monitoring the safety regulations in installations engaged in the use of genetically modified organisms/hazardous microorganisms and its applications in the environment.
6. **Institutional Biosafety Committee (IBSC)** is established under the institution engaged in GMO research to oversee such research and to interface with the RCGM in regulating it.

#### **Genetic Engineering Appraisal Committee (GEAC)**

- The Genetic Engineering Appraisal Committee (GEAC) is the apex body constituted in the **Ministry of Environment and Forests** under 'Rules for Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells 1989', under the **Environment Protection Act, 1986**.



## INSTITUTIONS AND MEASURES

### National Wildlife Action Plan (NWAP)

- **1<sup>st</sup> NWAP** – 1983.
- **2<sup>nd</sup> NWAP** – 2002
- **3<sup>rd</sup> NWAP (drafted)** - 2016
- **Who adopted it** – Indian Board for Wildlife
- **What it does** – it has strategies and plan for wildlife conservation.
- **Need** – mainly to conserve the biodiversity which was declining because of increased commercial use of natural resources, continued growth of human and livestock population.

#### Features of Draft

- For period – 2017-2031
- Focus – 17 key areas (from integration of climate change into wildlife planning, conservation of coastal and marine ecosystems to wildlife health).
- **Wildlife conservation**
  - Rehabilitation of threatened species
  - Conserving their habitats like inland aquatic, coastal and marine ecosystems.
- **Protection of protected areas**
  - It includes ban on certain activities, regulation on tourism and law enforcement.
- **Ban on certain activities**
  - Mining, irrigation projects to be not permitted in protected areas and wildlife corridors.
- **Tourism**
  - Encourages tourism in wildlife areas with restriction on no. of tourists and vehicles to be allowed in protected areas.
  - Strict monitoring and regulation of tourism activities.
- **Law enforcement**
  - Setup new – regional forensic laboratories, special tiger protection force and special courts to fight from wildlife crimes like poaching and smuggling.



**Protected Areas of India (as on January, 2018) <sup>NEW</sup>**

	No.	Total Area (km <sup>2</sup> )	Coverage % of Country
<b>National Parks (NPs)</b>	103	40500.13	1.23
<b>Wildlife Sanctuaries (WLSs)</b>	544	118931.80	3.62
<b>Conservation Reserves (CRs)</b>	76	2567.95	0.08
<b>Community Reserves</b>	46	72.61	0.002
<b>Protected Areas (PAs)</b>	<b>769</b>	<b>162072.49</b>	<b>4.93</b>

**Protected Areas of India from 2000 to 2018 (as on January, 2018) <sup>NEW</sup>**

Year	No. of National Parks	Area Under National Parks	No. of Wild Life Sanctuaries	Area Under Wild Life Sanctuaries	No. of Community Reserves	Area Under Community Reserves	No. of Conservation Reserves	Area Under Conservation Reserves	No. of Protected Areas	Total Area under Protected Areas
2000	89	37593.94	489	117881.68	-	-	-	-	578	155475.63
2006	96	38183.01	506	120244.39	-	-	4	42.87	606	158470.27
2007	98	38219.72	510	120543.95	4	20.69	7	94.82	619	158879.19
2008	99	39232.58	513	122138.33	4	20.69	45	1259.84	661	162651.45
2009	99	39232.58	513	122138.33	4	20.69	45	1259.84	661	162651.45
2010	102	40074.46	516	122585.56	4	20.69	47	1382.28	669	164062.99
2011	102	40074.46	517	122615.94	4	20.69	52	1801.29	675	164512.37
2012	102	40074.46	524	123548.33	4	20.69	56	1998.15	686	165641.62
2013	102	40074.46	526	124234.52	4	20.69	57	2017.94	689	166347.6
2014	103	40332.89	525	116254.36	4	20.69	60	2037.11	692	158645.05
2015	103	40500.13	531	117607.72	26	46.93	66	2344.53	726	160499.31
2016	103	40500.13	537	118005.30	26	46.93	67	2349.38	733	160901.74
2017	103	40500.13	543	118917.71	45	59.66	73	2547.19	764	162024.69
2018	103	40500.13	544	118931.80	46	72.61	76	2567.95	769	162072.49

*Source: National Wildlife Database Cell, Wildlife Institute of India*

*Note: All areas are in km<sup>2</sup>*

## Strategy for action

Strengthening and Improving the Protected Area Network

Landscape Level Approach for Wildlife Conservation

Rehabilitation of Threatened Species

Conservation of Inland Aquatic Ecosystems

Conservation of Coastal and Marine Ecosystems

Integrating Climate Change in Wildlife Planning

Control of Poaching and Illegal Trade in Wildlife

Wildlife Health

Mitigation of Human-Wildlife Conflicts

Management of Tourism in Wildlife Areas

Conservation Awareness and Outreach

Development of Human Resources

Strengthening Research and Monitoring

Improving compliances with Domestic Legislations and International Conventions

Ensuring Sustained Funding for Wildlife Sector

Integrating National Wildlife Action Plan with other Sectoral Programmes

## Criticism

### 1. Neglect of Wildlife living outside the forests

- Wolves, great Indian bustards, hyenas, leopards, tigers, elephants which live outside the forests are ignored.

### 2. Regulation of technology

- Ethical and social consequences of using drones and camera traps. (violates the privacy of local people living in protected areas is ignored)

### 3. Issue of feral dogs and cats

- 1<sup>st</sup> national policy which acknowledges the damages caused by the feral dogs and cats in the wildlife habitats but remained silent on suggestive measures which need to be taken to address the issue.

### 4. Invasion of exotic species

- Inventory and mapping of species and area causes delay implementation of national policy to check invasion of exotic species.

## 5. Duration of plan

- 14 years' period is very long and it must be kept shorter to absorb the contemporary realities and scientific advances.

### National Afforestation and Eco-Development Board (NAEB)



- By – MoEF (Ministry of Environment and Forests) in August 1992.
- It is responsible for **promoting afforestation, tree planting, ecological restoration and eco-development activities** in the country, with special attention to the degraded forest areas and lands adjoining the forest areas, national parks, sanctuaries and other protected areas as well as the ecologically fragile areas like the Western Himalayas, Aravallis, Western Ghats, etc.

### National Afforestation Programme (NAfP)

- It involves plantation in degraded forests of country.
- Flagship scheme of NAEB.
- Launched in – 2002.
- It provides physical and capacity building support to the Forest Development Agencies (FDAs).

### Compensatory Afforestation Fund Management and Planning Authority (CAMPA)



### Background

- In 2000, SC had found that the funds under CAMPA are not utilized by states and so the funds are centrally pooled under Compensatory Afforestation Fund.

