



- ENVIRONMENT  
- Part 6

## REDD Reducing Emissions from Deforestation and Forest Degradation REDD+

- It is the global endeavor to create an incentive for developing countries to protect, better manage and save their forest resources, thus contributing to the global fight against climate change.
- REDD+ goes beyond merely checking deforestation and forest degradation, and includes incentives for positive elements of conservation, sustainable management of forests and enhancement of forest of forest carbon stocks
- REDD+ approach incorporates important benefits of livelihoods improvement, biodiversity conservation and food security services.

## REDD+

- Reducing emissions from deforestation and forest degradation and the role of conservation sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+) was first negotiated under the United Nations Framework Convention on Climate Change (UNFCCC) in 2005, with the objective of mitigating climate change through reducing net emissions of green house gases through enhanced forest management in developing countries.
- Most of the key REDD+ decisions have been completed.
- It is estimated that land use change, including deforestation and forest degradation accounts for 12-29% of global greenhouse gas emission.

## Climate Smart Agriculture

- Climate-smart agriculture (CSA) is an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate.
- CSA aims to tackle three main objectives:
  1. sustainably increasing agricultural productivity and income
  2. adapting and building resilience to climate change
  3. reducing and/or removing greenhouse gas emissions where possible.

## Climate-Smart Agriculture

- CSA is an approach for developing agricultural strategies to secure sustainable food security under climate change.
- CSA provides the means to help stakeholders from local to national and international levels identify agricultural strategies suitable to their local conditions.
- CSA is one of the 11 Corporate Areas for Resource Mobilization under the FAO's Strategic Objectives. It is in line with FAO's vision for Sustainable Food and Agriculture and supports FAO's goal to make agriculture, forestry and fisheries more productive and more sustainable".

## IPCC Intergovernmental Panel on Climate Change

- The Intergovernmental Panel on Climate Change (IPCC) is an intergovernmental body of the United Nations, dedicated to providing the world with an objective, scientific view of climate change, its natural, political and economic impacts and risks and possible response options.
- It was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) and later endorsed by the United Nations General Assembly.
- Membership is open to all members of the WMO and UN.
- The IPCC produces reports that contribute to the work of the United Nations Framework Convention on Climate Change

## IPCC Intergovernmental Panel on Climate Change

- The IPCC doesn't carry out original research, nor does it monitor climate or related phenomena itself.
- It assesses published literature including peer-reviewed and non-peer-reviewed sources.
- Peer review is the evaluation of work by one or more people with similar competences as the producers of the work.
- IPCC does stimulate the research in climate science
- IPCC reports contain a "Summary for Policymakers" which is subject to line-by-line approval by delegates from all participating governments. This involves the government of more than 120 countries.

## Organic Farming

- Organic farming is a agricultural production involving use of organic inputs.
- In organic farming synthetic fertilizers, pesticides, growth regulators etc. are not used
- Organic farming helps in maintaining the stability of natural ecosystem
- It uses fertilizers of organic origin such as compost manure, green manure and biological pest control
- In organic farming we recycle all wastes and manure within the farm
- Techniques such as crop rotation and companion planting, mixed cropping are used.



## Organic Farming

- Companion Planting in agriculture is the planting of different crops in proximity for different reasons like maximizing use of space, increase crop productivity, pest control, pollination etc.
- The different species of plant may thrive more when close together.
- Legumes such as clover provide nitrogen compounds to other plants such as grasses by fixing nitrogen from the air with symbiotic bacteria in their root nodules.
- Trap cropping uses alternative plants to attract pests away from a main crop. Ex. Nasturtium is a food plant of some caterpillars which feed primarily on members of the cabbage family.

