

Comprehensive Coverage of
CURRENT
AFFAIRS

ENTIRE CONTENT OF DECEMBER 2025



✓ Polity and Governance

✓ Art and Culture

✓ Indian Economy

✓ Indian Society

✓ Science and Technology

✓ Environment & Ecology

✓ Biodiversity

✓ Awards & Prizes

Useful for **IAS / PCS / HCS / HAS & other Exams.**

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INDIAN ECONOMY

Viksit Bharat – Guarantee for Rozgar and Ajeevika Mission (Gramin) Bill, 2025 VB-G RAM G

New rural employment and livelihood guarantee statute introduced in Parliament to **replace the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005**. It aims to align rural employment guarantees with India's **Viksit Bharat @2047 vision**, embedding wage employment within a broader framework of rural development and livelihoods. Passed by Lok Sabha and Rajya Sabha: **18-19 December 2025**

Objectives

- 1. Expand Employment Guarantee**
 - Provides a **statutory guarantee of 125 days** of wage employment per rural household per financial year for adult members willing to perform unskilled manual work (up from 100 days under MGNREGA).
- 2. Link Jobs with Infrastructure & Livelihoods**
 - Encourages creation of **durable assets**: water security works, core rural infrastructure, livelihood-related infrastructure, and climate-resilient works.
- 3. Align with Viksit Bharat 2047 Vision**
 - Integrates employment guarantee with long-term national objectives for **prosperity, sustainability and resilience**.
- 4. Convergence and Saturation**
 - Promotes **unified planning** (e.g., Viksit Gram Panchayat Plans) and convergence of schemes across ministries for saturation of benefits.
- 5. Planning & Accountability**
 - Emphasises **technology-based monitoring**, transparency, and community accountability mechanisms.

Key Provisions & How It Works Employment Guarantee

- **125 days of work** guaranteed to rural households.
- Works must be provided within the scheme's framework as per the Bill.

Funding & Cost-Sharing

- Introduces **normative allocation**: the Centre determines state-wise allocations for each financial year.
- **Cost-sharing** between Centre and states:
 - **60:40** for most states,
 - **90:10** for northeastern/Himalayan states,
 - **100% central funding** for union territories without legislature.

Seasonal Flexibility

- Allows states to **pause work up to 60 days** during peak agricultural seasons to support farm labour availability.

Planning Framework

- **Viksit Gram Panchayat Plans** for village-level development linked through a **National Rural Infrastructure Stack** to ensure coordinated planning.

Transparency & Monitoring

- Technology-enabled architecture with social audit and public disclosure mechanisms.

Transitional Provisions

- The Bill **repeals MGNREGA, 2005** and integrates existing structures into the new framework.

Advantages & Policy Intent

1. Strengthened Income Security

- Higher work guarantee (125 vs 100 days) provides **enhanced income support** to rural households.

2. Durable Rural Assets

- Focus on **productive infrastructure** (water, roads, climate-adapted works) potentially delivers sustained rural growth.

3. Integrated Rural Development

- **Convergence of public works** with other schemes can reduce fragmentation and improve outcomes.

4. Modernised Legal Framework

- Aligns employment guarantee with **budget predictability** and digital planning/monitoring systems.

5. Seasonality & Labour Availability

- Seasonal pause helps balance **labour supply with agricultural cycles**, making policy more farmer-friendly.

Challenges & Criticisms

1. Shift Away from Open-Ended Funding

- Normative funding and cost-sharing reduce **automatic central liability**, raising concerns over states' fiscal capacity.

2. State Financial Burden

- States may struggle with **40% share**, especially financially weaker ones, potentially affecting execution.

3. Legal Guarantee Concerns

- Critics argue the new framework weakens the **rights-based guarantee** that made MGNREGA a legal entitlement.

4. Implementation Complexity

- New planning mechanisms (GIS mapping, infrastructure stacks) may be **administratively demanding** for rural local bodies.

Dimension	MGNREGA (2005)	VB-G RAM G Bill (2025)
Legal nature	Rights-based welfare legislation	Mission-mode development legislation
Core objective	Provide employment as a legal right	Employment + livelihoods + durable rural assets
Development philosophy	Social protection	Productivity-linked development
Vision linkage	Poverty alleviation	Viksit Bharat @2047
Guaranteed employment days	100 days per rural household	125 days per rural household

Nature of guarantee	Strong statutory entitlement	Programmatic / statutory mission assurance
Demand vs supply	Demand-driven	Planned + convergence-driven
Time-bound job provision	Employment within 15 days	Linked to Mission framework
Unemployment allowance	Explicitly provided	Weaker / less explicit
Type of work	Unskilled manual labour	Unskilled work + livelihood-linked works
Asset focus	Labour-intensive, short-term	Durable, productivity-enhancing assets
Typical assets	Ponds, kutcha roads, soil works	Water security, climate-resilient & core infrastructure
Economic impact	Short-term income support	Long-term rural productivity
Planning unit	Gram Panchayat	Viksit Gram Panchayat Plan
Convergence with schemes	Limited	Strong, mandatory convergence
Digital architecture	MIS, job cards	National Rural Infrastructure Stack
Funding model	Open-ended, demand-based	Normative annual allocation
Centre-State cost sharing	Centre bears major wage cost	60:40 (90:10 for NE/Himalayan states)
Fiscal predictability	Low	Higher
State fiscal responsibility	Limited	Increased
Seasonal flexibility	Limited	Up to 60-day pause during peak agriculture
Labour-agriculture alignment	Weak	Stronger
Transparency tools	Social audit, muster rolls	Social audit + tech-enabled monitoring
Accountability emphasis	Citizen entitlement-centric	System & outcome-centric
Implementation burden	Moderate	Higher (planning, convergence, tech)
Inclusiveness risk	Lower (open-ended)	Higher if allocations fall short
Name & symbolism	Mahatma Gandhi	Viksit Bharat Mission
Overall orientation	Welfare-centric safety net	Development-centric livelihood mission

Recent ADB Financing Agreements with India (2025)

\$800 Million Loan Agreements (Nov 2025)

Government of India and ADB signed **three loan agreements worth over \$800 million** for development programs in four states, along with a **\$1 million technical assistance grant**:

1. **Maharashtra Power Distribution Enhancement Programme** – \$500 million
 - Modernises rural power infrastructure, supports **agricultural solarisation**, enhances daytime solar electricity for irrigation, and strengthens grid components.
2. **Indore Metro Rail Project** – ~₹27.15 billion (~\$190.6 million)
 - Expands underground metro infrastructure with multimodal integration, improving urban connectivity.
3. **Gujarat Skills Development Programme** – \$109.97 million

- Enhances workforce competencies in logistics, automotive, renewable energy, IT and healthcare through industry-linked training.

4. **Technical Assistance Grant – \$1 million**

- Supports the *Sustainable Wetland and Integrated Fisheries Transformation (SWIFT)* Project in Assam to strengthen wetland ecosystems and fisheries.

\$2.2 Billion Loan Agreements (Dec 2025)

India and ADB signed **five loan agreements worth over \$2.2 billion** to support key national priority areas:

1. **Pradhan Mantri Skilling & Employability Transformation (PM-SETU) – \$846 million**

- Modernises 650 Industrial Training Institutes and develops advanced trainer centres to improve employability in high-growth sectors.

2. **Rooftop Solar Systems Development (Subprogramme 1) – \$650 million**

- Supports **Pradhan Mantri Surya Ghar: Muft Bijli Yojana**, accelerating rooftop solar adoption nationwide.

3. **Assam State Tertiary Health Care Augmentation Project (ASTHA) – \$398.8 million**

- Strengthens tertiary health infrastructure to improve access and quality of care.

4. **Chennai Metro Rail Investment Project (Tranche 2) – \$240 million**

- Expands metro network and enhances sustainable urban mobility.

5. **Integrated Ecotourism & Sustainable Agri-based Livelihood Project (Meghalaya) – \$77 million**

- Promotes ecotourism and livelihood diversification in rural areas.

ADB's Financing Footprint in India

According to ADB project data:

- ADB's sovereign portfolio in India includes **dozens of active loans** supporting inclusive growth, infrastructure, and human capital development.

Major areas of ADB engagement include:

- **Urban development and mass transit** (e.g., metro systems, RRTS)
- **Renewable energy and clean technology**
- **Skilling and human capital**
- **Healthcare systems**
- **Water, sanitation and climate resilience projects**
- **Skills and economic diversification programs**

ADB has also pledged large **multi-year financing**, including up to **\$10 billion over five years** for urban transformation, with emphasis on metro expansion, municipal infrastructure, and sustainable urban services.

Advantages of ADB Support

1. Mobilising Long-Term Capital

ADB loans provide **long-tenor, low-cost capital**, helping scale infrastructure and development investments beyond what domestic budgets can immediately absorb.

2. Supports National Flagship Initiatives

Financing aligns with programmes like:

- **Pradhan Mantri Surya Ghar: Muft Bijli Yojana**
- **PM-SETU**

- Urban mobility plans (metro, RRTS)
This ensures coherence with national objectives.

3. Technical Assistance and Capacity Building

Grants and policy dialogues improve project design, governance, and institutional capacity.

4. Inclusive & Sustainable Growth Focus

ADB financing promotes:

- rural electrification and solar adoption
- climate resilience
- skills development
- healthcare access

This supports sustainable development goals.