- SC had set up the National Compensatory Afforestation Fund Management and Planning Authority (**National CAMPA**) to manage the Fund.
- In 2009, State CAMPAs were setup by states that receive 10% of funds from National CAMPA to use for afforestation and forest conservation.
- In 2013, CAG report – funds continued to be underutilized.
- The **Compensatory Afforestation Fund Bill 2015** was introduced by the government in Lok Sabha in 2015 to regulate collected funds. The bill was sent for examination under a standing committee while Rajya Sabha has passed it on 28 July 2016.

### **Compensatory Afforestation Fund Rules, 2018**

The Environment Ministry has notified the draft rules of the Compensatory Afforestation Act, to facilitate utilization of over Rs 50,000 crore among states to expand India's forest cover.

The draft rules, which come nearly one and half years after the Compensatory Afforestation Fund (CAF) Bill was passed by Parliament in July 2016, specify the activities that would be allowed or restricted in a forest area.

As per estimates, about Rs 50,000 crore has been collected in lieu of forest land diverted under the Forest (Conservation) Act, 1980, for non-forest purposes such as industrial projects like mining.

### **Compensatory Afforestation Fund Act**

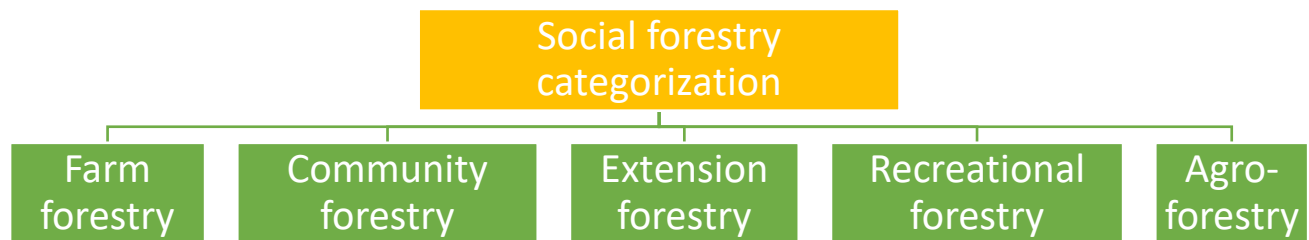
According to the CAF Act, the fund will be used for "compensatory afforestation, additional compensatory afforestation, penal compensatory afforestation, net present value, catchment area treatment plan or any money for compliance of conditions stipulated by the Central Government while according approval under the provisions of the Forest (Conservation) Act, 1980.

### Joint Forest Management (JFM)

- It is the regeneration and conservation of forests through involvement of village communities in association with the state forest departments.
- It develops partnership between forest and fringe communities of mutual trust.
- It also defines the roles and responsibilities with regard to forest protection and regeneration.
- Financial support to JFM activities – it came from other sources in different states such as World Food Programme (WFP), Hariyali Yojana, District Rural Development Agency (DRDA), Tribal Development Schemes, externally aided projects, etc.
- It started in consonance with the National Forest Policy 1988, which has recognized the importance of involving the local communities.
- Most of states have adopted the JFM.
- Both forest departments and local communities form committee to manage and protect the forest by sharing the cost and benefits.
- To form committee, the initiative is taken by forest departments.
- NGOs are also involved for **capacity building, information dissemination, monitoring and evaluation** in these participatory institutions.
- Key objective - rehabilitation of degraded forestlands with people's participation involving Forest Protection Committees.
- It's a win-win situation for both forest department and local community in terms of greater access to minor forest produces from these regenerated forests.

### Social Forestry

- This term was 1<sup>st</sup> used by National commission on Agriculture in 1976.
- Aim – taking off pressure from forests and making use of all unused and fallow land (by raising plantations so as to meet the growing demand for SFs, thereby reducing the pressure on the traditional forest area)
- Government forest areas that are close to human settlement and have been degraded over the years due to human activities needed to be afforested.
- Trees were to be planted in and around agricultural fields, railway lines and roadsides, and river and canal banks.



### Farm forestry

- Both commercial and non commercial farm forestry is promoted.
- Individual farmers are being encouraged to plant trees on their own farmland to meet 5Fs.
- Not all farmers need 5Fs from trees. They can plant trees for providing shade for the agricultural crops, as wind shelters, soil conservation or to use wasteland.

### Community forestry

- Raising trees on community land.
- Aim - to provide for the entire community and not for any individual.
- Here government takes responsibility of providing seedlings, fertilizer but the responsibility of protecting the trees is taken by communities.

### Extension forestry

- It is increasing the boundaries of forests i.e. planting of trees on the sides of roads, canals and railways, along with planting on wastelands.

### Recreational forestry

- Raising of trees with the major objective of recreation alone.

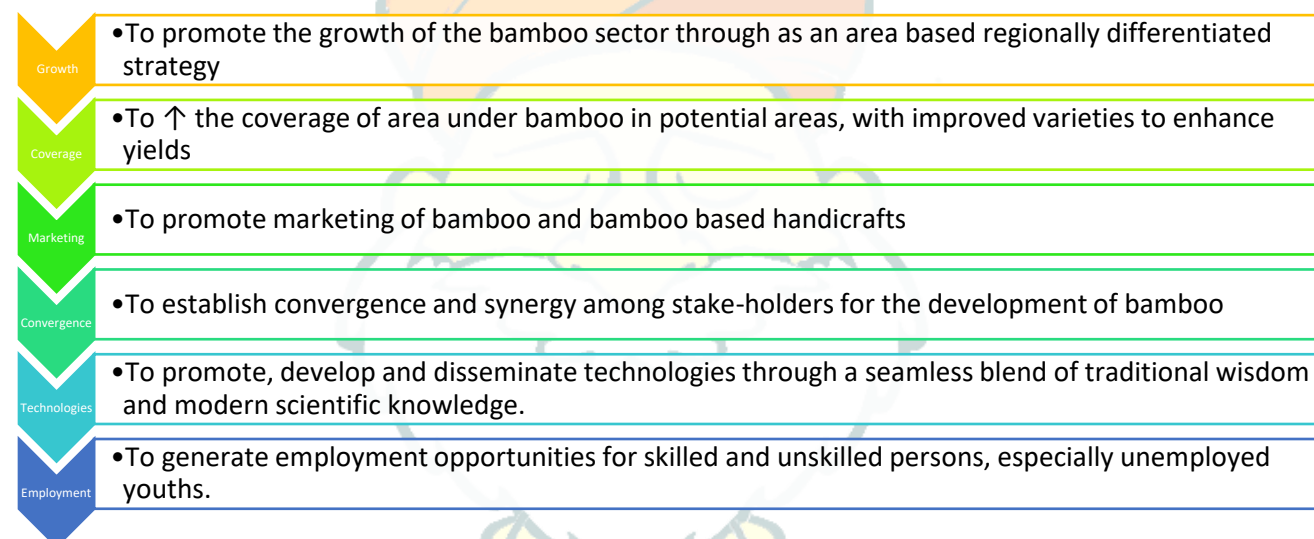
### Agro- forestry

- Planting of trees on and around agricultural boundaries, and on marginal, private lands, in combination with agricultural crops is known as agro-forestry.



