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17 OCTOBER 2025

EN-BUZZER

Daily News Analysis

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FRIDAY, 17th OCTOBER 2025

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1. Forest Declaration Assessment 2025

- Prelims - Forest Declaration Assessment 2025
- Mains - GS 3 - Environment

Why in the news?

- Forest Declaration Assessment (an annual peer-reviewed global forest progress tracker) was released Forest Declaration Assessment 2025

Forest Declaration Assessment 2025

- **Context:** Follow-up to the 2021 COP26 pledge by world leaders to end deforestation and forest degradation by 2030.
- **Global Forest Status:**
 - **Deforestation trend:** World remains 63 % off-track from the 2030 goal.
 - **Forest loss (2024):**
 - ★ 8.1 million ha lost globally ($\approx$ area of Austria).
 - ★ 6.73 million ha lost from tropical forests alone.
 - **Main cause:** Permanent agriculture ($\approx$ 86 % of deforestation), particularly for soy, beef, palm oil, timber.
- **Forest Restoration Efforts:**
 - **Restoration target (COP26):** Restore 30 % of degraded ecosystems by 2030.
 - **Current progress:**
 - ★ Only 10.6 million ha are under active restoration.
 - ★ This equals 5.4 % of potential reforestation and just 0.3 % of total biophysical forest restoration potential.
 - **Inference:** Ecosystem restoration efforts remain marginal and insufficient.
- **Financial Imbalance:**
 - **Finance for forests (2022-24):** \$5.7 billion → an increase from \$1.7 billion (2018-20).
 - **Agriculture subsidies:** \$409 billion annually — the main driver of deforestation.
 - **Needed finance:** \$117 – \$299 billion per year to meet 2030 forest goals.



- **Quote (Erin Matson):** Incentives remain “completely backwards” — we don’t need to destroy forests to meet commodity demand.
- **Financial institutions:** Only 40 % of those exposed to deforestation risk have relevant mitigation policies.
- **Governance & Rights Gaps:**
 - Insecure land rights and weak law enforcement undermine conservation.
 - Limited participation of Indigenous Peoples, local communities, and especially women in forest governance.
 - Women’s involvement has proven to enhance conservation, but is still underrepresented.
 - Industry dominance: Political–economic power of extractive and agro-industrial sectors outweighs conservation priorities.
- **India-Specific Observation:**
 - India finalised rules under the amended Forest (Conservation) Act, 2023-24, reducing protections for several forest areas.
 - The report notes this undermines rights of forest-dependent communities and may accelerate degradation.
- **Broader Implications**
 - Forest loss threatens:
 - ★ 80 % of terrestrial biodiversity.
 - ★ Global climate stability, by reducing carbon sinks essential for keeping warming under 1.5 °C.
 - The failure to slow deforestation endangers the 2030 biodiversity and climate goals and UN SDG 15 (Life on Land).



2. Tropical Forest, Significance and Threats

- **Prelims** - Tropical Forest, Significance and Threats
- **Mains** - GS 3 - Environment

Why in the news?

- As per United Nations Environment Programme (UNEP) report Tropical forests comprising 391 million of the world's total 1.6 billion hectares forestland are at high risk of loss.

Tropical Forest, Significance and Threats

- **Tropical Forest:**
 - **Location:** Tropical forests are dense evergreen forests found between the Tropic of Cancer and Tropic of Capricorn (roughly 23.5° N–23.5° S).
 - **Major regions:** Amazon Basin (South America), Congo Basin (Africa), Southeast Asia (Indonesia, Malaysia, India's Western Ghats, Andaman-Nicobar).
 - **Climate:** High temperature (25–30 °C), heavy rainfall (> 200 cm annually), high humidity.
 - **Types:**
 - ★ Tropical Rainforest (evergreen, multilayered canopy)
 - ★ Tropical Deciduous Forest (monsoon forests)
 - **Features:**
 - ★ Plants: Characterised by tall trees with broad leaves, epiphytes (plants that grow on other plants), and abundant vines.
 - ★ Animals: Teeming with life, including monkeys, snakes, insects, colourful birds, and frogs.
- **Significance:**
 - **Biodiversity Hotspots:**
 - ★ House more than half of the world's plant and animal species, including many endemic and undiscovered species.
 - ★ Support complex food webs and important genetic diversity, influencing global ecosystem resilience.
 - **Climate Regulation & Carbon Sequestration:**



