

07 to 10<sup>th</sup> November 2025.

## Experts Bat for Increasing Carbon Sequestration of Soil, Prioritising Endemic Trees

### Why in News?

At *The Hindu Sustainability Summit 2025*, experts urged increasing soil carbon levels in India from ~0.15% to 2–5% and prioritising **endemic tree species** over exotic plantations for long-term ecological health. The summit underscored climate governance, ESG-driven corporate action, and inter-departmental coordination to support India's carbon goals and ecological resilience.

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### Relevance :

#### GS Paper III – Environment & Sustainable Development

- Carbon sequestration and climate mitigation
- Soil health, regenerative agriculture, and afforestation strategies
- Biodiversity conservation through endemic species
- ESG compliance, corporate sustainability, and green governance
- India's climate targets & Net-Zero 2070 commitments

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### Background

- **Carbon sequestration** refers to storing atmospheric CO<sub>2</sub> in soil and vegetation, acting as a carbon sink.
- India's **soil organic carbon (SOC)** has sharply declined due to intensive farming, deforestation, and land degradation.
- Global climatic frameworks now view **soil restoration and native biodiversity** as key climate mitigation tools.
- Summit theme: *Policy and Governance for Climate Action* — stressed collaboration between industry, government, and local institutions.

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### Key Highlights

#### Soil Carbon & Endemic Tree Advocacy

- Sultan Ahmed Ismail (Tamil Nadu State Planning Commission): urged **raising soil carbon to 2–5%** for ecological resilience.
- **Endemic trees** preferred over exotic fast-growing species as they:
  - Support local biodiversity
  - Enhance soil microbiome and earthworm activity
  - Improve long-term carbon retention

- Highlighted need for **policy coordination** between forestry, agriculture, and climate departments.

### Corporate Climate Action (CPCL Model)

- Chennai Petroleum Corporation Ltd (CPCL) adopted **Planet–People–Profit** sustainability framework.
- Key achievements:
  - Zero freshwater withdrawal**
  - Asia’s first sewerage reclamation plant + 5.8 MGD desalination**
  - Rainwater harvesting (57 sites), stormwater storage (79,500 KL)
  - Renewable portfolio: **17.6 MW wind & solar; 100 MW renewable grid import capacity** planned
  - Compliance with **BRSR** and **UN SDG-aligned ESG reporting**

### ESG & Governance Integration

- Jayanthi Raju Vadivelu (ERM): ESG must shift from compliance to **innovation and capital mobilisation**.
- Strong governance structures improve **green capital inflow and investor confidence**.

### Localised Climate Governance

- Tamil Nadu Climate Mission (Girish Palwe):
  - Green Fellowship Program operational in all districts**
  - Advocated **bottom-up, region-specific climate planning**, not uniform policies.

### Key Data

- India’s current soil carbon: **~0.15%**
- Desired ecological threshold: **2–5%**
- CPCL renewable capacity: **17.6 MW (expandable to 100 MW)**

### Significance

#### Dimension Impact

Ecological	Improves soil fertility, water retention, and biodiversity
Economic	Reduces fertilizer costs, enhances farm productivity
Climate	Strengthens India’s carbon sink capacity, aids net-zero targets

## Dimension Impact

Governance Institutionalizes ESG and cross-sector sustainability

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### Challenges

- Weak inter-agency coordination between environment, forest, and agriculture departments
- Afforestation still dominated by **exotic monocultures** (eucalyptus, acacia, etc.)
- Limited soil carbon monitoring and technical adoption
- ESG capacity gap in MSME and unorganised sectors

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### Way Forward

Integrate **soil carbon targets into national climate policies (NDC, NMSA)**

Prioritise **endemic afforestation and regenerative farming** (zero tillage, agroforestry, mulching)

Deploy **AI, GIS, and remote sensing** for soil and forest carbon tracking

Broaden ESG reporting beyond large corporates to supply chains and MSMEs

Establish **inter-department climate coordination councils** at state and district level

### Boost Financial Sector Reforms to Secure \$30 Trillion Economy Goal

#### Why in News?

The World Bank's latest Financial Sector Assessment (FSA) urges India to accelerate financial-sector reforms to meet its Vision 2047 goal of becoming a \$30-trillion economy. The FSA highlights the need to mobilise private capital, deepen financial markets, and strengthen financial-system stability.