- Implemented by - Department of Agriculture & Cooperation (DAC), Ministry of Agriculture.
- To harness the potential of bamboo crop.
- It is the sub scheme of 100% Centrally Sponsored Scheme called Mission for Integrated Development of Horticulture (MIDH).

## Objectives



## Mission Strategy

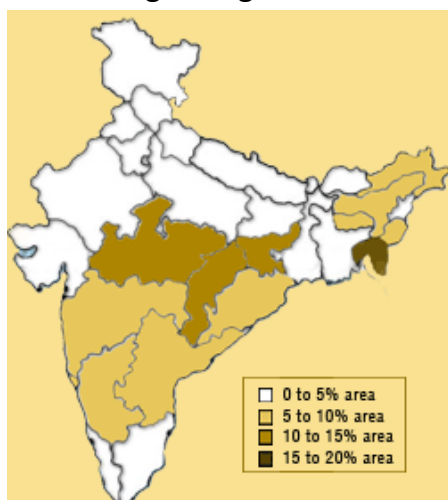
To achieve the objectives, the Mission would adopt the following strategies:

➤	Adopt a <b>coordinated approach</b> covering production and marketing to assure appropriate returns to growers/producers.
➤	Promote <b>Research and Development (R&amp;D)</b> of varieties and technologies for enhanced production.
➤	<b>Enhance acreage</b> (in forest and non-forest areas) and productivity of bamboo through varietal change and improved agriculture practice.
➤	<b>Promote partnership, convergence and synergy</b> among R&D and marketing agencies in public as well as private sectors, at all levels.



➤	Promote where appropriate, cooperatives and self-help groups to ensure support and <b>adequate returns to farmers.</b>
➤	To generate <b>employment opportunities</b> for skilled and unskilled persons, especially unemployed youths.
➤	Set up <b>National, State and sub-State level structures</b> , to ensure adequate returns for the produce of the farmers and eliminate middlemen, to the extent possible.

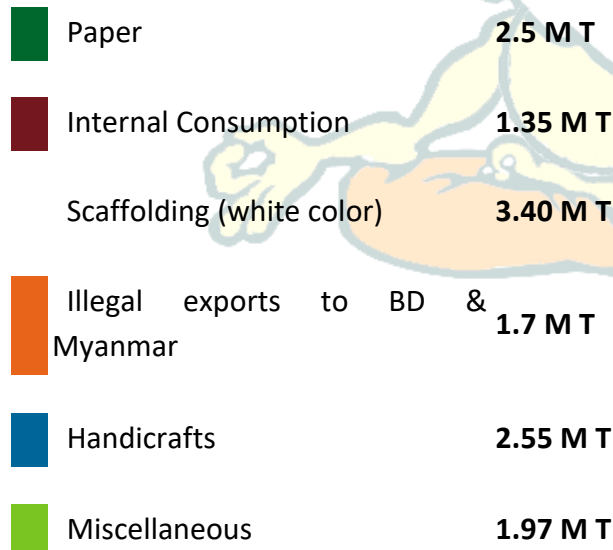
### Bamboo growing areas in India



- 28% of area and 66% of growing stock of bamboo in NE region.
- 20% of area and 12% of growing stock in MP & Chhattisgarh.

S No.	State/region	Area %	Growing stock %
1	North East	28.0	66
2	Madhya Pradesh	20.3	12
3	Maharashtra	9.9	5
4	Orissa	8.7	7
5	Andhra Pradesh	7.4	2
6	Karnataka	5.5	3
7	Others	20.2	5

### Current Usage of Bamboo



## The Market for Bamboo



- Decorative and shuttering plywood, various board products such as block board, wafer board, strip board, laminated boards, roofing sheets
- Earthquake-resistant and long-lasting conventional housing and buildings. Two-floored rural houses.
- Improved roads, bridges, culverts, retaining walls
- Water-tanks, biogas plants, telephone/electricity poles
- Furniture; fuel-wood, charcoal and briquettes, active carbon
- Matchsticks, agarbattis, toothpicks, skewer sticks, etc
- Schooling: pencils, rulers, blackboards
- Pulp and paper, particle board, MDF, handicrafts
- Prevent landslides, soil and riverbank erosion
- Bamboo shoots as food.

## Comprehensive Environmental Pollution Index (CEPI)



- Developed by – CPCB (Central Pollution Control Board)
- It is a rational number to characterize the environmental quality at a given location following the algorithm of source; pathway and receptor have been developed.
- It captures the various dimensions of environment including air, water and land.
- CPCB uses CEPI nationwide for environmental assessment of Industrial Clusters and formulate remedial Action Plans for the identified critically polluted areas.
- It acts as an early warning tool. It can help in categorizing the industrial clusters in terms of priority of planning needs for interventions.
- After receiving the proposals from state governments and concerned stake holders the CPCB revised concept of CEPI by eliminating the subjective factors but retaining the factors which can be measured precisely.

### Classification of Industrial clusters

CEPI score	Status	Measures
>70	Critically polluted	Detailed investigations and appropriate remedial action
60-70	Severely polluted	Surveillance and implementation of pollution control
<60	Normal	

- Effective implementation of remedial action plan → help in pollution abatement + restore environment quality
- Polluted industrial clusters/areas shall be further explored so that extent of ecological damages can be identified.

## Lighting a Billion Lives (LaBL)



Lighting A Billion **Lives**

Convention 2016

Support Now

Partner with Us



ABOUT

PARTNERS

STORIES

GALLERY

RESOURCES

- By – TERI (The Energy and Resources Institute)
- It is a global initiative to facilitate clean energy access and the delivery of last mile energy services for basic and productive use.
- The initiative enables energy poor communities to transition from traditional and inefficient energy sources to modern, more efficient and sustainable energy solutions.