## Organic Farming

- In organic farming naturally occurring pesticides such as pyrethrin and rotenone are permitted
- The pyrethrins are a class organic compounds normally derived from *Chrysanthemum cinerariifolium* that have potent insecticidal activity by targeting the nervous systems of insects.
- Pyrethrin naturally occurs in chrysanthemum flowers
- Rotenone is a broad-spectrum insecticide, piscicide and pesticide. It occurs naturally in the seeds and stems of several plants, such as the Jicama vine plant, and the roots of several members of Fabaceae.

## Acts and Policies

## Wild Life Protection Act 1972

- The Wildlife Protection Act, 1972 is an Act of the Parliament of India enacted for protection of plants and animal species.
- The Act established schedules of protected plant and animal species.
- The Act provides for the protection of wild animals, birds and plants.
- The Act extends to the whole of India, except the state of Jammu and Kashmir which has its own wildlife Act.
- Wildlife Act has six schedules.

## Environment (Protection) Act, 1986

- The GOI enacted the Environment Protection Act of 1986 under Article 253 of the Constitution.
- It came in to force on 19 November 1986.
- It has 5 Chapters and 26 sections
- The purpose of the Act is to implement the decisions of the United Nations Conference on the Human Environment
- They relate to the protection and improvement of the human environment and the prevention of hazards to human beings, other living creatures, plants and property.

## National Forest Policy 1988

- The National Forest Policy of 1988 was launched with the principal aim of ensuring environmental stability and maintenance of ecological balance, including atmospheric equilibrium which is essential for the sustenance of all life forms- plants, animal and human.
- OBJECTIVES
  1. Maintenance and restoration of the ecological balance
  2. Conservation of natural heritage
  3. Checking soil erosion and denudation of catchment areas of rivers, lakes
  4. Checking the extension of sand dunes
  5. Increase in Forest Cover
  6. Meeting the requirement of minor forest produce
  7. Increasing the productivity of Forests and efficient utilization of Forest Produce

## Biological Diversity Act, 2002

- The Biological Diversity Act, 2002 is an Act of the Parliament of India for preservation of biological diversity in India.
- It provides mechanism for equitable sharing of benefits arising out of the use of traditional biological resources and knowledge.
- The Act was enacted to meet the obligations under Convention on Biological Diversity (CBD). India is party to CBD.
- National Biodiversity Authority (NBA) is a statutory autonomous body, headquartered in Chennai, under the Ministry of Environment and Forests, GOI established in 2003 to implement the provisions under the Act.

## Biological Diversity Act, 2002

- Biodiversity has been defined under Section 2(b) of the Act as “ the variability among living organisms from all sources and the ecological complexes of which they are part, and includes diversity within species or between species and of eco-system.
- The Act also defines, Biological resources as ‘Plants animals and micro-organisms or parts thereof, their genetic material and by-products with actual or potential use or value but doesn’t include human genetic material



## The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

- The Act passed on 18 December 2006. It is also called as Forest Rights Act, Tribal Rights Act.
- The law concerns the rights of forest-dwelling communities to land and other resources.
- India's forests are home to hundreds of millions of people, including many scheduled Tribes, who live in or near the forest areas of the country.
- The total number is estimated to be 100 millions
- Forests provide sustenance in the form of minor forest produce, water, grazing grounds and habitat for shifting cultivation

## Green Highways (Plantation, Transplantation, Beautification & Maintenance) Policy-2015

- The Policy was launched in 2015 to promote greening of National Highway corridors across the country.
- Greening of highways to be achieved with participation of farmers, private sector and government institutions including Forest Department
- The way towards sustainable development
- The objective is to reduce the impact of air pollution and dust by planting trees and shrubs along the National Highways.
- The green cover will act as natural sink for air pollutants and arrest soil erosion at the embankment slopes.

## Coastal Regulation Zone, 2011

- Under the Environment Protection Act, 1986 of India, notification was issued in February 1991, for regulation of activities in the coastal area by the Ministry of Environment and Forests.
- As per the coastal land up to 500m from High Tide Line and a stage of 100m along banks of creeks estuaries, backwater and rivers and rivers subject to tidal fluctuations is called the Coastal Regulation Zone (CRZ)
- CRZ is placed in four categories
- The notification imposed restriction on the setting up and expansion of industries or processing plants etc. in the said CRZ.