#### Relevance :

##### GS-3 – Economy

- Reforms for financial stability and long-term financing
- Private capital mobilisation and institutional investors
- Digital financial infrastructure and fintech regulation
- IMF–World Bank assessments (FSAP/FSA) and Vision 2047 roadmap
- Financial inclusion and regulatory institutional strengthening (RBI, SEBI, IRDAI, PFRDA)

### Background

Vision 2047 sets an ambitious economic scale-up from roughly \$4 trillion (2025) to \$30 trillion by 2047. The Financial Sector Assessment Program (FSAP) by IMF–World Bank evaluates systemic risks, regulation and market depth. Earlier FSAP (2017) flagged structural weaknesses; the 2025 FSA recognises improvements but calls for further reforms.

### Key findings of 2025 FSA

- The financial system has become more resilient, diversified and inclusive since 2017.
- Banking sector health improved (NPAs down to ~3% in 2024 from >11% in 2017–18).
- Capital markets deepened: equity market cap ~110% of GDP; corporate bond markets growing.
- Digital finance boom: UPI, microfinance, PMJDY and Aadhaar-linked systems have increased inclusion.
- Gap: credit-to-GDP ratio (~56%) remains much lower than some peers (e.g., China ~180%).

### World Bank recommendations

- **Deepen capital markets:** Promote long-term instruments (bonds, REITs, InvITs); simplify rules to attract investors.
- **Strengthen NBFCs:** Better supervision, governance and capital adequacy.
- **Mobilise private capital:** Develop venture/private equity and strengthen institutional investors (pension, insurance funds).
- **Financial stability & inclusion:** Improve coordination across RBI, SEBI, IRDAI, PFRDA; boost financial literacy and consumer protection.
- **Leverage technology:** Expand digital infrastructure while ensuring data governance & cybersecurity.

### Challenges identified

Low long-term finance penetration; heavy reliance on public sector banks; regulatory fragmentation; rising household leverage and informal credit channels.

### Significance

A deep, efficient financial sector is essential to finance sustained high growth (~8–9% pa), reduce dependence on government borrowing and attract private investment — crucial for the \$30T Vision and Amrit Kaal reforms like GIFT City.

## SC Pushes for Reform of Colonial-Era Property Laws

### Why in News?

The Supreme Court has directed the Law Commission to prepare recommendations to modernise archaic property laws — such as the Transfer of Property Act (1882), Registration Act (1908) and Stamp Act (1899) — noting that property transactions remain cumbersome and property disputes account for a large share of civil litigation.

### Relevance :

#### GS-2 – Polity & Governance

- Legal reform and Law Commission's mandate
- Centre–State land governance coordination (land is a state subject)
- Good governance, ease of doing business and land-digitisation

- Property rights and constitutional dimensions

### **Background**

The major property laws date back to colonial times and were drafted for a different economic and administrative context. Post-independence, despite urbanisation and new technologies, key provisions remain unchanged. Fragmented state practices on registration, stamps and verification exacerbate delays and fraud.

### **Judicial observations**

The Court characterised property dealings as traumatic — citing fake documents, title fraud, encroachments, red tape and corruption in sub-registrar offices. It underscored property ownership as a constitutionally protected interest and called for modern legal architecture.

### **Court's directives & reform ideas**

- Law Commission to draft modernisation proposals.
- Centre to lead digitisation and harmonisation across states.
- Adoption of blockchain suggested for immutable, transparent title records.

### **Issues identified**

Fragmented state databases; manual records prone to fraud; multiple verifications; delays and poor grievance redress.

### **Suggested reform measures**

- National unified property registration framework.
- Full digitisation under DILRMP, integration with Aadhaar and GIS mapping.
- Blockchain-based title registries to prevent fraud and duplication.

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## **HAL–GE Aerospace \$1 Billion Jet Engine Deal**

### **Why in News?**

HAL signed a roughly \$1-billion deal with GE Aerospace to procure 113 F404-GE-IN20 engines for the Tejas LCA Mk-1A fleet — deliveries scheduled between 2027–2032. The agreement supports India's fighter production and defence-industrial base.

### **Relevance :**

#### **GS-3 – Internal Security / Economy / Science & Tech**

- Defence indigenisation and Atmanirbhar Bharat
- India–US defence industrial cooperation and technology transfer
- Fighter fleet modernisation (Tejas programme) and strategic air-power needs

### **Background — Tejas Programme**

Tejas is India's indigenous 4.5-generation light combat aircraft developed by ADA and manufactured by HAL, intended to replace older MiG-21s. Variants include Mk-1, Mk-1A and upcoming Mk-2; TEDBF is for naval operations.