- ★ Act as major carbon sinks, absorbing and storing large amounts of carbon dioxide, thus helping mitigate climate change.
- ★ Regulate local and global climate patterns through evapotranspiration and canopy cover, maintaining temperature and precipitation cycles.
- **Water Cycle Maintenance:** Critical in maintaining the earth's hydrological cycle- help influence rainfall patterns and prevent floods and droughts.
- **Source of Livelihood and Resources:**
 - ★ Provide timber, medicinal plants (up to 25% of medicines from rainforest plants), fruits, nuts, and other economic goods.
 - ★ Indigenous peoples depend on the forests for food, shelter, and culture.
 - ★ Support employment through agriculture, tourism, and sustainable harvesting.
- **Soil Protection and Nutrient Cycling:** Roots stabilize soil, preventing erosion. Forests also play a key role in recycling nutrients through the ecosystem.
- **Cultural and Social Value:** Home to thousands of indigenous communities, maintaining unique traditional knowledge and cultural heritage.
- **Threats faced:**
 - **Deforestation:** Caused by expansion of agriculture (soy, oil palm, cattle ranching), logging for timber, and infrastructure projects.
 - **Habitat Fragmentation:** Forest patches become isolated, reducing breeding populations and genetic diversity, making adaptation to climate stresses more difficult.
 - **Climate Change:** Increased temperatures, extreme weather events, and changing rainfall patterns lead to more droughts, fires, and shifts in forest composition.
 - **Degradation** from Extractive Industries like mining
 - **Biodiversity Loss:** Habitat destruction, leading to extinction or severe reduction of species populations, especially specialists and large fauna.



3. Germany

- **Prelims** - Location of Germany
- **Mains** - GS 1 - Geography

Germany



Why in news?

- German Chancellor said that they will develop a comprehensive action plan to counter the Hybrid Warfare waged by Russia.

Germany

- Germany is a country in **Central Europe**.
- **Capital** - Berlin
- **Geographical Borders**
 - *Germany is situated between the Baltic and North seas to the north.*
 - *Alps to the south.*
- **Bordering countries are Denmark, Poland, Czech Republic, Austria, Switzerland, France, Luxembourg, Belgium, and Netherlands.**
- **Member Groupings** - United Nations, the European Union, NATO, the Council of Europe, the G7, the G20 and the OECD.





4. Bioeconomy

- **Prelims** - Bioeconomy
- **Mains** - GS 3 - Science and Technology & Economy

Why in the news?

- According to the Kerala Bioeconomy Report 2025, prepared by the Association of Biotechnology Led Enterprises (ABLE), Kerala's bioeconomy sector has achieved a robust annual growth rate of 12%.

Bioeconomy

- **What is it?:**
 - Bioeconomy refers to the production, utilization, and conservation of biological resources such as plants, animals, microorganisms, and biomass, using science, technology, and innovation to produce sustainable goods and services across sectors like agriculture, health, energy, and industry.
 - It aims to create a sustainable and inclusive economy by replacing fossil-based resources with bio-based alternatives and promoting circular economic models.
- **Bioeconomy in India:**
 - India's bioeconomy grew 16-fold in a decade contributing 4.25% to national GDP and recorded a CAGR of 17.9% over the last four years.
 - India ranks among the Top 12 global biotech destinations and is the 3rd largest in the Asia-Pacific region.
 - Over 10,000 biotech startups are operational, up from barely 50 in 2012.
- **Key Sectors of India's Bioeconomy:**
 - **BioPharma:** Vaccines, biosimilars, diagnostic kits; supported by the National Biopharma Mission (NBM-i3).
 - **BioAgri:** Biofertilizers, biopesticides, biofortified crops, precision agriculture.
 - **BioIndustrial:** Biofuels, bio-based plastics, biomanufacturing for green chemicals.
 - **BioEnergy:** Ethanol blending (target 20% by 2025), reducing crude oil imports and CO₂ emissions.
 - **BioServices:** Contract research, bioinformatics, and health-tech innovation.



- **Policy Frameworks to Boost Bioeconomy:**

- **BioE3 Policy (Biotechnology for Economy, Environment, and Employment):**

- ★ Aims to Transform India into a global biotech powerhouse through advanced biomanufacturing, bio-AI hubs, and sustainable bio-based industries.
- ★ Focuses on Value-added biobased industries, Shifting from fossil fuels to bio-based manufacturing and Job creation in tier-II and III cities using local biomass.

- **National Biofoundry Network:**

- ★ Comprises six leading institutions to strengthen biomanufacturing capabilities by accelerating lab-to-market transitions.
- ★ Supports startup innovation through Bio-RIDE and BioE3 initiatives.

- **National Mission on Bioeconomy:**

- ★ Focuses on rural job creation, sustainable bio-resource utilization, and biomass mapping.
- ★ Launched under Department of Biotechnology

- **Genome India Project:** Genome sequencing of 10,000 individuals to enhance health innovation.

- **Biotech-KISAN:** Connects scientists with farmers for bio-based agricultural solutions.

- **BioSaarthi Programme:** Global mentorship for biotech startups.

- **Significance:**

- **Economic Growth:** Adds new green job opportunities and startup-led entrepreneurship.
- **Environmental Sustainability:** Promotes circular bioeconomy, replaces petrochemicals.
- **Energy Security:** Reduces oil imports and carbon emissions.
- **Food Security:** Improves nutritional value through biotech crops.
- **Rural Development:** Biomass-based local industries create decentralized employment.