## Coastal Regulation Zone, 2011

- CRZ-1: these are ecologically sensitive areas these are essential in maintaining the ecosystem of the coast. They lie between low and high tide line. Exploration of natural gas and extraction of salt are permitted
- CRZ-2: these areas form up to the shoreline of the coast. Unauthorised structures are not allowed to construct in this zone.
- CRZ-3: rural and urban localities which fall outside the 1 and 2. Only certain activities related to agriculture even some public facilities are allowed in this zone
- CRZ-4: this lies in the aquatic area up to territorial limits. Fishing and allied activities are permitted in this zone. Solid waste should be let off in this zone. This zone has been changed from 1991 notification, which covered coastal stretches in islands of Andaman & Nicobar and Lakshadweep

## Island Protection Zone Notification, 2011

- Ministry of Environment and Forests Announced Island Protection Zone in 2011.
- India has a long coastline of 7,500 km and two archipelagos. Coastal ecosystems provide protection from natural disasters such as floods and tsunamis to the 250 million people live in coastal areas. Coastal waters provide a source of primary livelihood to 7 million households. Indian marine system is a treasure trove of biodiversity, which is now being catalogued
- It has special provisions for Goa, Kerala, Greater Mumbai and critically vulnerable coastal areas (CVCAs) like Sunderban Mangrove Area, Chilka and Bhitarkanika (Orissa), Gulf of Khambat and Gulf of Kutch (Gujarat), Malwan (Maharashtra), Karwar and Kundapur (Karnataka), Vembanad (Kerala), Coringa, East Godavari and Krishna Delta (AP), Gulf of Mannar (Tamil Nadu).

## Island Protection Zone 2019

- The union environment ministry has notified island protection zone (IPZ) 2019 for Andaman and Nicobar recently. The legal changes in the IPZ are aligned with the Niti Aayog's proposal for holistic development in the Islands which is being taken forward under the guidance of the Island Development Agency.
- Key features of notified island protection zone (IPZ) 2019 for Andaman and Nicobar - allows eco-tourism projects 20 metres from the high tide line (HTL) in smaller islands like Baratang, Havelock and Car Nicobar, and at 50 metres in larger ones, allows for eco-tourism activities like mangrove walks, tree huts and nature trails in island coastal regulation zone, allows a number of new activities in the inter-tidal zone between low tide line and HTL etc.

## Solid Waste Management Rules, 2016

- The Rules are now applicable beyond municipal areas and will 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.
- 62 million tonnes of waste is generated annually in the country at present, out of which 5.6 million tonnes is plastic waste, 0.17 million tonnes is biomedical waste, hazardous waste generation is 7.90 million tonnes per annum and 15 lakh tonne is e-waste.

## Solid Waste Management Rules, 2016

- The per capita waste generation in Indian cities ranges from 200 grams to 600 grams per day.
- 43 million TPA is collected, 11.9 million is treated and 31 million is dumped in landfill sites, which means that only about 75-80% of the municipal waste gets collected and only 22-28 % of this waste is processed and treated. “Waste generation will increase from 62 million tonnes to about 165 million tonnes in 2030”
- The responsibility of generators has been introduced to segregate waste into three categories - Wet, Dry and Hazardous Waste. Wet (Biodegradable), Dry (Plastic, Paper, metal, wood, etc.) and domestic hazardous wastes (diapers, napkins, empty containers of cleaning agents, mosquito repellents, etc.)



## Solid Waste Management Rules, 2016

- The generator will have to pay 'User Fee' to the waste collector and a '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.
- 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.

## Solid Waste Management Rules, 2016

- 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.
- 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
- Special provision for management of solid waste in hilly areas:-  
Construction of landfill on the hill shall be avoided.

- Thank you