Challenges and Considerations

1. Debt Servicing and Fiscal Space

External financing adds to government liabilities and requires robust fiscal planning to balance debt sustainability.

2. Project Implementation Risks

Infrastructure and social sector projects need strong governance, monitoring, and state-level capacities to avoid cost overruns and delays.

3. Policy Alignment

ADB financing sometimes requires alignment with policy reforms and regulatory norms that require inter-sector coordination.

Asian Development Bank (ADB):

Establishment & Headquarters

- **Established:** 1966
- **Headquarters:** Manila, Philippines
- **Legal status:** Multilateral Development Bank

Membership

- **Total Members:** 69
 - **Asia-Pacific members:** 49
 - **Non-regional members:** 20
- **India:** Founding member

Core Objective

- To promote:
 - **Economic growth**
 - **Inclusive development**
 - **Environmental sustainability**
 - **Regional cooperation** in Asia-Pacific region

Set Funding Mechanisms of ADB (VERY IMPORTANT FOR PRELIMS)

ADB has **three main financing windows-**

1. Ordinary Capital Resources (OCR)

- **Main lending window**
- Funded by:

- Capital subscriptions from members
- Borrowings from international capital markets
- Provides:
 - **Non-concessional loans**
 - Market-linked interest rates
- Used for:
 - Middle-income countries (like **India**)
 - *India mainly receives funds from OCR*

2. Asian Development Fund (ADF)

- **Concessional financing window**
- Provides:
 - **Low-interest / zero-interest loans**
 - **Grants**
- Beneficiaries:
 - **Low-income and vulnerable developing countries**
- Funded by:
 - Periodic contributions from donor members

India does NOT borrow from ADF (but contributes as a donor)

3. Technical Assistance (TA)

- **Non-loan support**
- Purpose:
 - Project preparation
 - Capacity building
 - Policy advisory
- Can be:
 - Grant-based
- Often accompanies loans

Types of Financing Instruments

ADB provides:

- **Sovereign loans** (to governments)
- **Non-sovereign loans** (to private sector)
- **Equity investments**
- **Guarantees**
- **Grants** (mainly under ADF & TA)

Capital Structure

- **Subscribed capital** from member countries
- Voting power based on:
 - Shareholding
- **Japan and USA** are the **largest shareholders**

Governance Structure

- **Board of Governors**

- One Governor per member country
- **Board of Directors**
 - 12 Directors:
 - 8 from regional members
 - 4 from non-regional members
- **President**
 - Chief executive officer

Operational Priorities (ADB Strategy 2030)

ADB focuses on:

- Addressing poverty & inequality
- Gender equality
- Climate change
- Livable cities
- Rural development
- Governance & institutional capacity
- Regional cooperation

India’s Rail Electrification Drive Nears Completion

- **Indian Railways** is close to completing **electrification of almost its entire broad-gauge network**.
- Over **99 %** of the broad-gauge network has already been electrified.
- The remaining sections are expected to be completed soon.
- Between **2019 and 2025**, Indian Railways electrified **over 33,000 route km**.
- The pace was more than **15 route km per day** on average during this period.

Significance

Environmental & Climate Impact-

- **Reduced diesel consumption**
- **Lowered carbon emissions**
- **Enhanced energy efficiency** in the rail sector

These support India’s broader **net-zero and sustainable development goals**.

Transport Efficiency:

- **Faster and cleaner passenger mobility**
- Lower operational costs for Indian Railways

This aligns with improved infrastructure service delivery.

Type of Gauge	Track Width	Status in India	Key Features	Typical Use / Examples
Broad Gauge (BG)	1,676 mm	Dominant and standard gauge; covers most of the railway network	High speed, high load capacity, better stability and passenger comfort	Long-distance passenger trains, heavy freight trains, Dedicated Freight Corridors
Metre Gauge (MG)	1,000 mm	Largely converted to Broad Gauge under Project Unigauge	Moderate speed and load capacity,	Earlier used for regional and inter-district routes

			relatively lower construction cost	
Narrow Gauge (NG)	762 mm / 610 mm	Very limited presence; mostly heritage or hilly routes	Low speed, suitable for difficult terrain, cheaper and flexible alignment	Hill railways (e.g., Darjeeling Himalayan Railway), feeder and heritage lines

Indian Railways: Schemes & Initiatives

1. Mission Railway Electrification

- Objective: **100% electrification of Broad Gauge (BG) network**
- Mode: **Mission-mode execution**
- Status (Dec 2025):
 - **~99.2% BG network electrified**
- Period of rapid expansion: **2019-2025**
- Electrification achieved: **~33,000 route km**
- Implementing agency: **Indian Railways**

Prelims trap: Electrification applies to **Broad Gauge**, not meter or narrow gauge.

2. Net Zero Carbon Emitter Target (Indian Railways)

- Target year: **2030**
- Strategy includes:
 - Full electrification
 - Renewable energy traction
 - Energy-efficient rolling stock
- Announced by: **Ministry of Railways**

Prelims trap: India's national net-zero target = **2070**, Railways = **2030**

3. Renewable Energy Procurement by Indian Railways

Solar Power

- Installed capacity (2025): **~898 MW**
- Railway stations with solar power: **~2,626**
- Solar usage:
 - Stations
 - Workshops
 - Offices
 - Traction support

Wind Power

- Installed capacity: **~93 MW**

Hybrid / RTC Renewable Power

- Tied-up capacity: **~1,600 MW**
- Type: **Round-The-Clock (RTC) renewable energy**
- Purpose: Reliable clean power for traction

Prelims fact: Railways procure RE through **open access and power purchase agreements**.

4. Dedicated Freight Corridors (DFC)

- Type: **High-capacity, fully electrified freight corridors**

- Implementing agency: **Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL)**
- Eastern DFC: **Completed**
- Western DFC: **>90% complete**
- Purpose:
 - Shift freight from road to rail
 - Reduce logistics cost
 - Lower emissions

5. PM Gati Shakti – National Master Plan, 2021

- Type: **Digital platform + institutional mechanism**
- Objective: Integrated infrastructure planning
- Covers:
 - Railways
 - Roads
 - Ports
 - Power
 - Telecom
- Railway relevance:
 - Multitracking projects
 - Last-mile connectivity
 - Faster project approvals

Prelims fact: Gati Shakti is **not a funding scheme**, but a **planning framework**.

6. Amrit Bharat Station Scheme, 2022

- Target: **~1,275 railway stations**
- Nature: **Long-term station redevelopment**
- Focus areas:
 - Energy efficiency
 - Passenger amenities
 - Multimodal integration

Prelims trap: It is **station redevelopment**, not track electrification.

7. Hydrogen-Powered Train Initiative

- Nature: **Pilot project**
- Fuel: **Hydrogen**
- Objective:
 - Alternative clean traction
 - Reduce fossil fuel use
- Linked with: **National Green Hydrogen Mission**
- Status: **Pilot / demonstration phase**

Prelims fact: Hydrogen trains are **supplementary**, not replacing electrification.

8. Energy-Efficient Rolling Stock

- Electric locomotives with:
 - **Regenerative braking**
- Benefit:

- Energy savings
- Reduced power consumption
- Supports:
 - Net zero target
 - Lower operational emissions

Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2026

- **ASUSE** is a **government statistical survey** to measure the economic characteristics of unincorporated non-agricultural enterprises in India.
- It covers unincorporated establishments involved in:
 - **Manufacturing**
 - **Trade**
 - **Services**
(Note: excludes construction).

Purpose of ASUSE

- Collects key data on:
 - Number of workers
 - **Gross Value Added (GVA)**
 - Emoluments paid
 - Fixed assets owned
 - Outstanding loans
 - Operational characteristics (e.g., ownership type, ICT use)
- **Supports policymaking** and feeds into:
 - **National Accounts Statistics (NAS)**
 - Policy decisions in ministries like **MSME, Textiles**, etc.

Survey History & Frequency

- **Conducted annually** since 2021-22.
- **ASUSE 2025** is ongoing (Jan-Dec 2025) and informs the draft questionnaire for **ASUSE 2026**.

Recent Update (Dec 2025)

- A **draft ESU (Enterprise Survey Unit) schedule for ASUSE 2026** has been prepared and **uploaded on the MoSPI website** for wide consultation.
- **Stakeholder feedback** (researchers, ministries, industry bodies, academicians) is invited by **20 Dec 2025** to improve relevance and coverage.

Relevance:

Economic Data & Policymaking

- Provides **high-frequency, detailed structural data** about the **unincorporated sector** — critical for accurate GDP estimation and policy planning.

National Accounts Statistics (NAS)

- ASUSE data feed into **GDP and economic activity measurements**, improving estimation accuracy.

MSME & Informal Sector Context

- Helps understand the **informal (unincorporated) economy**, which:
 - Employs millions
 - Contributes significantly to domestic value chains
 - Is key for MSME policy formulation and labour market analysis.

Regional Rural Banks (RRBs)

1. Government Unveils Common Logo for RRBs

- The **Department of Financial Services (Ministry of Finance)** unveiled a **common logo** for all Regional Rural Banks in India.
- This was done to reinforce a **unified identity** following recent consolidation under the **“One State, One RRB”** policy.