### **About the F404-GE-IN20 engine**

- Afterburning turbofan by GE Aerospace.
- High thrust, reliability, and proven operational track record powering Tejas variants.
- HAL to integrate engines domestically, with ToT constraints under export controls.

#### **Deal details**

- 113 engines for 97 Tejas Mk-1A (plus spares).
- Contract value ~US\$1 billion.
- Delivery timeline 2027–2032.
- Support package: training, spares and maintenance.

#### **Strategic significance**

- Sustains Tejas production and squadron strength.
- Enhances HAL's manufacturing ecosystem and supply chain – casting, machining, testing.
- Reinforces Indo–US defence cooperation and aids future indigenous engine projects.

#### **Challenges**

Dependence on US tech (ITAR/Export controls), possible cost overruns or diplomatic hiccups affecting supply chains.

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### **Kazakhstan to Join Abraham Accords**

#### **Why in News?**

U.S. President Donald Trump announced Kazakhstan's entry into the Abraham Accords — the US-mediated normalisation framework between Israel and several Arab/Muslim nations — marking the first addition in his second term and extending the Accords' footprint into Central Asia.

#### **Relevance :**

#### **GS-2 – International Relations**

- India's West Asia and Central Asia policy implications
- U.S. diplomacy and Middle East peacemaking architecture
- Geopolitical realignment in West & Central Asia and implications for India's connectivity & energy links

#### **Background — Abraham Accords**

Initially signed in Sept 2020, the Accords sought to normalise diplomatic and economic relations between Israel and certain Arab states (UAE, Bahrain, later Morocco and Sudan). They aim to foster security cooperation, trade, tech and energy ties.

#### **Kazakhstan's accession**

- Kazakhstan already has formal relations with Israel since 1992; joining the Accords is largely symbolic but signals US diplomatic reach.

- Motivations include diversifying partnerships, accessing Israeli technology (agriculture, water), and balancing ties between Russia–China and the West.

### **Strategic significance**

- Extends Israel's normalisation beyond the Arab world into post-Soviet Central Asia.
- Offers the U.S. a platform to counterbalance BRI influences.
- Could create new bilateral tech, agriculture, security and connectivity opportunities.

### **Challenges & criticisms**

Accords have been criticised for sidelining Palestinian concerns; Central Asian alignment may strain ties with Iran and provoke domestic opposition in Muslim-majority societies.

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## **Stray Dog Management & ABC Rules (Supreme Court Directive)**

### **Why in News?**

In Nov 2025 the Supreme Court ordered removal of stray dogs from public premises (schools, hospitals, transport hubs), instructing authorities to sterilise and vaccinate animals before moving them to designated shelters — consistent with the Animal Birth Control (ABC) Rules, 2023.

### **Relevance :**

#### **GS-2 – Governance & Social Justice**

- Intersection of animal welfare law (PCA Act), public health (rabies) and local governance
- Implementation of ABC Rules 2023 and humane management

### **Background**

India's stray dog population is large (~63 million per older estimates), contributing to high rabies burdens (~18–20k deaths/yr). The ABC Rules 2023 (replacing 2001 rules) focus on sterilisation, vaccination, community-animal terminology, and local responsibility for feeding and monitoring.

### **Key points of ABC Rules 2023**

- Emphasise humane treatment, sterilisation and vaccination.
- Local bodies must implement sterilisation programs; RWAs share feeding/management duties.
- Dogs should not be culled; shelters must humane house relocated animals.
- Local committees set dispute mechanisms.

### **Supreme Court directives**

- Remove dogs from sensitive public sites but only after sterilisation & vaccination.
- State-wise implementation plans required and humane handling mandated.

### Challenges

Funding gaps, shortage of veterinary infrastructure, conflicts between feeders and RWAs, low sterilisation coverage.

### Way forward

Scale up municipal sterilisation & vaccination, improve waste management (reduce food access), public awareness and integrated rabies elimination strategies per WHO targets.

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## Rhesus Macaque Protection: Reinstatement Under Schedule II

### Why in News?

The Standing Committee of the National Board for Wildlife recommended restoring the Rhesus Macaque to Schedule II of the Wildlife (Protection) Act, 1972, to enhance statutory protection against illegal capture, cruelty and trade.