Vision - To enable a billion lives the access to clean, affordable and reliable energy solutions

Mission - To create sustainable energy provisioning value chains and last mile delivery networks supported by technological innovations, capacity building, awareness and collaborative partnerships



## Objectives



To replace inefficient and harmful lighting and cooking methods with efficient, affordable and reliable clean energy alternatives



To enable the productive use of clean energy for enhanced education, better health and improved livelihood opportunities – thereby empowering the poor to escape the poverty trap



To facilitate access and adoption of demand responsive solutions at the last mile through capacity building and enterprise development

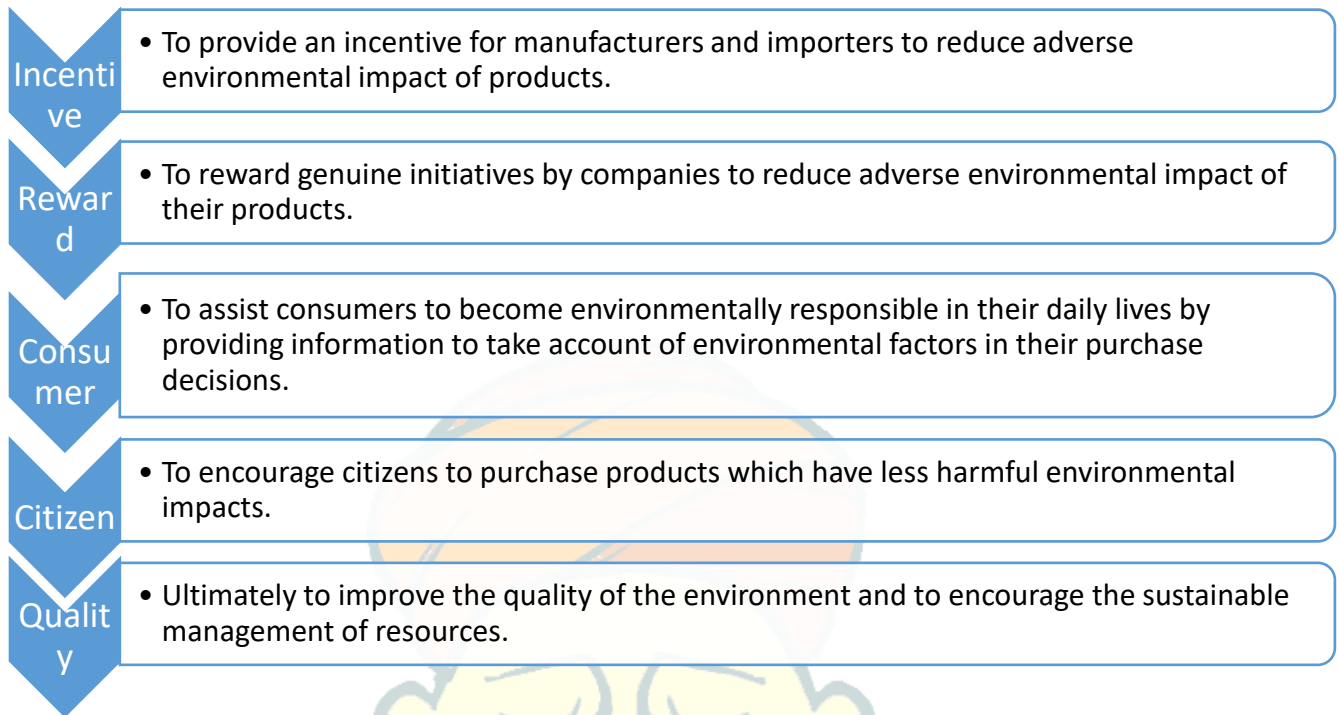
## Ecomark



*Figure logo*

- It is a scheme on labeling of Environment Friendly Products.
- It operates on a national basis and provides accreditation and labeling for household and other consumer products which meet certain environmental criteria along with quality requirements of the Indian Standards for that product.
- The Label shall be known as the "ECOMARK".

## Objectives

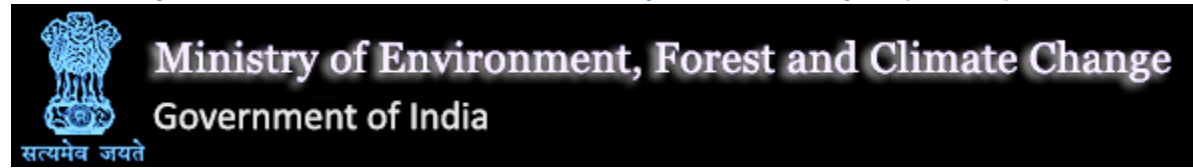


## Urban Services Environmental Rating System (USERS)

- **Project funded by** - UNDP
- **Executed by** – MoEF (Ministry of Environment and Forests)
- **Implemented by** – TERI
- **Aim** - to develop an analytical tool to measure the performance, with respect to delivery of basic services in local bodies of Delhi and Kanpur. (Identified as pilot cities).
- **Performance measurement (PM) tool** was developed through a set of performance measurement indicators that are benchmarked against set targets using the inputs-outputs efficiency outcomes framework.



## Biodiversity Conservation & Rural Livelihood Improvement Project (BCRLIP)



- Aim - conserving Biodiversity in selected landscapes (including wildlife protected areas/critical conservation areas) while improving rural livelihoods through participatory approaches.
- As we have read in JFM (Joint forest management), JFM and eco-development are models of new approaches to provide benefits to both conservation and local communities.
- This project wants to extend itself to other global significant sites in the country so that it can create linkages between conservation and local communities living near biodiversity rich areas.
- Will be implemented as – CSS (Centrally Sponsored Scheme)
- Financiers - IDA loan, GEF grant, contributions from GoI, State governments and beneficiaries

## National Clean Energy Fund

- This fund created for funding research and innovative projects in clean energy technologies of public sector or private sector entities.
- It is non-lapsable fund under Public Accounts.
- Creation of NCEF was announced in the Union Budget 2010-11.

## Why is it introduced or need of this fund?

- Alarming levels of pollution in the country.
- On the 'principle of Polluter pays'.
- Aim - to fund the entrepreneurial ventures and research towards the clean energy development.

## Source of finance

- Clean energy cess on coal produced or imported in India has been introduced. It is Rs.200 per tonne of coal.

## Fund usage

- Inter-ministerial group (IMG) will approve the projects/schemes eligible for the fund.
- Eligible project/scheme – those who adopt to clean energy technology and research & development. (solar, wind, tidal, geothermal, Silicon manufacturing, coal gasification,



coal bed methane, shale oil, hydrogen/fuel cells, hybrid vehicles, advanced computing, nuclear technology and NAPCC projects etc.)

#### Criticism of NCEF

- Fund is not able to achieve the objective behind the creation.
- Main reason is underutilization.
- Only 1/8<sup>th</sup> of the amount collected has been disbursed.
- It is also criticized on the manner of utilization and the administration of Fund.

#### National Electric Mobility Mission Plan 2020 (NEMMP)



### Department of Heavy Industry

Ministry of Heavy Industries & Public Enterprises, Government of India  
ISO:9001:2008 Certification; website quality Certificate by STQC

- Launched in 2013.
- **Objective** - to achieve national fuel security by promoting hybrid and electric vehicles in the country.
- Target - to achieve 6-7 million sales of hybrid and electric vehicles year on year from 2020 onwards. (govt. will provide fiscal and monetary incentives)
- It is expected to save 9500 Million Liters of crude oil equivalent to Rs. 62000 Cr. savings.
- Government has launched the scheme namely **Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME India)** under NEMMP 2020 in the Union Budget for 2015-16

#### Barriers

- Higher cost of Electric Vehicles
- Challenges in battery technology
- Consumer mindset
- Inadequate government support

## Environment Education, Awareness & Training (EEAT) Scheme



- EEAT is a flagship scheme of the MoEF for enhancing the understanding of people at all levels about the relationship between human beings and the environment and to develop capabilities/skills to improve and protect the environment.
- Launched in 1983-84 (during 6<sup>th</sup> FYP)
- Basic objective - to promote environmental awareness among all sections of the society and to mobilize people's participation for preservation and conservation of environment.