2. Implementation of *One State, One RRB* Policy

- The **Government has implemented the “One State, One Regional Rural Bank”** policy with effect from **1 May 2025**.
- Under this policy, **26 Regional Rural Banks were merged** into fewer, stronger RRBs to improve operational efficiency, capital base, credit delivery and governance.

3. Consolidation to Strengthen Rural Banking

- Consolidation aims to:
 - Build **larger, financially resilient RRBs**
 - Rationalise costs and reduce administrative overhead
 - Enhance **technology adoption and governance**
 - Enable better competition with other banks and rural finance providers.

4. RRBs' Financial Performance Improving

- RRBs have posted **record consolidated profits** (e.g., **₹7,571 crore in FY 2023-24**), indicating improving financial health.
- Balance sheet size and key metrics such as deposits, advances, credit-deposit ratio and NPA levels have also improved.

RRBs

- **Established:** 1975 through an Ordinance; enacted as **Regional Rural Banks Act, 1976**, following the recommendations of the Narasimham Committee on Rural Credit (1975)
- The first RRB was Prathama Bank, headquartered in Moradabad, Uttar Pradesh.
- **Purpose:** Provide **institutional credit and banking services** to rural and semi-urban areas, especially to small & marginal farmers, agricultural labourers, artisans and rural enterprises.
- **Ownership Structure:**
 - Central Government
 - State Government
 - Sponsor Bank
- **Sponsor Banks & Regulation:**
 - Sponsor banks are typically commercial/public sector banks.

- RRBs are regulated by the **Reserve Bank of India** and supervised by **NABARD**.
- For taxation, they are treated as cooperative societies under the Income Tax Act, 1961.
- Priority Sector Lending: The RBI has set an enhanced target for Regional Rural Banks (RRBs) to lend 75% of their Adjusted Net Bank Credit (ANBC) or 75% of ANBC or Credit Equivalent of Off-Balance Sheet Exposure (CEOBE), whichever is higher, to the Priority Sector Lending (PSL).
- **Network:** RRBs now operate **over 22,000 branches in rural and semi-urban areas** after consolidation.

India–Oman Trade Deal (Comprehensive Economic Partnership Agreement — CEPA)

- The **Comprehensive Economic Partnership Agreement (CEPA)** between **India and Oman** was **signed on 18 December 2025** in **Muscat, Oman** during Prime Minister **Narendra Modi's** official visit.
- It marks a **major step in India's trade engagement** with the Gulf region.

Key Features of the Agreement

Tariff Concessions

- Oman offers zero-duty access on 98.08% of its tariff lines, covering 99.38% of India's exports to Oman by value.
- India agreed to liberalise tariffs on 77.79% of its tariff lines, covering 94.81% of imports from Oman by value.

Goods Market Access

- **Major Indian labour-intensive and export sectors** will benefit from duty-free access:
 - *Textiles, leather, footwear*
 - *Gems & jewellery*
 - *Engineering products*
 - *Plastics & furniture*
 - *Agricultural products*
 - *Pharmaceuticals, medical devices*
 - *Automobiles*

Services & Investment

- Oman's CEPA commitments cover **127 service sub-sectors**, including:
 - Business & professional services
 - Computer-related services
 - Education, health services
 - Audio-visual & R&D services
- The agreement enhances **market access for Indian professionals** and allows **100% foreign direct investment (FDI)** in key services sectors.

Mobility of Professionals

- Oman agreed to **enhanced mobility provisions** for Indian professionals (Mode 4), including:

- Higher quota for intra-corporate transferees
- Longer permitted stay for contractual service suppliers
- These provisions will support greater collaboration and project execution in both markets.

Strategic Areas

- The CEPA was signed alongside a **Joint Vision Document** covering:
 - *Energy cooperation*
 - *Maritime security*
 - *Trade, investment and people-to-people ties*

Why This Deal Matters (Official Government Angle)

1. Deepens Economic Integration

- Lower tariff barriers
- Expand market access
- Boost trade flows and investment

2. Boosts Exports & Jobs

With near-universal duty-free access for Indian exports to Oman, labour-intensive sectors and MSMEs are expected to see significant gains.

3. Strategic Gulf Engagement

Oman is a **key gateway to the Gulf region and Africa**, and the CEPA enhances India's economic footprint in the **Middle East** — critical for diversifying export markets.

Timeline & Implementation

- The agreement was signed on **18 December 2025**.
- Officials (Commerce Minister) have said the CEPA is expected to be **operationalised within the next 3 months** after procedural formalities, possibly by **March 2026**.

National Digital Livestock Mission (NDLM) The **National Digital Livestock Mission (NDLM)** is a **technology-enabled, farmer-centric digital ecosystem** developed by the **Department of Animal Husbandry & Dairying**, Government of India.

- Also known as the **“Bharat Pashudhan” platform**, NDLM creates a **comprehensive digital database** for livestock and livestock-related services across the country.

Objectives of NDLM

The mission has multiple official objectives:

1. **Breed Improvement**
 - Manage and improve breeding outcomes by recording and analysing breeding activities digitally.
2. **Disease Monitoring & Control**
 - Enable real-time surveillance, prediction, prevention and management of livestock diseases.
3. **Product Traceability**
 - Establish a **foolproof traceability system** for livestock products (e.g., milk, meat) using unique animal IDs and geographic data, promoting branding and market access.
4. **Farmer-Centric Ecosystem**
 - Empower livestock owners with information on government schemes, services and animal health records.
5. **Open Architecture & Integration**

- Built on an **open-source, API-enabled platform** to integrate with financing institutions, insurance, private vets and other stakeholders.

How NDLM Works

Bharat Pashudhan Digital Platform

- A **mobile and web-based application** used by field workers to record livestock data.

Pashu Aadhaar

- Every animal is issued a **unique 12-digit bar-coded ear tag ID**, known as **Pashu Aadhaar**.
- This ID is used to register:
 - Animal registrations
 - Artificial insemination & breeding
 - Change in ownership
 - Vaccinations & disease reporting
 - Milk recording
 - E-prescriptions
 - Ration balancing*(All recorded digitally)*

Implementation & Scale

As of Dec 2025:

- **Livestock owners registered: 9.5 crore**
- **Pashu Aadhaar registered: 35.96 crore**
- **Field worker user IDs issued: 4 lakh**
- **Vaccination records in system: 146.6 crore**
- **Total transactional records: 250 crore**

This demonstrates the massive scale of livestock digitisation under the mission.

Digital Tools within NDLM

- **Bharat Pashudhan App:** Used by field workers to record livestock activities and feed data into the central system.
- **1962 Livestock Owner App:** Provides livestock owners with access to information about their animals and related government schemes/services by linking to the NDLM database.

(This replaced the earlier e-Gopala app)

Integration with Other Programmes

- Major livestock schemes like the **Rashtriya Gokul Mission (RGM)** and the **National Animal Disease Control Programme (NADCP)** are integrated with NDLM to ensure **better data sharing and service delivery**.

Significance for UPSC

1. Agriculture & Allied Sector Modernisation

- NDLM exemplifies **digital transformation in animal husbandry**, improving efficiency in livestock production and management — critical for rural livelihoods and food security.

2. Health & Disease Control

- Real-time disease surveillance enhances **biosecurity and epidemic response** in livestock — important for zoonotic disease control and agricultural resilience.

3. Market Linkages & Traceability

- Traceability supports **product quality assurance**, branding and access to domestic and export markets — relevant to **agri-value chains** and **market reforms**.

4. Empowerment & Inclusion

- By linking data, services and schemes via digital IDs and apps, the mission promotes **inclusion of small and marginal livestock owners** in formal systems.

Prelims-Friendly Facts

- **National Digital Livestock Mission (NDLM)** was launched by the **Department of Animal Husbandry & Dairying** under the Ministry of Fisheries, Animal Husbandry & Dairying.
- It is implemented through the **Bharat Pashudhan** digital platform with unique **12-digit Pashu Aadhaar IDs**.
- As of Dec 2025, **35.96 crore Pashu Aadhaar IDs** have been issued.
- The mission covers **all states** and includes **disease reporting, breeding, vaccinations and milk recording**.
- The **1962 Livestock Owner App** provides farmers access to animal data and schemes.

Supply and Use Tables (SUTs)

- **Supply and Use Tables (SUTs)** are accounting frameworks that **balance the total supply of goods and services with their total use** in an economy.
- They are prepared in line with the **UN System of National Accounts (SNA)** standards.

Structure of SUTs

SUTs consist of two linked tables:

1. Supply Table

- Shows:
 - **Domestic production**
 - **Imports**
- Classified by:
 - Industries
 - Products

2. Use Table

- Shows how goods and services are used as:
 - **Intermediate consumption**
 - **Final consumption (households & government)**
 - **Gross capital formation**
 - **Exports**

Core identity:

Total Supply = Total Use for every product.

Why SUTs are Important for GDP Estimation

- GDP can be estimated using **production, income or expenditure approaches**.
- Discrepancies often arise in **early GDP estimates** due to:
 - Incomplete data
 - Time lags
 - Use of proxies
- **SUTs act as a reconciliation tool** by cross-checking all three approaches.

