



Land Restoration and Afforestation

For Prelims: [Nagar Van Yojana](#), [National Forest Policy of 1988](#), [National Mission for a Green India \(GIM\)](#)

For Mains: Role of afforestation and sustainable land management in achieving India's climate resilience goals. Initiatives related to Land Restoration and Afforestation

Source: [PIB](#)

Why in News?

Recently, the **Union Minister of State for Environment, Forest and Climate Change, in a written reply in the Lok Sabha**, shed light on the pivotal initiatives taken by India to **combat land degradation and promote afforestation**.

- The [Nagar Van Yojana \(Urban Forest Scheme\)](#), a progressive initiative the Ministry of Environment, Forest and Climate Change, has gained significant traction as its progress continues to illuminate India's commitment to creating vibrant urban green spaces.

What is Nagar Van Yojana(NVY)?

- **About:**
 - The **NVY** was introduced in the year 2020 with a visionary objective - the creation of **1000 Nagar Vans (urban forests)** in cities equipped with **Municipal Corporations, Municipal Councils, Municipalities, and Urban Local Bodies (ULBs)**.
 - This ambitious initiative is designed to foster not only a holistic and healthy living environment for city residents but also to **contribute significantly to the growth of cleaner, greener, and more sustainable urban centres**.
- **Key Features:**
 - Creating **green space and aesthetic environment in an urban set-up**.
 - Creating awareness about **plants and biodiversity** and developing environment stewardship.
 - Facilitating **in-situ conservation of important flora of the region**.
 - Contributing to **environmental improvement of cities by pollution mitigation**, providing cleaner air, noise reduction, water harvesting and reduction of heat islands effect.
 - Extending **health benefits to residents** of the city and helping cities become **climate resilient**.
- **Progress and Impact of NVY:**
 - Since its inception, the **NVY** has gained remarkable momentum, with **385 projects sanctioned across the country**.
 - This impressive progress underscores India's dedication to transforming its cities into thriving, eco-conscious communities.

What are the Initiatives to Combat Land Degradation and Promote

Afforestation?

▪ Government Initiatives to Boost Forest Cover:

- **National Forest Policy (NFP) 1988:**
 - The NFP 1988 sets a national goal of achieving a **minimum of one-third of the total land area under forest or tree cover.**
 - The aim is to maintain **ecological balance, conserve natural heritage, and prevent soil erosion in river, lake, and reservoir catchment areas.**
 - **National Mission for a Green India (GIM):**
 - It is under the **National Action Plan on Climate Change (NAPCC)** and aims to increase forest and tree cover, restore degraded ecosystems, and enhance biodiversity.
 - **Forest Fire Protection & Management Scheme (FFPM):**
 - This scheme focuses on **preventing and managing forest fires**, contributing to the overall health of forests.
 - **Compensatory Afforestation Fund:**
 - This approach involves utilizing funds collected for diverting forest land for non-forest purposes to undertake afforestation and reforestation projects, thus restoring forest cover.
 - Utilized by States/UTs for compensatory afforestation to offset forest land diversion for developmental projects.
 - **90% of the Compensatory Afforestation Fund money is to be given to the states while 10% is to be retained by the Centre.**
 - **National Coastal Mission Programme:**
 - Under the National Coastal Mission Programme on 'Conservation and Management of Mangroves and Coral Reefs', **annual Management Action Plan (MAP) for conservation and management of mangroves are formulated and implemented** in all the coastal States and Union Territories.
 - **State Specific Initiatives:**
 - **Mission Haritha Haram:**
 - It is a flagship programme of the Telangana government to increase the **green cover of the State from the present 25.16 to 33% of the total geographical area.**
 - **Green Wall:**
 - It is an initiative launched by the Haryana government to **restore and protect the Aravalli range.**
 - It is an ambitious plan to create a **1,400km long and 5km wide green belt** buffer around the Aravali Mountain range covering the **states of Haryana, Rajasthan, Gujarat and Delhi.**
 - **Afforestation Achievements:**
 - **Twenty Point Programme Reporting:**
 - Over the period from 2011-12 to 2021-22, approximately **18.94 million hectares of land have been covered through afforestation efforts.**
 - These achievements result from concerted efforts by both the State Governments and central and state-specific schemes.
 - **Multi-Sectoral Approach:**
 - Afforestation activities are undertaken collaboratively across various sectors, involving departments, non-governmental organizations (NGOs), civil society groups, and corporate entities. This multi-faceted approach ensures a holistic effort to combat land degradation.
- ### ▪ Measures to Combat Land Degradation:
- **Desertification and Land Degradation Atlas:**
 - Published by the **Space Applications Centre (SAC)** of the **Indian Space Research Organisation**, this atlas provides **critical data on the extent of land degradation** and desertification in India. It helps in planning restoration efforts based on accurate information.
 - **Centre of Excellence at ICFRE:**
 - The establishment of a Centre of Excellence at the **Indian Council for Forestry Research and Education (ICFRE)** in Dehradun promotes South-South

Cooperation.