## Objectives

To promote environmental awareness among all sections of the society

To spread environment education, especially in the non-formal system among different sections of the society

To facilitate development of education/training materials and aids in the formal education sector

To promote environment education through existing educational/scientific/research institutions

To ensure training and manpower development for environment education, awareness and training

To encourage non-governmental organizations, mass media and other concerned organizations for promoting awareness about environmental issues among the people at all levels

To use different media including films, audio, visual and print,, theatre, drama, advertisements, hoarding, posters, seminars, workshops, competitions, meetings etc. for spreading messages concerning environment and awareness

To mobilize people's participation for preservation and conservation of environment.

## National Environment Awareness Campaign (NEAC)

- Launched in 1986.
- Objective - creating environmental awareness at the national level.
- It is a multi-media campaign which utilizes conventional and non-conventional methods of communication for disseminating environmental messages.
- It is conducted every year on specific themes selected by MoEF.
- Implemented through the designated Regional Resource Agencies (RRAs) for specific states/regions of the country.
- 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.

### NEAC 2016-17

**Focal theme: “Swachh Bharath Mission, Ganga Rejuvenation and River Cleaning”**



### Eco – clubs (National Green Corps)

- National Green Corps (NGC) is programme of the MoEF.
- Environmental activity in schools is promoted through the National Green Corps Eco-club.
- Each NGC School Eco Club has 30 to 50 NGC Students or NGC Cadets who form the National Green Corps.
- These NGC Students participate in activities related to Biodiversity Conservation, Water Conservation, Energy Conservation, Waste Management and Land Use Planning and Resource Management.



*Figure Digging Compost Pit by NGC Eco Club of a Govt. Middle School in Nagaland*

### Objectives

1. To make children understand environment and environmental problems.
2. To provide environmental education opportunities for school children.
3. To utilize the unique position of school children as conduits for awareness of the society at large.
4. To facilitate children's participation in decision making in areas related to environment and development.
5. To bring children in to direct contact with the environmental problems facing the society they live in and make them think of solutions.

6. To involve children in action based programmes related to environment in their surrounding

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



- GLOBE Program is an international science and education program that provides students and the public worldwide with the opportunity to participate in data collection and the scientific process, and contribute meaningfully to our understanding of the Earth system and global environment.
- India joined this programme in 2009.

#### **Vision**

- A worldwide community of students, teachers, scientists, and citizens working together to better understand, sustain, and improve Earth's environment at local, regional, and global scales.

#### **Mission**

- To promote the teaching and learning of science, enhance environmental literacy and stewardship, and promote scientific discovery.
- This programme, which unites students, teachers and scientists all over the world, is aimed at school children.
- The students of GLOBE schools are required to collect data about various basic environmental parameters under the supervision of a GLOBE trained teacher and use it for explaining hypothesis as well as to enhance their scientific understanding of the earth.



*A vision for a healthier, more prosperous and secure future for all coastal communities*

DMS

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- It is a partner-led initiative to promote investment in coastal ecosystem conservation for sustainable development.
- Co-chaired by - IUCN and UNDP, MFF
- Vision - "To promote healthy coastal ecosystems through a partnership-based, people focused and policy relevant approach that builds and applies knowledge, empowers communities and other stakeholders, enhances governance, secures livelihoods, and increases resilience to natural hazards and climate change."
- It provides a platform for collaboration among the many different agencies, sectors and countries which are addressing challenges to coastal ecosystem and livelihood issues.
- Initial focus was on the countries that were worst affected by the tsunami - India, Indonesia, Maldives, Seychelles, Sri Lanka and Thailand.
- More recently it has expanded to include Bangladesh, Cambodia, Myanmar, Pakistan and Viet Nam.
- Member countries - India, Bangladesh, Cambodia, Indonesia, Maldives, Myanmar, Seychelles, Pakistan, Sri Lanka, Thailand, Vietnam.
- Outreach countries - Bangladesh, Cambodia, Myanmar, Timor-Leste.
- Dialogue countries - Kenya, Malaysia, Tanzania.
- Mangroves are the flagship of the initiative, but MFF is inclusive of all types of coastal ecosystem, such as coral reefs, estuaries, lagoons, sandy beaches, seagrasses and wetlands.



## National Air Quality Index (AQI)

### National Air Quality Index



Central Pollution Control Board,  
Ministry of Environment, Forests and Climate Change

- Launched by – MoEF in 2015.
- Initiative under ‘Swachh Bharat’.
- It helps the common man to judge the air quality within his vicinity.
- Index constituted as a part of Government’s mission to improve the culture of cleanliness.
- Central Pollution Control Board (CPCB) along with State Pollution Control Boards has been operating National Air Monitoring Program (NAMP).
- Developed by - IIT Kanpur.
- While the earlier measuring index was limited to 3 indicators, the current measurement index had been made quite comprehensive by the addition of 5 additional parameters.

### Need of AQI

- Quality of data from some cities remains weak and the standards set for pollutants fall short of WHO recommendations.
- The pollution related analysis using vast number of complex parameters is complicated for the common man to understand.

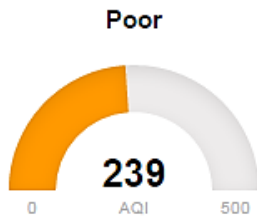
### Categories of air pollution under AQI

- There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe.

AQI	Remark	Color Code	Possible Health Impacts
0-50	Good		Minimal impact
51-100	Satisfactory		Minor breathing discomfort to sensitive people
101-200	Moderate		Breathing discomfort to the people with lungs, asthma and heart diseases
201-300	Poor		Breathing discomfort to most people on prolonged exposure
301-400	Very Poor		Respiratory illness on prolonged exposure
401-500	Severe		Affects healthy people and seriously impacts those with existing diseases

### Pollutants considered

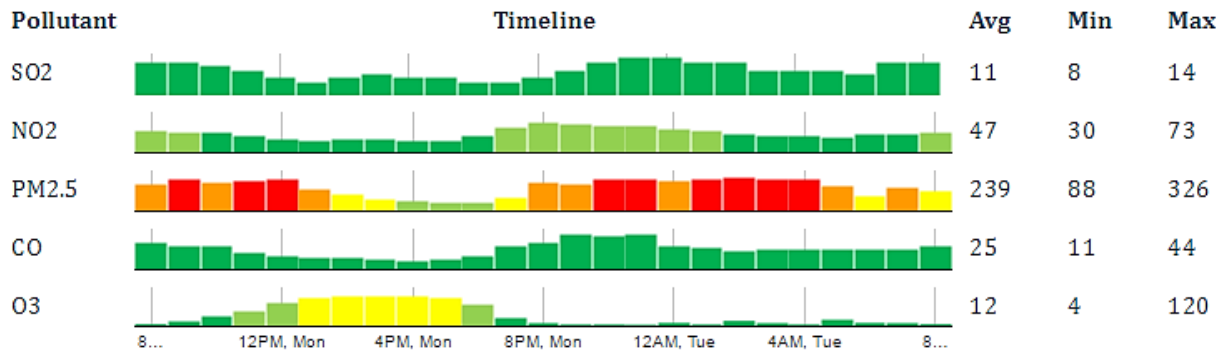
- The proposed AQI will consider 8 pollutants (PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, SO<sub>2</sub>, CO, O<sub>3</sub>, NH<sub>3</sub>, and Pb).