Proposed Reform by MoSPI (Current Context)

- **MoSPI plans to integrate SUTs with annual national accounts.**
- Objective:
 - **Limit statistical discrepancies in advance GDP estimates**
 - **Eliminate discrepancies entirely in final GDP estimates** once full data is available.
- This marks a shift from partial balancing to **systematic economy-wide consistency checks.**

How SUTs Reduce GDP Discrepancies

- Force consistency between:
 - Output data
 - Consumption data
 - Investment data
 - Trade data
- Detect:
 - Double counting
 - Missing sectors
 - Misreporting of intermediate vs final use

Alignment with Global Standards

- SUT-based balancing is recommended under:
 - **System of National Accounts (SNA) 2008**
- Widely used by:
 - EU countries
 - OECD economies
- Enhances **international comparability** of India's GDP data.

Significance for India

- Improves:
 - **Credibility and transparency** of GDP estimates
 - **Policy reliability** for fiscal and monetary decisions
- Particularly relevant given:
 - Large informal sector
 - Frequent revisions in GDP data

Securities Markets Code Bill, 2025

- The **Securities Markets Code Bill, 2025** is a legislative proposal introduced in the Lok Sabha on **18 December 2025** by the **Union Finance Minister**. It is intended to **consolidate, simplify and modernise India's securities market laws.**
- The Bill seeks to replace multiple existing statutes with a **single unified code** governing securities markets.

Objectives of the Bill

- **Consolidation of laws:** Streamline multiple securities laws into **one comprehensive code** to reduce fragmentation and overlap.

- **Strengthen regulation:** Enhance the powers and capacity of the **Securities and Exchange Board of India (SEBI)**.
- **Investor protection:** Strengthen investor safeguards, grievance redressal and education.
- **Ease of doing business:** Simplify compliance and reduce redundancy in legal provisions.
- **Modernise market law framework** to address technological and financial innovation.

Key Provisions

1. Consolidation of Existing Laws

The Bill subsumes and replaces several securities market laws, including:

- **SEBI Act, 1992**
- **Depositories Act, 1996**
- **Securities Contracts (Regulation) Act, 1956**
- (Reports also indicate the Bill's background plan includes merging the **Government Securities Act, 2007** into the framework).

2. Strengthening SEBI

- Expands the **SEBI Board size** from the current **9 members to up to 15 members** to bring in broader expertise.
- Introduces **conflict-of-interest safeguards** requiring disclosure of direct/indirect interests by board members, and grounds for removal if these conflict with duties.

3. Enforcement & Compliance Framework

- **Single adjudication process** for market enforcement (removes multiple parallel procedures).
- Defined **timelines for investigations and interim regulatory orders** for faster action.
- De-criminalises minor procedural/technical violations — civil penalties replace criminal prosecution for such cases to reduce compliance burden.
- Retains **criminal penalties only for serious market abuses** and non-cooperation with investigations.

4. Investor Protection & Grievance Redressal

- Statutory backing for **investor education and awareness** initiatives.
- Establishes an **Ombudsperson mechanism** for **time-bound grievance redressal** under SEBI supervision.
- May provide for an **Investor Protection and Education Fund** (for restitution and awareness).

5. Regulatory Modernisation

- SEBI can establish a **Regulatory Sandbox** to test **new financial products and services** under controlled risk.
- Enables **inter-regulatory coordination** for smoother governance and possibly harmonisation with other financial regulators.

Why This Reform Matters

Boosts Regulatory Efficiency

- A unified code reduces **legal overlaps, redundancies and complexities**, enabling faster regulation of India's dynamic securities markets.

Enhances Investor Confidence

- Stronger investor protection mechanisms and compliance clarity can foster **greater retail and institutional participation**.

Ease of Doing Business

- Decriminalisation of minor defaults and civil penalty regime aims to attract businesses and reduce compliance friction.

Global Competitiveness

- A modern, single-code framework aligns India's markets with global best practices — important amid rising capital flows and fintech innovation.

Deepening the Corporate Bond Market in India**Released by:** NITI Aayog**Purpose:** To assess the current corporate bond market, identify its limitations, and propose reforms to make it deeper, more liquid, inclusive and globally competitive.**What Is a Corporate Bond?**

- A **corporate bond** is a debt security issued by a company to raise funds.
- Investors who buy bonds lend money to the company in return for **interest and repayment of principal at maturity**.
- Unlike equity (stocks), bonds do not give ownership rights.

Why a Deeper Corporate Bond Market Matters

A deep, liquid bond market:

- Provides **long-term financing** for infrastructure, MSMEs, and emerging sectors.
- Reduces reliance on **bank credit** (currently dominant in India).
- Improves **capital allocation, risk sharing, and financial stability**.
- Supports India's growth aspirations toward a **\$30 trillion economy and Viksit Bharat @2047**.

Current Status & Key Data**Market Size and Growth**

- Corporate bonds outstanding grew from about ₹17.5 trillion in FY2015 to ₹53.6 trillion in FY2025 (~12% annual growth).
- This amounts to **~15–16% of GDP**, still far below many other economies.
- Equity markets are nearly **7 times larger than India's bond markets**.

NITI Aayog projects the bond market could grow to around ₹100–120 trillion by 2030 if reforms are implemented.

Key Structural Challenges Identified**1. Issuer Concentration**

- Market dominated by *top-rated and large corporations*.
- *MSMEs and mid-sized firms* have limited access.

2. Investor Concentration

- Mostly **institutional investors** participate.
- *Retail and foreign investors* have very low participation.

3. Market Structure Issues

- **Private placements** dominate bond issuance.
- **Secondary market** trading (where bonds are bought and sold after issuance) is shallow.

4. Regulatory Frictions

- Multiple regulators, overlapping compliance, and procedural delays increase costs and complexity.

5. Investment Limits

- Investment norms for insurance and pension funds restrict holdings of lower-rated bonds.

Benefits of Developing the Bond Market

- Channels savings of households and institutions into productive investments.
- **Facilitates risk management tools** like credit derivatives.
- **Stabilises financing costs** and supports long-term funding needs (infrastructure, green/climate projects).
- Strengthens the **monetary policy transmission mechanism**.

Reforms and Recommendations

Strategic Pillars of Reform

1. Legal and Regulatory Improvements

- Simplify rules and improve coordination among regulators.
- Reduce compliance burden to attract more issuers and investors.

2. Broaden Investor Base

- Encourage **retail participation** through lower entry thresholds, tax incentives, and UPI-based access.
- Attract insurance, pension, and foreign investors.

3. Enhance Market Infrastructure

- Deepen trading platforms and electronic systems for **price discovery and liquidity**.
- Strengthen market-making and repo (repurchase agreement) facilities.

4. Expand Issuer Participation

- Support **mid-sized companies and MSMEs** with credit enhancements and simplified issuance processes.

5. Product Innovation

- Introduce **long-tenor bonds, sustainability-linked bonds**, and credit-enhanced instruments to match investor needs.

6. Leverage Technology

- Use **digital innovations** like tokenised bonds and integrated data platforms for transparency and efficiency.

Reforms Already Underway

- SEBI introduced **RFQ electronic trading platforms**, improved issuance norms and retail access tools.
- RBI strengthened settlement systems, repo arrangements and supported risk management instruments.
- Government promoted **InvITs/REITs** and green finance.

These form a **strong foundation** for further reforms.

Global Comparison Lessons

- Countries like **US, South Korea, Singapore, and Thailand** have:
 - Unified regulation,
 - High market liquidity,
 - Active participation from diverse investors,

- Deep secondary markets.
These features help boost bond markets globally.

World Inequality Report 2026 – Overview

What is it?

- A flagship global report produced by the **World Inequality Lab**, the **3rd edition** (after 2018 & 2022).
- Based on data from **200+ economists/researchers** across countries.
- Maps *income, wealth, emissions, gender* and *regional inequalities*.

Key themes

- Inequality is **historic and extreme**.
- It spans *wealth, income, gender, climate impact, and geography*.
- Growing concentration of resources in the hands of the ultra-rich.
- Highlights inequality as a **policy choice**, not just a structural outcome.

Global Findings

1. Wealth Distribution

- **Top 10%** of global population own **~75% of total wealth**.
- **Bottom 50%** hold only **~2% of global wealth**.
- **Top 0.001%** (\approx <60,000 individuals) own **3× more wealth than the bottom half** of humanity (\approx 2.8 billion).
- **Top 1%** owns about **37%** of global wealth.

These figures show **extreme concentration of wealth** worldwide.

2. Income Inequality

- **Top 10%** capture **~53% of global income**.
- **Bottom 50%** share in world income is marginal.

Indicates rising income polarization.

3. Climate & Emissions Inequality

- **Top 10%** emit **~77%** of emissions from private capital.
- **Bottom 50%** contribute only **~3%**.

Shows environmental injustice where the rich contribute most to emissions, but poor suffer the impacts.

4. Gender Inequality (Global)

- Women's earnings and labour participation remain significantly lower than men's (reported in the broader inequality discourse).

Though not a central global figure from this report version, existing evidence underscores gender inequality as a persistent dimension of inequality.

India-Specific Findings (Critical for UPSC)

1. Income Inequality in India

- **Top 10%** capture **~58% of national income**.
- **Bottom 50%** receive only **~15%**.

Reflects a stark skew in income distribution.

2. Wealth Concentration

- **Richest 10%** hold ~65% of total wealth in India.
- **Top 1%** alone controls ~40% of wealth.

