

## Tree Planting for Restoring Ecosystem

### Why in news?

According to the World Bank, the world has lost about 10 million square kilometres of forests since the 20<sup>th</sup> century due to uncontrolled and unsustainable practices, severely degrading forest landscapes.

### What is Forest degradation?

- **Forest** - It is a large geographical area dominated by trees, animals of various species, aquatic biomes and microorganisms.
- **Forest degradation** - It refers to the *reduction in a forest's capacity* to provide goods and services due to human activities or natural disasters.
- **Causes** - It primarily caused by *environmental and anthropogenic changes*, has the potential to wipe out the whole forest cover and biodiversity.
  - Forest degradation, for example, can occur when acid rain or wildfires devastate a forest region.
- **Illegal Logging**- Uncontrolled logging for timber, firewood, and charcoal significantly degrades forests.
- **Agricultural Expansion**- Clearing forests for cash crops and cattle rearing leads to substantial deforestation.
- **Mining and Infrastructure**- Mining and infrastructure projects cause tree loss and forest degradation.
- **Climate Change**- Rising temperatures, shifting rainfall, and extreme weather contribute to forest decline.

### Status of Forest degradation

- **India**-According to the Food and Agriculture Organization (FAO), *India lost 668,000 hectares of forest per year* between 2015 and 2020, which was the second highest rate of deforestation in the world, after Brazil.
- **Globally**- Since 1990, *420 million hectares of forest* have been lost to other land uses.
- Deforestation declined from 16 million hectares per year in the 1990s to an expected 10 million hectares per year between 2015 and 2020.

### What is Ecosystem restoration?

- Ecosystem restoration - It involves assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.
- **Objective**- It aims to *restore natural habitats* and also to ensure that ecosystems can sustain their functions and services over time, benefiting both nature and human well-being.
- **Methods of restoration**

- **Reforestation-** Planting native trees in areas where forests have been cut down or degraded.
- **Afforestation-** Planting trees in areas where there were no previous forests, creating new forested areas.
- **Wetland Restoration-** Restoring natural hydrology, removing invasive species, and reintroducing native vegetation to revive wetland ecosystems.
- **Soil Restoration-** Using techniques like contour plowing, terracing, and the application of organic matter to restore soil health and prevent erosion.

### Decade on Ecosystem Restoration

- **Decade on Ecosystem Restoration** - *year 2021 to 2030*
- **Declared by-** United Nations (UN)
- **Target-** It target for the *restoration of 350 million hectares* of degraded land to *generate \$9 trillion in ecosystem services* and sequester an additional 13 gigatons-26 gigatons of greenhouse gases from the atmosphere.

- **Significance-** Ecosystem restoration is key to achieving multiple SDGs, such as climate action, life below water, life on land, and poverty alleviation.

### What is Tree planting?

- It refers to the *process of transplanting tree seedlings*, usually for forestry, land reclamation, or landscaping purposes.
- **Aim-** It aims at *restoring forests, increasing green cover*, and combating climate change.
- **Purify air** - Trees *absorb pollutants and produce oxygen*, improving air quality.
- **Mitigate global warming** - Trees *sequester carbon dioxide*, helping *mitigate climate change*.
- **Regulate local weather** - They also *influence local weather patterns* and reduce the urban heat island effect.
- **Preserve water** - Trees improve water infiltration into the soil, reducing runoff and preventing soil erosion.
- They also help maintain groundwater levels.
- **Support biodiversity** - They provide habitat and food for various species, supporting wildlife and maintaining ecological balance.
- **Boost economic activities** - Tree planting and forestry activities can create job opportunities in rural and urban areas.
- **Challenges** - Planting trees in inappropriate areas like grasslands and animal habitats can *harm ecosystems, increase wildfire risk, and worsen global warming*.

### Measures by India for Improving Green Cover

- India aims to *restore 21 million hectares* of forest by 2030 through the Bonn Challenge.
- India's national forest policy *targets 33% tree coverage*.
- **National Afforestation Programme** (NAP)- Launched in 2000, aims to increase the forest cover in the country through afforestation and reforestation activities.
- **Green India Mission**- A part of the National Action Plan on Climate Change, focusing on increasing forest cover, enhancing biodiversity, and improving ecosystem services.
- **Tree Plantation Drives** - Van Mahotsav (Tree Plantation Day) celebrated in the first week of July.
- **Haritha Haram Program**- It is launched by Telangana to increase the green cover of the state through extensive tree planting activities.

*In 2023, U.S. President highlighted that India is the only G20 nation meeting its Paris Agreement commitments, achieving a carbon sink of 1.97 billion tonnes of CO2 equivalent.*

### **What lies ahead?**

- *Use nature-based solutions*, like forest landscape restoration, can help reverse deforestation and degradation, restoring ecological, social, climatic, and economic benefits.
- *Reorient innovations* and strategies, supported by public awareness, social media, and community incentives, can transform forest ecosystems.
- *Follow effective post-planting care* and monitoring are crucial

### **References**

1. [The Hindu | Pros and Challenges of Tree Planting](#)
2. [IUCN | Deforestation and forest degradation](#)
3. [Live Eo | Forest Degradation](#)