## NSIT Dwarka

Prominent Pollutant is **PM2.5**

On **Tuesday, 14 Feb 2017 08:00 AM**



## INDIAN ORGANIZATIONS

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



## Animal Welfare Board of India

- **Statutory advisory body** on Animal Welfare Laws.
- Promotes animal welfare in the country.
- Established in 1962 under Prevention of Cruelty to Animals Act, 1960 (to avoid any confusion between 1960 and 1962 in prelims please remember these years carefully)
- It prevents the infliction of unnecessary pain or suffering on animals.
- It was started under the stewardship of Late Smt. Rukmini Devi Arundale (well known humanitarian).
- Advising GoI on animal welfare laws.
- Promotes animal welfare in India.
- It is the first of its kind to be established by any government in world.

### Functions

- To keep the law in force in India for the Prevention of Cruelty to Animals under constant study
- To take all such steps as the Board may think fit –
  - For amelioration of animals by encouraging, or providing for the construction of sheds, water troughs and the like and by providing for veterinary assistance to animals.
  - To ensure that unwanted animals are destroyed by local authorities, whenever it is necessary to do so, either instantaneously or after being rendered insensible to pain or suffering.
- To co-operate with, and co-ordinate the work of associations or bodies established for the purpose of preventing unnecessary pain or suffering to animals or for the protection of animals and birds.

### Advisory

- To advise the government on the amendments to be undertaken in any such law from time to time.
- To advise the Central Government on the making of rules under the Act so that preventing unnecessary pain or suffering to animals (specially when they are being transported from one place to another or when they are used as performing animals or when they are kept in captivity or confinement)
- To advise the Government on any matter connected with –
  - Animal welfare or the Prevention of infliction of unnecessary pain or suffering on animals.
  - Medical care and attention which may be provided in animal hospitals, and to give financial and other assistance to animal hospitals whenever the Board think it is necessary to do so.
- To advise the Government or any local authority or other person –
  - On improvements in the design of vehicles so as to lessen the burden on draught animals.
  - In the design of slaughter houses or the maintenance of slaughter houses or in connection with slaughter of animals so that unnecessary pain or suffering, whether physical or mental, is eliminated in the pre- slaughter stages as far as possible, and animals are killed, wherever necessary, in as humane a manner as possible.

### Financial assistance

- To encourage by the grant of financial assistance or otherwise, the formation or establishment of Pinjarapoles, rescue homes, animals shelters, sanctuaries and the like, where animals and birds may find a shelter when they have become old and useless or when they need protection.
- To give financial assistance and other assistance to Animal Welfare Organisations functioning in any local area or to encourage the formation of Animal Welfare Organizations in any local area which shall work under the general supervision and guidance of the Board.

### Awareness

- To impart education in relation to the humane treatment of animals and to encourage the formation of public opinion against the infliction of unnecessary pain or suffering to animals and for the promotion of animal welfare by means of lectures books, posters, cinematographic exhibitions and the like.



## CENTRAL ZOO AUTHORITY

Statutory body under the Ministry of Environment, Forest and Climate Change  
(GOVERNMENT OF INDIA)



- **Statutory body**
- It is constituted under the **Wild Life (Protection) Act**.
- It regulates the functioning of the zoos but its role is more of a **facilitator** than a **regulator**.
- **Main objective** - To complement the national effort in conservation of wild life.
- Every zoo in the country is required to **obtain recognition** from the CZA for its operation. The Authority evaluates the zoos with reference to the parameters prescribed under the Rules and grants recognition accordingly.

### Vision

To complement and strengthen the national efforts in conservation of the biodiversity of the country, particularly the fauna through the ex-situ conservation linked with in-situ practices.

### Mission

To provide better upkeep and veterinary care to the wild animal housed in zoos in India to ensure their conservation through best practices of management and bringing education & awareness among the people.

### Functions

- To specify the minimum standards for housing, upkeep and veterinary care of the animals kept in a zoo.
- To evaluate and assess the functioning of zoos with respect to the standards or the norms as may be prescribed.
- To recognize or derecognize zoos.
- To identify endangered species of wild animals for purposes of captive breeding and assigning responsibility in this regard to a zoo.
- To co-ordinate the acquisition, exchange and loaning of animals for breeding purposes.
- To ensure maintenance of stud-books of endangered species of wild animals bred in captivity.
- To identify priorities and themes with regard to display of captive animals in a zoo;
- To co-ordinate training of zoo personnel in India and outside India.

- To co-ordinate research in captive breeding and educational programmes for the purposes of zoo.
- To provide technical and other assistance to zoos for their proper management and development on scientific lines.

#### **Powers**

- Recognition of zoos.
- Permission for acquisition of wild / captive animals
- Cognizance of offences
- Grant of licenses, certificate of ownership, recognition, etc.

#### **The National Biodiversity Authority (NBA)**



- Established in 2003 to implement India's Biological Diversity Act (2002), after India signed Convention on Biological Diversity (CBD) in 1992.
- It is an autonomous statutory body.
- It performs facilitative, regulatory and advisory function for the GoI on issues of conservation, sustainable use of biological resources and fair and equitable sharing of benefits arising out of the use of biological resources.



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## Objectives

Anybody seeking any kind of intellectual property rights (IPR) on a research based upon biological resource or knowledge obtained from India has to obtain prior approval of the NBA

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The NBA will impose benefit-sharing conditions.

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It ensures equitable sharing of benefits arising from the use of biological resources and associated knowledge.

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Ensures protection to the knowledge of local people relating to biodiversity through measures such as registration of such knowledge.

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Advises State Governments in identifying the areas of biodiversity importance (biodiversity hotspots) as heritage sites.