Places India among the **most unequal major economies** globally in terms of wealth shares.

3. Gender & Labour Participation

- **Female labour participation** in India is **very low (~15.7%)**, with limited improvement over the past decade.

Signals *structural gender inequality* in economic participation.

4. Other Structural Insights

- Average annual income per capita in PPP ~ **€6,200**; average wealth ~ **€28,000**.
- Income and wealth gaps have shown *little improvement*, indicating entrenched inequality.

Causes & Drivers of Inequality (High-Level)

These are not always explicit but inferred from the report's analysis:

1. **Concentration of capital/wealth** in elite segments.
2. **Weak redistributive policies** & tax structures.
3. **Global financial imbalances** (wealth flows from Global South to North).
4. **Unequal access to education, health, and opportunities.**
5. Gender and labour market segmentation.

Policy Recommendations

The report suggests broad directions to narrow inequality:

1. Progressive Taxation

- Implement **stronger taxes on top earners and wealth** (e.g., wealth tax, inheritance tax).
- Ensure **global tax coordination** to prevent evasion.

2. Investment in Public Goods

- Expand **education, health, social protection** to benefit lower strata.

3. Strengthen Social Safety Nets

- Universal access to welfare services to reduce structural inequality.

4. Gender-Equal Policies

- Policies to increase **female labour force participation** and reduce pay gap.

5. International Cooperation

- Rebalance **global financial flows**.
- Address climate-related inequality.

Aspect	World Bank – Gini (2025)	World Inequality Report (2026)
Focus of measurement	Consumption inequality (Gini Index)	Income and wealth inequality
Rank placement	India interpreted as 4th most equal globally (based on consumption Gini)	No such global ranking claim
India's consumption Gini	25.5 (relatively low; "moderately low inequality")	Not measured
India's income share	Not the primary focus	Top 10% ≈ 58% of total income; Bottom 50% ≈ 15%
India's wealth concentration	Not covered	Top 1% ≈ 40% of total wealth

Overall interpretation	Suggests lower inequality in consumption outcomes	Reveals high inequality in income and wealth distribution
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IMF Flags Concerns Over India's GDP Data

The **International Monetary Fund (IMF)**, in its **2025 Article IV Consultation / Data Adequacy Assessment**, has assigned a **'C' grade** to India's **national accounts statistics**, including **GDP data**.

Understanding the IMF Rating System

IMF uses a **data adequacy assessment framework** where statistics are graded:

- **A** – best quality
- **B** – generally adequate
- **C** – some shortcomings
- **D** – major shortcomings

IMF Data Adequacy Assessment — Basis / Criteria for Grading System

The IMF evaluates member countries' macroeconomic statistics under its **"Data Adequacy for Surveillance Framework (DAF)"** as part of Article IV consultations.

Countries are graded **A, B, C, or D** based on how well their data supports IMF surveillance.

The grades are based on **four objective parameters**:

Coverage

- Whether required datasets (GDP, inflation, fiscal data, BoP, financial sector data) are available.
- Whether the data covers all sectors of the economy (including informal sector, services, digital economy).

Periodicity (Frequency)

- How frequently the data is produced: monthly, quarterly, annually.
- Whether frequency meets IMF standards for macroeconomic surveillance.

Timeliness

- How quickly the data is released after the reference period.
- Whether the delay affects economic decision-making.

Quality / Methodological Soundness

- The statistical methods, survey practices, and base-year relevance.
- Use of internationally accepted standards such as the **System of National Accounts (SNA 2008)**.
- Proper use of deflators (like PPI), enterprise surveys, and administrative data.

IMF Standard Meaning

A Grade — "Fully adequate"

- Data meets all IMF requirements (coverage, timeliness, methodology, frequency).
- Enables high-precision surveillance.

B Grade — "Broadly adequate"

- Minor shortcomings but still reliable for IMF analysis.

C Grade — "Some shortcomings that hamper surveillance"

- Required datasets exist **but** have methodological or quality limitations.

- Weaknesses such as an **outdated base year**, incomplete informal sector coverage, or outdated price indices.
- This is where India's GDP statistics currently fall.

D Grade — “Serious shortcomings”

- Major gaps in data availability or reliability.
- Makes IMF surveillance significantly difficult.

Key Concerns Raised by the IMF

According to the IMF evaluation and related analysis:

1. **Outdated base year for GDP estimates**
 - India still uses **2011–12** as the base year for national accounts, despite major structural shifts in the economy (services, digital economy.)
2. **Methodological limitations in deflators**
 - Lack of a comprehensive **Producer Price Index (PPI)** means reliance on older price measures (like WPI) for real growth estimation.
3. **Coverage gaps in the informal sector**
 - Large parts of the informal economy are not well captured by surveys or formal reporting.
4. **Discrepancies between production and expenditure GDP estimates**
 - Differences between the two approaches raise questions about internal consistency.
5. **Data weaknesses broadly unchanged year-on-year**
 - Despite efforts, the IMF noted that weaknesses “have remained broadly unchanged” compared with last year's report.

Official Indian Response

- The **Finance Minister** clarified that the ‘C’ grade largely reflects the **outdated base year** and not an indication that India's GDP figures are “misleading.”
- India has **plans to adopt a more recent base year (2022–23)** for GDP and national accounts in early 2026 to improve accuracy.
- The **RBI Governor** also stated that official estimates of GDP and inflation are “fairly accurate,” while recognizing scope for statistical improvement.

Why This Matters for India

1) Policy Surveillance & International Confidence

- IMF's grading affects how international institutions and investors **perceive the reliability of Indian macroeconomic data**.

2) Impact on Economic Modelling

- Weaknesses in data quality can **distort trend analysis, forecasting, and policy evaluation**, especially on employment, informal sector output, and investment.

Reforms to Improve Data Quality

- **Frequent rebasing** of GDP and price indices (PPI, CPI)
- **Integration of administrative and digital data sources** (digital payments, GST)
- **Strengthening informal sector measurement** through regular enterprise surveys
- **Capacity building in MOSPI & NSSO/NSO** for real-time data analytics

FAR Bonds (Fully Accessible Route Bonds)

FAR Bonds included in **global bond indices** such as JP Morgan GBIF and Bloomberg Emerging Market Index, which encourage global funds to invest in Indian govt debt.

What Are FAR Bonds?

FAR Bonds are Government of India securities that are fully open to non-resident investors without any investment ceilings.

They are part of RBI's strategy to:

- Deepen India's government securities market
- Improve liquidity
- Attract stable foreign capital
- Lower government borrowing costs over time

Regulatory Basis

Issued under- **RBI's Fully Accessible Route (FAR) — February 2020 Notification**

- Defined under **Section 2(f) of FEMA (Debt Instruments)**
- Categorized as **specified securities** that can be held 100% by non-residents
- Applies only to **Government of India dated securities**, not corporate bonds or state development loans

Key Features of FAR Bonds

Feature	Explanation
No FPI Limit	Foreign investors can hold these bonds without any cap or quota.
100% Accessible	Unlike normal G-secs where foreign ownership is capped (usually 6%), FAR bonds have zero restrictions .
Long-term, High-liquidity securities	Usually issued in benchmark tenors: 5-year, 10-year, 30-year etc.
Eligible for global bond index inclusion	Critical for attracting passive global funds.
Issued by Government only	Not available for private entities or state governments.
Trading allowed in secondary markets	FPIs can buy/sell without regulatory approvals.

Objectives of FAR Bonds

1. **Attract Foreign Capital**- Stable long-term inflows to finance India's fiscal needs.
2. **Deepen Bond Market Liquidity**- Higher participation → more transparent price discovery.
3. **Reduce Cost of Borrowing**- Greater demand = lower yields = cheaper borrowing for the government.
4. **Prepare India for Global Bond Indices**- Most global indices require unrestricted investor access.
5. **Support Rupee Internationalization**- More foreign participation in rupee assets strengthens the rupee's global profile.

Which Government Securities Are Classified as FAR Bonds?

RBI periodically notifies eligible securities.

Examples include:

- **5-year, 10-year, 30-year Government of India bonds**
- All newly issued **benchmark government bonds** are generally designated as FAR securities. (Exact list updated periodically on RBI website; depends on issuance cycle.)

How FAR Works?

1. RBI notifies certain G-secs as **FAR-eligible**.
2. FPIs, NRIs, FVCIs, and other non-residents can invest **without limits**.
3. These do **not** count toward foreign investment limit (overall cap).
4. Helps India meet eligibility criteria for global indices.
5. Index funds automatically start investing in these bonds → increases inflows.

Benefits to India

Economic Benefits

- Increased foreign investment inflows
- Lower government borrowing costs
- Better integration with global capital markets
- Improved depth and maturity of India's bond market

Strategic Benefits

- Enhances India's credibility and macroeconomic stability
- Supports a stronger rupee
- Prepares the ecosystem for capital account liberalization (gradual)

Risks / Challenges

- Higher vulnerability to **global interest rate shocks**
- Potential for **quick reversal** of FPI flows during crises
- Currency risk exposure
- Requires strong macroeconomic stability and prudent debt management

Related Schemes / Initiatives

1. **Voluntary Retention Route (VRR)**
 - RBI scheme (2019) encouraging long-term FPI investments in Indian debt
 - Unlike FAR, VRR has limits but offers relaxations.
2. **Government Securities Acquisition Programme (GSAP)**
 - RBI's bond purchase programme aiding liquidity in G-sec markets.
3. **NDS-OM (Negotiated Dealing System – Order Matching)**
 - Platform where FAR bonds are traded electronically.
4. **Capital Market Reforms under FEMA**
 - Liberalizing debt instruments for foreign investors.