- **Challenges:**

- Limited commercialization and late-stage R&D funding.
- Gaps in biosafety regulation and bio-waste management.
- Need for skilled biomanufacturing workforce.
- Policy harmonization across multiple ministries.

- **Way Forward:**

- Expand biofoundry and biomanufacturing clusters regionally.
- Promote Bio-AI integration for faster product innovation.
- Strengthen global partnerships and ethical standards.
- Enhance funding through PPPs and venture capital support.
- Invest in bio-literacy and workforce training.



5. Venezuela

- Prelims - Location of Venezuela
- Mains - GS 1 - Geography

Venezuela



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Why in the news?

- US President Donald Trump confirmed that US has authorised CIA to conduct covert operation in Venezuela in view of drugs being trafficked to US from Venezuela.

Venezuela

- **Location:** It is a South American country.
- **Capital:** Caracas
- **Bordering Countries:** Guyana, Brazil, and Colombia.
- **Bordering Waterbodies:** Caribbean Sea and the Atlantic Ocean.
- **Rivers:** Orinoco River
- **Grasslands:** Llanos
- **Waterfall:** Angel Falls, the world's highest waterfall.



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6. Carbon Border Adjustment Mechanism (CBAM)

- **Prelims** - Carbon Border Adjustment Mechanism (CBAM)
- **Mains** - GS 3 - Environment

Why in the news?

- An analysis by the European non-profit think tank Sandberg has revealed that Indian exporters of iron and steel to the European Union may face Carbon Border Adjustment Mechanism (CBAM) charges- the highest among all countries exporting similar products to the EU.

Carbon Border Adjustment Mechanism (CBAM)

- **What is it?:**
 - Carbon Border Adjustment Mechanism (CBAM) is a key component of the European Union's (EU) European Green Deal, aimed at preventing "carbon leakage" and ensuring fair competition between EU industries and foreign producers subject to different climate regulations.
 - **Carbon leakage** refers to the relocation of industries from countries with strict emission regulations to those with lenient ones, undermining climate goals.
- **Objective:**
 - To equalize the carbon cost between domestic (EU) products and imports by applying a carbon price on imported goods based on their embedded emissions.
 - Ensures that imported goods bear the same carbon cost as EU-produced goods regulated under the EU Emissions Trading System (EU ETS).
- **Working of CBAM:**
 - **Import Reporting:** EU importers must declare the embedded greenhouse gas (GHG) emissions in imported products.
 - **Carbon Certificates:** Importers purchase *CBAM certificates* equal to the EU carbon price (per tonne of CO₂ equivalent).
 - **Adjustment:** If the exporting country has a carbon pricing system, equivalent payments made there are *deducted* from the price owed in the EU.
 - **Revenue Use:** The EU expects CBAM revenues to fund green transition initiatives.
- **Impact on India:**
 - **Economic Impact:**
 - ★ India exports iron, steel, aluminum, and cement worth billions of dollars annually to the EU.



- ★ Higher costs due to carbon pricing may make Indian products less competitive in the EU market.
- ★ Estimated additional cost: 20–35% carbon tax on select imports from 2026.
- **Trade Concerns:**
 - ★ Acts as a trade barrier to developing countries like India, China, and Brazil.
 - ★ May undermine the principles of “Common but Differentiated Responsibilities” (CBDR) under the Paris Agreement.
- **India’s Response:**
 - Diplomatic Engagement: India is negotiating for recognition of its domestic carbon taxes and emission reduction efforts as equivalent carbon pricing.
 - Policy Countermeasures:
 - ★ Developing its own Carbon Credit Trading Scheme (CCTS) under the Energy Conservation (Amendment) Act, 2022, to align with global carbon pricing regimes.
 - ★ Advocating for fair treatment of developing countries at COP29 and WTO forums.
 - Industrial Adaptation: Accelerating the green steel and low-carbon production technologies.
- **Significance of CBAM:**
 - Global Climate Governance: Encourages all trading nations to internalize carbon costs.
 - Competitive Fairness: Prevents “carbon dumping” and levels the playing field for compliant industries.
 - Technology Incentive: Pushes exporters toward cleaner production.
- **Criticisms:**
 - Disproportionate burden on developing nations.
 - May conflict with the CBDR-RC principle of the UNFCCC.
 - Could lead to trade tensions and green protectionism.
 - Still lacks transparency and harmonized methodology for assessing embedded emissions.
- **Way forward for India:**
 - Strengthen domestic carbon market through the CCTS and renewable energy mandates.



- Seek mutual recognition of India's emission offset mechanisms under EU CBAM.
- Develop green supply chains and carbon accounting capacity among industries.
- Engage diplomatically to ensure equity and transitional support for developing nations.