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## Functions

- The NBA may-
  - Advise the Central Government on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of benefits arising out of the utilization of biological resources.
  - Advise the State Governments in the selection of areas of biodiversity importance to be notified as heritage sites and measures for the management of such heritage sites.
  - Perform such other functions as may be necessary to carry out the provisions of this Act.
- On behalf of govt. NBA can take any measures necessary to oppose the grant of IPR in any country outside India on any biological resource obtained from India or knowledge associated with such biological resource which is derived from India.

## Transfer of Biological Resource to Knowledge

- Without NBA's permission, no person shall transfer any biological resource or knowledge associated to others.
- The NBA grants approval for transfer, after making enquiries subject to certain terms and conditions including the imposition of charges by way of royalty or for reasons to be recorded in writing, reject the application.
- NBA gives public notice of approval granted.

### **The State Biodiversity Boards (SBBs)**

- They advise State Governments on –
  - Conservation of biodiversity
  - Sustainable use of its components
  - Equitable sharing of the benefits arising out of the utilization of biological resources
- Permits requests for commercial utilization or bio-survey and bio-utilization of any biological resource by Indians.

### **The local level Biodiversity Management Committees (BMCs)**

- Responsible for –
  - Promoting conservation
  - Sustainable use and documentation of biological diversity (including preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals and microorganisms)
  - Chronicling of knowledge relating to biological diversity.

### **Wildlife Crime Control Bureau**

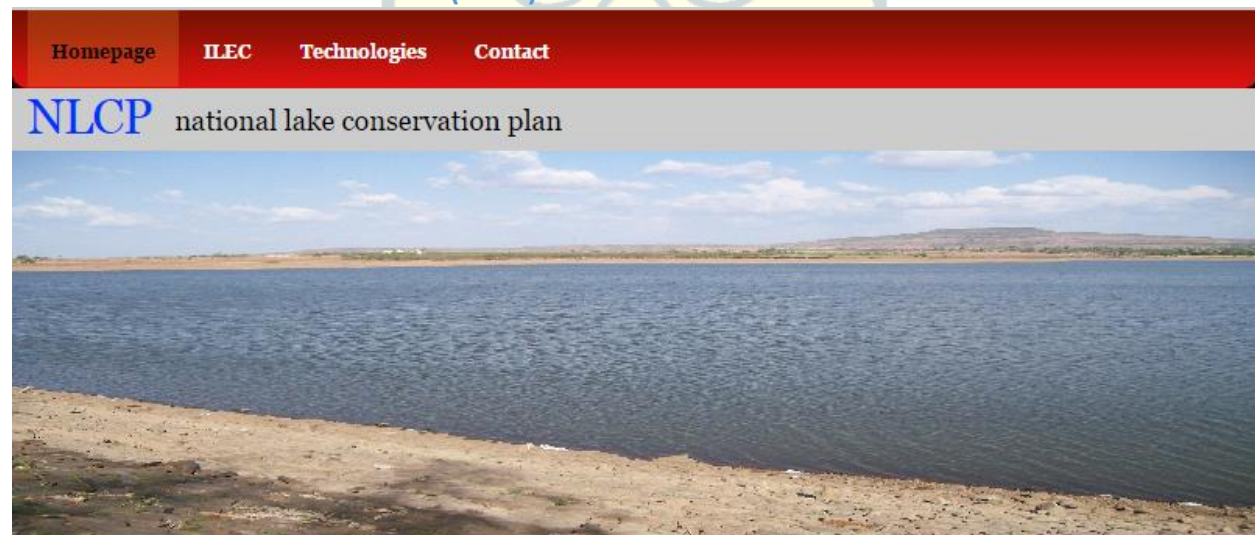
- Statutory body under Wildlife (Protection) Act, 1972.
- It would complement the efforts of the state governments by enforcing Wildlife (Protection) Act, 1972.
- Comes under MoEF.

### **Functions**

- Collection, collation of intelligence.
- Dissemination and establishment of a centralized Wildlife Crime data bank.
- Implementation of the provisions of Wildlife (Protection) Act, 1972 by co-coordinating actions of various enforcement authorities.
- To facilitate co-ordination and universal action for wildlife crime control, assistance to concerned authorities in foreign countries and concerned international organizations.
- Development of infrastructure and capacity building for scientific and professional investigation
- Advice the GoI on issues relating to wildlife crimes.

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#### National Lake Conservation Plan (NLCP)



- It comes under MoEF.
- It is for conservation and management of polluted and degraded lakes in urban and semi-urban areas.

## Objective

To restore and conserve the urban and semi-urban lakes of the country degraded due to waste water discharge into the lake and other unique freshwater ecosystems, through an integrated ecosystem approach.

## Activities Covered Under NLCP

- Prevention of pollution from point sources by intercepting, diverting and treating the pollution loads entering the lake.
- The interception and diversion works may include sewerage & sewage treatment for the entire lake catchment area.
- In situ measures of lake cleaning such as de-silting, de-weeding, bioremediation, aeration, bio-manipulation, nutrient reduction can be used.
- Catchment area treatment.
- Strengthening of bund, lake fencing, shoreline development etc.
- Lake front eco-development including public interface.
- Solid waste management & provision of dhobi ghats is not covered under NLCP.
- Prevention of pollution from non-point sources by providing low cost sanitation.
- Public awareness and public participation.
- Capacity building, training and research in the area of Lake Conservation.
- Any other activity depending upon location specific requirements.

In 2013, (NLCP) and National Wetlands Conservation Programme (NWCP) were merged into a new scheme called the 'National Plan for Conservation of Aquatic Eco-systems' (NPCA).

### Reason for convergence

- To avoid overlap, promote better synergies and to ensure conservation and management works.

### About NPCA

It is an integrated scheme with the objective of conserving aquatic ecosystems (lakes and wetlands), through implementation of sustainable conservation plans and governed with application of uniform policy and guidelines.

## Objective of NPCA

Holistic conservation and restoration of lakes and wetlands for achieving desired water quality enhancement, besides improvement in biodiversity and the ecosystem, through an integrated and multidisciplinary approach with a common regulatory framework.

### National Ganga River Basin Authority (NGRBA)



- Constituted in 2009 under Environment (Protection) Act, 1986.
- Planning, financing, monitoring and coordinating body of the center and the states.
- It has both regulatory and developmental functions.
- It will take measures for effective abatement of pollution and conservation of the river Ganga in keeping with sustainable development needs.
- It had started the Mission Clean Ganga with a changed and comprehensive approach to champion the challenges posed to Ganga through four different sectors, namely, of wastewater management, solid waste management, industrial pollution and river front development.
- MoWR RD & GR) - nodal Ministry for the NGRBA.
- The authority is chaired by the Prime Minister and has as its members the Union Ministers concerned, the Chief Ministers of the States through which Ganga flows, viz., Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal, among others.
- This initiative is expected to rejuvenate the collective efforts of the Centre and the States for cleaning the river.