8th Economic Census (EC-8)

Economic Census is India's **most comprehensive enumeration of all economic establishments**, except those engaged in crop agriculture.

It provides a **complete count of non-farm enterprises**, their employment, activity type, and other economic characteristics.

The **8th Economic Census** is the latest round, launched in **2019**, using a **completely ICT-based digital platform for the first time**.

What is the Economic Census?

Economic Census is a **nationwide count of all entrepreneurial units** involved in:

- Production of goods
- Delivery of services
- Non-agricultural economic activities

It is carried out by MoSPI at periodic intervals to create a **national business register** and inform policy.

Institutional Framework

Nodal Ministry- Ministry of Statistics & Programme Implementation (MoSPI)

Implementing Agency- CSC-SPV (Common Services Centres – Special Purpose Vehicle)

- Under **Ministry of Electronics & IT (MeitY)**
- Used village-level entrepreneurs (VLEs) for digital data collection

Technical Support- NSSO / NSO (National Statistical Office)

Key Features of the 8th Economic Census

Feature	Description
First fully digital census	Data collected via a mobile app developed by CSC-SPV
Complete enumeration	Covers all non-agricultural establishments, including home-based units
Household & establishment approach	Visits every household to identify enterprises
Geo-tagged data	Enhances accuracy for future surveys
Real-time monitoring	Central dashboards for MoSPI & States
Massive workforce	VLEs deployed across 6+ lakh villages & census towns

Significance of the 8th Economic Census

- Create an **updated national frame of establishments (NFE)**
- Estimate:
 - Total number of non-farm enterprises
 - Type of economic activity (based on NIC codes)
 - Ownership (private/public, household/non-household)
 - Number of workers (including hired workers)
- Identify **informal sector size**
- Support sample design for future surveys (Annual Survey of Unincorporated Sector Enterprises, MSME surveys)

What Does the Census Cover?

Covered:

- Manufacturing units
- Trade & retail shops
- Hotels, restaurants

- Professional services
- Home-based enterprises
- Self-employed workers
- Small and micro businesses
- Online/digital service providers

Not Covered:

- **Crop production**
- Pure households without economic activity
- Illegal/unregistered activities that cannot be enumerated

Benefits-

For Policy-Making

- Helps identify **MSME clusters**
- Supports schemes like **PMEGP, Mudra, StandUp India**
- Inputs for **GDP (particularly unorganised sector)**
- Helps understand employment distribution in non-farm economy

For Planning

- Assists States/UTs in industrial policy, local business promotion, and skill development planning.

For Statistical System

- Foundation for **business register**, improving future surveys' accuracy.

Challenges Faced

- Variability in skills of CSC enumerators
- Difficulty in identifying **home-based enterprises**
- Underreporting of informal or seasonal units
- Inconsistent validation across states
- COVID-19 disruptions (affecting finalization of results)

Why is the 8th Economic Census in News?

The **8th Economic Census (EC-8)** has been in the news recently due to the following key developments:

1. **Delay in Final Release of Results-** MoSPI has **not yet released the national-level final results** of EC-8, even though **fieldwork began in 2019 and was largely completed by 2021**.

This delay has been widely discussed because:

- Several **policy decisions and surveys depend on updated enterprise data**
- India needs a **fresh National Business Register**
- EC-8 data is required for the **Annual Survey of Unincorporated Sector Enterprises, MSME policy, and employment studies**

Thus, the delay has raised concerns about the **timeliness and reliability of India's statistical system**, making headlines in economic policy discussions.

2. **MoSPI's Move to Revise / Validate Enumerated Data**

MoSPI announced that many states and districts need **fresh verification**, as inconsistencies were found in early EC-8 data collected through CSC enumerators.

This has brought EC-8 back in news as:

- Data quality concerns are being addressed

- A **revised and validated dataset** is being prepared
- Expected release timeline is now pushed further

3. Discussions on Informal Sector Data Gaps

Economic experts and policymakers have highlighted that **India lacks updated information on the informal sector**, which contributes nearly **45–50% of employment**.

EC-8 is crucial for this, and its **pending release** has become a major talking point in:

- Parliamentary questions
- Economic advisory discussions
- Policy analysis articles

This has kept the EC-8 in the spotlight.

4. Relevance to GDP Measurement & IMF Observations

Recently, the **IMF flagged concerns about India's statistical systems**, especially regarding:

- Outdated base years
- Incomplete coverage of informal sector enterprises
- Need for updated enterprise-level data

The **8th Economic Census is directly linked** to improving GDP estimates for unorganised sector.

Therefore, media reports and experts have stressed that **finalizing EC-8 is essential**, which is why it is frequently mentioned in the news.

5. Preparation for the 9th Economic Census

MoSPI has initiated groundwork for the **9th Economic Census**, but EC-8 results are not finalized yet.

This unusual overlap between two census cycles has become a discussion point.

“A Fifth of World Imports Now Affected by Tariffs: WTO”

- According to the **World Trade Organization (WTO)**, imports worth about **USD 2,640 billion — roughly one-fifth (≈11.1%) of total global imports — are currently affected by tariffs and trade-restrictive measures** introduced between mid-October 2024 and mid-October 2025.
- This coverage of tariffs has **more than quadrupled** from the previous period when only USD 611 billion of imports were affected.

Why This Is Significant

The sharp increase reflects **growing protectionism and trade tensions** among major economies, reversing decades of tariff reductions under global trade liberalisation frameworks

Key underlying developments include:

- **Increased tariff impositions** by major economies (e.g., U.S.) on a variety of imports, including steel, aluminum and energy products, affecting trade flows worldwide.
- WTO Director-General noted that tariff coverage has risen significantly compared with a year ago (from about 12.6% to nearly 19.7% of global imports).
- Alongside restrictive measures, **some trade-facilitating actions** were also introduced, indicating a mixed global trade policy environment.

Key Terms Explained

Tariffs- A **tariff** is a tax or duty levied on **goods imported** into a country. Governments use tariffs:

- To **protect domestic industries**,
- To generate **revenue**,
- Or sometimes as **retaliatory measures** in trade disputes.

Tariffs can make imported goods **more expensive**, affecting demand and global supply chains.

Why the Increase in Tariffs Matters

1. Increased Protectionism

Many countries have introduced new tariff measures, often as **retaliatory or strategic trade policy tools**, slowing the pace of trade liberalisation.

2. Impact on Global Trade Growth

Tariff escalation can adversely affect **global export growth**, supply chains, and investment flows, weakening international trade links.

3. WTO's Role Under Scrutiny

The rise in tariff usage has raised concerns about the **relevance of the WTO and multilateral trade rules**, especially as major economies resort to unilateral protectionist policies.

Implications for India

- **Indian Exports:** Higher tariffs in partner countries can make Indian goods **less competitive abroad**, affecting sectors like textiles, engineering goods and chemicals.
- **Trade Policy Response:** India may use WTO mechanisms to **challenge unfair tariff actions** (similar to recent WTO notifications on retaliatory duties).
- **Manufacturing & Supply Chains:** Tariffs on intermediate inputs may **raise production costs** in sectors like electronics and pharmaceuticals.

India-Russia Annual Summit

23rd India-Russia Annual Summit Held in New Delhi

- **Russian President Vladimir Putin** visited India on **December 4–5, 2025** on an official state visit for the **23rd India-Russia Annual Summit** with **Prime Minister Narendra Modi**.
- **16 agreements/MoUs were signed** covering defence, trade, economy, healthcare, etc. — including trade cooperation elements.
- Leaders agreed to **fast-track the Free Trade Agreement with the Eurasian Economic Union (EAEU)**.
- Both countries set a **bilateral trade target of USD 100 billion by 2030** (from ~USD 68.7 billion in 2024-25).

Why this matters:

These MoUs and agreements signify a broadening of the India-Russia partnership **beyond traditional defence ties** into areas such as economic cooperation and people-to-people exchanges — a shift that reflects contemporary bilateral priorities.

Strategic Partnership and New Initiatives

a. Reinforcing a Special and Privileged Strategic Partnership

- The summit marked the **25th anniversary** of the **India-Russia Strategic Partnership** (first declared in 2000 and elevated to “Special & Privileged Strategic Partnership” in 2010).

b. Fast-Tracking a Free Trade Agreement

- Both sides recommitted to **fast-tracking negotiations on a Free Trade Agreement (FTA)** between India and the **Eurasian Economic Union (EAEU)** to deepen trade and market access.

c. Economic Cooperation Roadmap

- Leaders emphasized cooperation through the **Programme for the Development of Strategic Areas of Economic Cooperation till 2030**, targeting a **bilateral trade of USD 100 billion by 2030**.