### Relevance :

#### GS-3 – Environment & Biodiversity

- Wildlife law (schedules under WPA) and species protection
- Human–wildlife conflict management and conservation biology
- Institutional frameworks (NBWL, WII, State forest departments)

### About Rhesus Macaque

- Widespread across India and neighbouring countries; adaptable to forest and urban habitats.
- IUCN status: Least Concern; population estimates several million in India.
- Cultural significance (Hanuman association) and scientific role in research.

### Legal & policy background

- WPA schedules dictate protection levels; Schedule II confers stronger safeguards.
- Past delisting or lower protection was driven by conflict management needs in some states.
- Growing reports of illegal trade, mistreatment, habitat loss and impact on genetic diversity prompted reconsideration.

### SC-NBWL recommendation

- Reinstate Schedule II status; direct states to prepare conflict-management plans, map conflict zones, and build rescue/rehab centres.
- WII to conduct baseline population & conflict mapping.
- States urged to pursue non-lethal methods (sterilisation, habitat restoration) and strengthen rescue infrastructure.

### Conflict & management stats

High reported conflict cases and crop losses in some states; past culling was ineffective — prompting a shift to humane interventions.

### Way forward

A blend of conservation protections, conflict mitigation, sterilisation programs, rescue/rehab centres and community engagement is advised.

10<sup>th</sup> November 2025: Daily MCQs

**Q1.** The World Bank's 2025 Financial Sector Assessment (FSA) recommended all of the following EXCEPT:

- A. Promote long-term financing instruments such as corporate bonds and REITs.
- B. Increase reliance on public sector banks as the primary source of long-term credit.
- C. Strengthen supervision of NBFCs and enhance regulatory coordination among RBI, SEBI, IRDAI and PFRDA.
- D. Leverage digital financial infrastructure while reinforcing data governance and cybersecurity.

**Answer: B**

**Explanation:** The FSA urged reducing over-dependence on public sector banks, not increasing it; it recommended diversifying long-term finance and strengthening markets and institutions.

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**Q2.** Under the proposed reforms to colonial-era property laws, which technological measure did the Supreme Court recommend to ensure transparent title records?

- A. Mandatory paper registration at multiple offices
- B. Adoption of blockchain-based title registries
- C. Abolishing registration requirements entirely
- D. Shifting all property disputes to local panchayats

**Answer: B**

**Explanation:** The Court suggested modernisation, including digitisation and use of blockchain to create immutable, transparent land title records.

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**Q3.** The HAL–GE deal for F404-GE-IN20 engines is primarily intended to:

- A. Source engines for the Tejas Mk-1A fleet and ensure production continuity while HAL integrates engines domestically.
- B. Immediately replace all indigenous engine development programs.
- C. Export Tejas fighters to the U.S. Air Force.
- D. Convert Tejas into a twin-engine heavy fighter without domestic integration.

**Answer: A**

**Explanation:** The engines support Tejas Mk-1A production; HAL will perform domestic integration and assembly; the deal sustains squadron strength and domestic industrial capacity.

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**Q4.** Kazakhstan joining the Abraham Accords is likely to:

- A. Mark a break in Kazakhstan's multi-vector foreign policy by aligning exclusively with the West.
- B. Be purely symbolic given existing ties with Israel, while enhancing technology and trade cooperation and serving U.S. diplomatic goals.

- C. Immediately trigger Kazakhstan's withdrawal from all ties with Russia and China.
- D. Mandate Kazakhstan to adopt Israel's domestic policies.

**Answer: B**

**Explanation:** Kazakhstan already maintains relations with Israel; joining is symbolic but opens avenues for tech and trade cooperation and signals broader U.S. influence — it does not force severing ties with other powers.

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**Q5.** Under the ABC Rules 2023 and the Supreme Court directive (Nov 2025), which statement is correct?

- A. Stray dogs can be culled if found near schools.
- B. Dogs may be removed from public premises only after sterilisation and vaccination, and must be humanely sheltered.
- C. Local bodies are absolved of responsibility for sterilisation.
- D. Feeding community animals in residential areas is criminalised.

**Answer: B**

**Explanation:** The SC ordered removal from sensitive public sites only after sterilisation/vaccination per ABC Rules 2023; humane sheltering is mandated and culling is prohibited.

**Mains:** With rising urban–wildlife interactions and public-health concerns, assess the legal and policy framework of India's Animal Birth Control Rules (2023) in managing community animals. What institutional reforms are necessary to balance humane animal welfare with citizen safety and public health objectives?