### Objective

To to ensure effective abatement of pollution and conservation of the river Ganga by adopting a river basin approach for comprehensive planning and management

### Power and functions

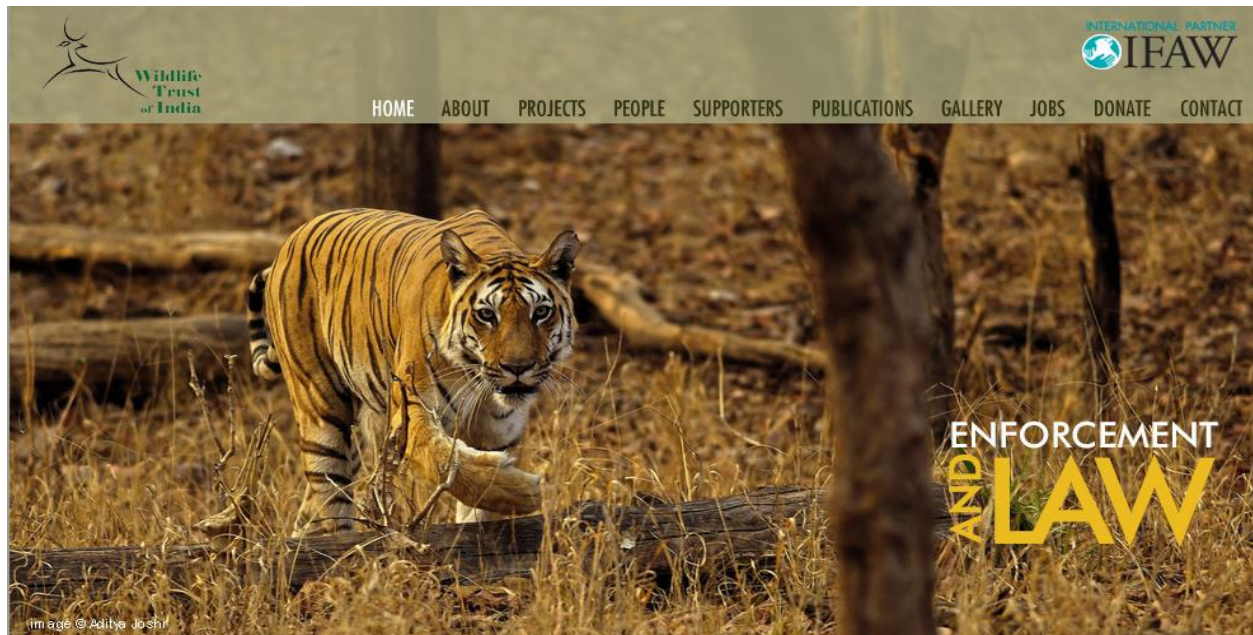
➤	Development of river basin management plan
➤	Regulation of activities to prevent control and abatement of pollution so that water quality can be maintained.
➤	Maintenance of minimum ecological flows in the river Ganga
➤	Taking necessary measures (including augmentation of sewerage infrastructure, catchment area treatment, protection of flood plains, creating public awareness) for planning, financing and execution of programs for abatement of pollution
➤	Collection, analysis and dissemination of information relating to environmental pollution in the river Ganga
➤	Investigations and research regarding problems of environmental pollution and conservation of the river Ganga;
➤	Promotion of water conservation practices including recycling and reuse, rain water harvesting, and decentralized sewage treatment systems
➤	Monitoring and review of programmes or activities implementation taken up for prevention, control and abatement of pollution in the river Ganga
➤	Issue directions for the purpose of exercising and performing these functions and for achievement of its objectives.

### National Mission for Clean Ganga

- It is the implementation wing of NGRBA.
- It is a registered society originally formed by MoEFCC under the Societies Registration Act, 1860.
- At national level NMCG is the coordinating body and is being supported by States Level Program Management Groups (SPMGs) of UP, Uttarakhand, Bihar and West Bengal which, are also registered as societies under Societies Registration Act, 1860 and a dedicated Nodal Cell in Jharkhand.
- Area of operation of NMCG - Ganga River Basin, including the states through which Ganga flows, as well as the National Capital Territory of Delhi.
- The area of operation may be extended, varied or altered in future, by the Governing Council to such other states through which major tributaries of the river Ganga flow, and as the National Ganga River Basin Authority (NGRBA) may decide for the purpose of effective abatement of pollution and conservation of the river Ganga.



## Wildlife Trust of India



- It is a NGO for nature conservation and committed to the service of nature.
- Mission - to conserve wildlife and its habitat and to work for the welfare of individual wild animals, in partnership with communities and governments.
- Vision - A secure natural heritage of India
- Mission - To conserve wildlife and its habitat and to work for the welfare of individual wild animals, in partnership with communities and governments.



## India State of Forest Report (ISFR) 2017

A **biannual report** by the Forest Survey of India shows a 0.94% (1%) increase in India's total forest cover since its last assessment in 2015.

The biannual report is prepared by The **Forest Survey of India (FSI)**, a body under MoEFCC, which conducts surveys and assessment of forest resources in the country.

Class	Area (sq kms)	% of geographical area	% of geographical area (SFR 2015)
Very dense forest	98,158	2.99	2.26
Moderately dense forest (all lands with tree cover- including mangrove cover -of canopy density between 40-70%)	3,08,318	9.38	9.59
Open forest (all lands with tree cover - including mangrove cover- of canopy density between 10% and 40%)	3,01,797	9.18	9.14
Total Forest Cover	7,08,	21.54	21.34

The only category that has registered a decline in the latest assessment is the Moderate Dense Forest.

### The forest cover has been classified according to the tree canopy density

- Very dense forest: All lands with tree canopy density of 70% and above.
- Moderately dense forest: All lands with canopy density of 40% and more and less than 70%.
- Open Forest: All lands with tree canopy density of 10% nad more but less than 40%.
- Scrub: Degraded forests land with canopy density less than 10%.
- Non forests: The land which is not included in any of the above classes.

**In terms of area**, Madhya Pradesh (77,414 sq km) has the largest forest cover followed by Arunachal Pradesh, Chhattisgarh, Orissa and Maharashtra.

**In terms of percentage of the total geographical area** Lakshadweep stands at the highest with 90.33%, followed by

- Mizoram (86.27%),
- Andaman & Nicobar Island (81.73%),
- Arunachal Pradesh (79.96%),

- Manipur (77.69%)
- Meghalaya (76.45%),
- Nagaland (75.33%)
- Tripura (73.68%).

**States which has shown a decrease in the forest cover** includes Mizoram (531 sq km), Nagaland (450 sq km) and Arunachal Pradesh (190 sq km), Tripura (164 sq km) and Meghalaya (116 sq km).

There are 15 states/UT having above 33% of the geographical area under forest cover.

**Mangrove cover:** According to current estimates, the mangrove cover in the country is 4921 sq km which is 0.15% of the total geographical area of the country. There has been an increase of 181 sq km as compared to earlier estimates.

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