Wider Areas of Cooperation Covered

According to comprehensive post-summit assessments:

a. Defence and Military

- Continued defence cooperation and a shift toward **joint research & co-production of advanced defence systems** with emphasis on **Make in India** and co-manufacturing.

b. Connectivity & Strategic Geography

- Agreements on transport and connectivity including:
 - **International North-South Transport Corridor (INSTC)**
 - **Chennai-Vladivostok Maritime Route**
 - **Northern Sea Route (Arctic)**Cooperation extends to training specialists for polar navigation.

c. Civil Nuclear & Space

- Expanded cooperation in nuclear energy (including the **Kudankulam Nuclear Power Plant**) and space technology between **ISRO and Roscosmos**.

Digital & People-to-People Elements

- Visa facilitation measures were announced, including **free 30-day e-tourist and group visas for Russian citizens**, enhancing tourism and cultural exchange.
- Agreements on labour mobility and employment cooperation were touched upon, aimed at boosting **skilled worker engagement**.

Geopolitical & Strategic Significance

The summit also occurred against a **complex global backdrop**:

- **India's policy of strategic autonomy**: reaffirming defence and energy cooperation despite global pressures, especially in the context of the **Russia-Ukraine war**.
- **Balancing relations**: India maintaining strong ties with Russia while also engaging with the West and negotiating trade deals with other major partners.

Current Trade Relationship (No Comprehensive FTA Yet)

Bilateral Trade Status

- India–Russia **do not yet have a full-fledged Free Trade Agreement (FTA)** directly between the two countries alone.
- However, **negotiations are ongoing** for a **Free Trade Agreement with the Eurasian Economic Union (EAEU)** — a regional bloc led by Russia (includes Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia). This deal would benefit India–Russia trade as Russia is the largest EAEU partner.

Recent Summit Outcome (2025) – Trade Agreements & Targets

Key Trade-Related Points from the Joint Statement:

- Address **tariff and non-tariff barriers** affecting bilateral trade.
- Enhance **logistics, connectivity, and payment systems** (including national currency settlements).
- Promote **long-term supplies** (e.g., fertilizers, energy).

Institutional & Mechanism Framework

India-Russia Inter-Governmental Commission on Trade

- The **India-Russia Inter-Governmental Commission on Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC)** is the main forum shaping trade cooperation.

Market Access & Non-Tariff Issues

- India has pushed for **greater market access** for goods like pharmaceuticals, machinery and engineering products in Russia and the EAEU — reflecting ongoing negotiations.

Major Trade Features (No FTA Yet)

Bilateral Trade Composition

- India's trade with Russia is highly **import-heavy**, dominated by **crude oil and petroleum products**, fertilizers, and minerals.
- Indian exports include **agri-products, chemicals, pharmaceuticals, machinery, and textiles**.

Oil & Energy Partnership

- A major component of trade remains **energy imports**, often negotiated through commercial contracts.
- Recent agreements include assurances for **uninterrupted Russian oil supplies** during geopolitical tensions.

Rupee Depreciation

- The **Indian rupee fell to a record low**, touching **₹90.43 per USD** in early trade (Dec 2025), according to market reports.

What is Rupee Depreciation?

- When the rupee **loses value against the US dollar**, meaning **more rupees are required to buy one dollar**.
- This happens under a **market-determined (floating) exchange rate system**.

Example:

₹80 → ₹90 per USD = **depreciation**.

Reasons for Recent Depreciation

1. Strong Global US Dollar

- Dollar strengthened due to **global monetary conditions**, putting pressure on emerging market currencies.

2. High Dollar Demand in India

- Importers, especially **oil refiners**, purchased more dollars (India imports ~85% of crude).

3. Foreign Portfolio Outflows

- FPIs sold Indian assets → bought dollars → rupee weakened.

4. Widening Trade Deficit

- India's **imports > exports** → increased dollar demand.

5. Uncertainty in India-US Trade Talks

- Reuters noted lack of progress in trade negotiations added to sentiment-driven depreciation.

6. General Risk-Off Global Environment

- Investors moved capital to the US → weakening EM currencies including the rupee.

RBI's Response

1. No Fixed Target for the Rupee

- RBI Governor stated:
"RBI does not target a specific rupee level. The exchange rate is market-determined."

2. Intervention to Prevent Excessive Volatility

- RBI sold dollars from forex reserves.
- Conducted **FX swaps** and **OMOs** to stabilize markets.

3. Adequate Forex Reserves

- RBI emphasised that reserves are sufficient to handle **external shocks**.

4. Inflation Not Impacted Significantly

- RBI stated depreciation is **not materially affecting inflation**, as global crude prices remain moderate.

Implications of Depreciation

A. Positive

- Exports may become more competitive** (cheaper for foreign buyers).

B. Negative

- Costlier imports** (oil, electronics, machinery).
- Imported inflation** risk.
- Higher expenses for:
 - Foreign education
 - Overseas travel
 - Foreign loan repayments.

Masala Bonds

Masala Bonds are rupee-denominated bonds issued outside India, where:

- The issuer is Indian,
- The bond is issued in offshore markets, and
- The borrowing is in Indian Rupees (INR), not in foreign currency.

Currency risk is borne by the investor, not the Indian issuer.

Introduced by: RBI in 2014 under the **External Commercial Borrowings (ECB) framework**.

Named "Masala" to popularize Indian culture globally (similar to Dim Sum Bonds of China).

Who Can Issue Masala Bonds? (RBI Framework)

- Indian companies
- Indian banks (in certain cases)
- Infrastructure companies / NBFCs
- Municipal corporations (e.g., Pune Municipal Corporation issued masala bonds)
- Multilateral agencies (IFC was the first issuer on behalf of Indian use)

Where Are They Issued?

- Issued in international capital markets such as- London Stock Exchange, Singapore Exchange and Other offshore markets

Why Were Masala Bonds Introduced? (Objectives)

❖ Reduce Currency Risk for Indian Borrowers

Since borrowing is in INR, Indian companies are protected from rupee depreciation.

❖ Diversify Funding Sources

Access global investors → reduces dependence on domestic banks.

❖ Support Infrastructure Financing

RBI designed Masala Bonds to attract long-term debt for infra projects.

❖ Promote the Internationalization of the Rupee

Boost the global use of INR in finance and trade.

❖ Stabilize External Debt Profile

Debt raised does **not** create external currency liability.

How Do Masala Bonds Work?

- Issued abroad → Investors pay in foreign currency
- Borrower repays in INR
- Investors bear **exchange-rate fluctuations**

If rupee depreciates- Investor gets lower returns → issuer unaffected

If rupee appreciates- Investor benefits

Regulatory Framework (RBI + SEBI)

RBI Guidelines

- Minimum maturity:
 - 3 years for small issues
 - 5 years for amounts > USD 50 million per year
- End-use restrictions apply (ECB norms)
- All-in-cost ceiling linked to government securities yield
- Must comply with KYC norms and eligibility of foreign investors

SEBI Rules

- For listing Masala Bonds overseas
- Disclosure and reporting norms for Indian issuers

Benefits of Masala Bonds

For India

- Promotes rupee as a global currency
- Reduces external debt risk
- Attracts foreign investment
- Supports government & municipal financing

For Investors

- Exposure to **Indian growth story**
- Higher yields compared to developed markets
- Diversification into emerging market rupee assets

Risks / Challenges

For Investors

- High **currency risk** (rupee depreciation reduces returns)

- Emerging market volatility

For India

- Limited demand in weak rupee periods
- Offshore investors require high yields → increases borrowing cost
- Complex compliance rules

Examples / Case Studies

- **IFC issued the first Masala Bond** in 2014 (₹1,000 crore equivalent).
- **HDFC, NTPC, IRFC, NHAI** have all raised funds via Masala Bonds.
- **Pune Municipal Corporation** issued masala bonds to fund civic infrastructure — India's first municipal Masala Bond.

Why Masala Bonds in News? (Contextual Update for UPSC)

- Increased use of **rupee-denominated offshore bonds** amid global interest in emerging market debt.
- RBI periodically revises **ECB and Masala Bond norms** to attract more investors.
- India's push for **Rupee internationalization** post-2022 has renewed focus on Masala Bonds.
- Discussions on including rupee bonds in global indices indirectly revived interest.

India-US Tax Treaty

Recent reports highlight that **Indians returning from the United States**—including professionals, retirees, or remote workers—**may face higher taxes on their US income** because **certain tax treaty benefits may no longer apply as before**.

Key change: The US has clarified its interpretation of the tax treaty with India, especially concerning individuals with "**Resident but Not Ordinary Resident**" (RNOR) status under Indian tax rules.

What Is the India-US Tax Treaty?

- India and the US have a **Double Taxation Avoidance Agreement (DTAA)** to avoid taxing the same income twice and promote cross-border economic activity.
- The treaty specifies which country can tax various categories of income and at what **withholding tax rates** (e.g., dividends, interest).

Under DTAA, taxpayers normally pay tax in one country but receive **credit or reduced rates** under the treaty to avoid double taxation.

Who Is Affected? RNORs

- India classifies individuals for tax purposes as:
 - **Resident & Ordinary Resident (ROR)**
 - **Resident but Not Ordinary Resident (RNOR)**
 - **Non-Resident Indian (NRI)**
- **RNOR** status is a transitional category for people returning to India after living abroad.
- Under Indian rules, an RNOR is usually taxed only on Indian-sourced income, not on global income.
- **The issue:** The US may cease to recognize RNOR individuals as Indian tax residents for treaty purposes, because India doesn't tax their foreign income. This could make RNORs ineligible for **reduced treaty withholding rates**.