- It facilitates knowledge **exchange, best practice sharing, and capacity building for sustainable land management.**
- **Bonn Challenge Pledge:**
 - India committed to **restoring 26 million hectares of degraded and deforested land by 2030** as part of the **voluntary [Bonn Challenge](#)**. This global initiative focuses on restoring degraded lands for enhanced ecosystem services and biodiversity.
- **UNFCCC COP and UNCCD COP14:**
 - India's participation in the [United Nations Framework Convention on Climate Change \(UNFCCC\) Conference of the Parties \(COP\)](#) and the [United Nations Convention to Combat Desertification \(UNCCD\) COP14](#) demonstrates the country's commitment to global efforts in land restoration and combating desertification.

What are the Challenges Associated With Land Degradation and Afforestation?

▪ Challenges Associated with Land Degradation:

- **Soil Erosion:**
 - Intense **rain and wind remove topsoil**, reducing soil fertility.
 - Improper **agricultural practices and deforestation** contribute to erosion.
 - **Climate change** disrupts soil health through shifting precipitation patterns and rising temperatures. Altered weather conditions, such as **intense rainfall exceeding soil absorption capacity, accelerate erosion, causing runoff and degradation.**
- **Desertification:**
 - **Arid and semi-arid areas** experience soil degradation and loss of vegetation cover.
 - **Overgrazing** and unsustainable land use exacerbate desertification.
- **Industrialization and Urbanization:**
 - Urban expansion and industrial activities **lead to soil sealing, impeding water infiltration and nutrient cycling.**
 - Pollution from industries can contaminate soil and water resources.
- **Land Pollution and Contamination:**
 - Improper **disposal of waste and hazardous materials** leads to soil contamination and reduced soil productivity.
 - Landfills and **improper waste management** contribute to land degradation.

▪ Challenges Associated with Afforestation:

- **Species Selection:**
 - Choosing **suitable tree species that thrive in the local ecosystem.**
 - Invasive species may outcompete native vegetation.
- **Survival and Growth:**
 - Ensuring newly planted trees survive harsh conditions and grow successfully.
 - Water availability, soil quality, and climate influence tree establishment.
- **Competing Land Uses:**
 - Conflicts arise when **afforestation competes with agriculture, urbanization, or other land uses.**
 - Balancing conservation goals with economic activities is challenging.
- **Ecosystem Imbalance:**
 - Rapid afforestation without considering **native species and ecosystems** may disrupt natural balances.
 - Planting monocultures can lead to biodiversity loss.
- **Community Participation:**
 - Engaging local communities in afforestation efforts is crucial for long-term success.
 - Inadequate community involvement may lead to resistance or unsustainable practices.

Way Forward

- **Integrated Landscape Management:**
 - Develop holistic land-use plans integrating afforestation with other activities.
 - Implement sustainable land management practices to prevent erosion and desertification.
- **Science-Based Species Selection and Agroforestry:**
 - Conduct research to select suitable tree species for local ecosystems.
 - Promote agroforestry models for enhanced biodiversity and productivity.
- **Bio-Engineering Solutions:**
 - Harness bio-engineering techniques like soil bio-remediation and bio-fencing to restore land health and prevent erosion.
- **Traditional Ecological Wisdom:**
 - Collaborate with indigenous communities to revive traditional agroforestry practices, integrating local knowledge into modern restoration strategies.
- **Eco-Entrepreneurship:**
 - Encourage community-led afforestation enterprises, creating sustainable livelihoods and nurturing a sense of ownership.
- **Sustainable Financing Mechanisms:**
 - Mobilize funds from budgets, international sources, and public-private partnerships.
 - Ensure transparent allocation for afforestation projects.
- **Monitoring, Research, and Innovation:**
 - Develop robust monitoring systems for progress and impact assessment.
 - Invest in research and innovation for climate-resilient afforestation techniques.

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