What Could Change? (Treaty Impact)

Before (Treaty Benefit)

- Indians returning as RNORs could benefit from **lower US withholding tax rates** (e.g., ~15–25% on dividends or interest) under DTAA.
- India didn't tax their US income due to RNOR status.

After (Potential Change)

- **The US may treat them as non-resident taxpayers** for treaty purposes if they aren't considered tax residents under Indian law.
- This means **higher US withholding tax rates** (~30%) on:
 - **Dividends** from US stocks or mutual funds
 - **Interest** (e.g., bank deposits)
 - **Royalties** (e.g., digital/creative earnings)

Economic & Personal Finance Impact

- **Higher tax liabilities** for returning Indian professionals, retirees, or digital nomads.
- People may need **revised financial planning** (timing of return, investment choices, repatriation of income).

Policy & Bilateral Tax Relations

- Raises questions about:
 - how **residence status is defined for treaty purposes**
 - the alignment of **OECD tax treaty interpretations**
 - the interaction between domestic tax law and treaty benefits.

What Is DTAA?

- A **Double Taxation Avoidance Agreement** prevents the same income being taxed in two countries.
- Provides clear rules on taxing rights and reduced tax rates for cross-border income.

Benefits

- **Reduced withholding taxes** on dividends, interest, royalties.
- **Tax credits** to offset taxes paid abroad.
- **Certainty and predictability** for cross-border investors.

India-US DTAA

- One of India's key tax treaties, signed to promote investment and mobility of professionals.

India's Aviation Sector

India's largest airline **IndiGo** has been in the news due to **widespread flight cancellations and operational chaos**, disrupting domestic and some international travel. This crisis has drawn intense scrutiny of aviation operations and regulation in India.

What Happened ?

a) New Pilot Duty & Rest Rules Trigger Problems

- The **DGCA's (Directorate General of Civil Aviation)** new **Flight Duty Time Limitations (FDTL)** norms came into effect in phases in 2025, tightening rules on:
 - pilot rest periods,

- limits on night flights,
- maximum duty hours.
- IndiGo **failed to adequately plan for the new crew requirements**, leading to a significant **pilot shortage** relative to its operations.

b) Thousands of Flights Cancelled

- Between early December and the present, thousands of IndiGo flights were **cancelled**, stranding tens of thousands of passengers and hurting airline schedules nationwide.

Regulator (DGCA) Responses

- **Temporary Exemptions Granted-** The DGCA granted IndiGo a **temporary one-time exemption** from certain aspects of the FDTL norms — especially some **night operation restrictions** — valid until early 2026, to help stabilise operations.
- **Flight Reductions Ordered-** The DGCA also directed IndiGo to **cut about 5 % of its flight schedule**, especially on high-frequency domestic routes, to better match its available crew and reduce further cancellations.
- **DGCA Intensifies Oversight-** Regulatory personnel were **deployed at IndiGo headquarters** to oversee day-to-day operations including crew utilisation, scheduling, and passenger services.

India's Aviation Landscape

Overview & Significance

India's aviation market is one of the **fastest-growing globally**, and now the **world's 3rd-largest domestic aviation market** after the US and China.

Importance for India

- Critical for **connectivity & regional development**
- Supports **tourism, trade, cargo, investment**
- Enables **Tier-2 and Tier-3 city integration**
- Creates large-scale **employment** (direct + indirect)
- Enhances **strategic capabilities** (airports, airspace management)

Key Institutions in India's Aviation Sector

1. Ministry of Civil Aviation (MoCA)

- Policy-making body
- Oversees airlines, airports, aviation safety, regional connectivity programs

2. DGCA (Directorate General of Civil Aviation)

- Regulator for:
 - Flight operations
 - Airworthiness
 - Pilot licensing
 - Safety oversight
 - Crew duty norms (FDTL)
- Conducts audits and compliance checks
- Recently strengthened under the **Bharatiya Vayuyan Adhiniyam, 2024**

3. BCAS (Bureau of Civil Aviation Security)

- Handles aviation security standards
- Manages airport security, anti-hijack protocols

4. AAI (Airports Authority of India)

- Manages most Indian airports
- Also responsible for **air navigation services (ANS)**
- Implementing airport modernization

5. Private Airport Operators

- GMR Group, GVK, Adani Group
- Increasing role due to PPP models (e.g., Delhi, Mumbai, Lucknow, Ahmedabad, Jaipur)

Major Government Schemes & Policies

1. UDAN (Ude Desh Ka Aam Nagrik) – Regional Connectivity Scheme

- Launched in 2016
- Aims to make flying affordable
- Connects unserved/underserved airports
- Uses Viability Gap Funding (VGF)
- Transformative for Tier-2 and Tier-3 connectivity

2. National Civil Aviation Policy (NCAP) 2016

- Comprehensive policy framework
- Introduced flexible 5/20 rule
- Boosted cargo, MRO, and skill development

3. Bharatiya Vayuyan Adhiniyam, 2024

- Replaced the Aircraft Act, 1934
- Enhances DGCA powers
- Aligns with ICAO standards
- Includes stricter safety & operational norms

4. Air Cargo Logistics Promotion Policy

- Focus on airports as cargo hubs
- Promotes cold-chain, perishable cargo movement

5. Airport PPP Models

- Many airports handed to private players
- Improved passenger experience & infrastructure

Structural Characteristics of India's Aviation Sector

1. Dominance of Low-Cost Carriers (LCCs)

- 75%+ domestic market share
- IndiGo, SpiceJet, Akasa Air
- Leads to price-sensitive market dynamics

2. High Operational Costs

- Aviation turbine fuel (ATF) taxes are high
- Airport charges & leasing costs significant
- Aircraft maintenance costs high due to overseas dependencies

3. Market Concentration

- IndiGo controls nearly 60% of domestic routes

- Creates risk of systemic disruption—as seen in the 2025 IndiGo crisis

4. High Vulnerability to External Conditions

- ATF price volatility
- Global macroeconomic shocks
- Pilot shortages
- Rupee depreciation → higher aircraft leasing cost

Challenges in India's Aviation Sector

A. Financial Instability

- Many airlines historically bankrupt (Kingfisher, Jet Airways, GoFirst issues)
- High fixed costs, thin margins

B. Shortage of Skilled Workforce

- Pilots, engineers, ATC staff in short supply
- Overburdened systems → safety concerns

C. Infrastructure Gaps

- Major metros overcapacity
- Tier-2 airports need upgrading
- Night operations and parking constraints

D. Safety Oversight Pressure

- India under watch of ICAO audits
- High flight density → more pressure on DGCA surveillance

E. High ATF Taxes

- ATF under State VAT
- Causes fuel costs in India to be 30–40% higher than global averages

F. Rising Competition from Gulf & SE Asian Hubs

- Dubai, Doha, Singapore dominate international traffic
- Indian carriers struggle to develop hub model

Recent Developments (Dynamic Updates)

1. IndiGo Operational Crisis (2025)

2. Expansion of Airlines

- New entrants like **Akasa Air**
- Air India (Tata Group) undergoing major fleet expansion
- IndiGo expanding into long-haul international routes

3. Green Aviation Push

- Sustainable Aviation Fuel (SAF) trials
- Airport solarization
- Carbon-neutral airport initiatives (Cochin example)

4. Airport Development

- Noida International Airport
- Navi Mumbai Airport
- Jewar, Hollongi, and other greenfield projects

RBI Cuts Repo Rate to Sustain 'Goldilocks Phase'

On **5 December 2025**, the **Reserve Bank of India's (RBI) Monetary Policy Committee (MPC)** unanimously cut the **policy repo rate by 25 basis points (bps)** — from 5.50% to 5.25%. This brings the total cuts in 2025 to 125 bps.

RBI Governor **Sanjay Malhotra** described India's macroeconomic conditions as a **"rare Goldilocks phase"** — reflecting strong growth and low inflation simultaneously.

The RBI also announced **liquidity support** measures, including open market purchases of government securities (around ₹1 lakh crore) and dollar-rupee FX swaps (~\$5 billion).

- The **repo rate** is the interest rate at which the **RBI lends short-term funds to commercial banks** under the **Liquidity Adjustment Facility (LAF)**. A reduction in the repo rate usually lowers bank lending rates and stimulates credit growth.
- A Goldilocks phase refers to a macroeconomic situation that is "just right" — neither too hot (high inflation) nor too cold (slow growth):
 - **Inflation** — low and stable, below RBI's target band.
 - **Growth** — strong and resilient.
 - **Policy space** — RBI can support growth without inflation fears.

India's economy currently exhibits this mix:

- Record low inflation (e.g., ~0.25% in October 2025).
 - Strong growth projections — RBI raised real GDP forecast to ~7.3% for 2025-26.
- This rare balance gave RBI room for a rate cut.

Why RBI Cut the Repo Rate (Policy Logic)

1. Low Inflation Creates Policy Space

- CPI inflation fell well below the RBI's target range (2–6%), giving RBI the leeway to ease rates without stoking inflation.

2. Strong Growth Outlook

- Despite global headwinds like tariffs and currency volatility, India's **domestic demand and growth momentum remain robust**.

3. Support for Domestic Demand

- Lower interest rates can boost consumption and investment — especially critical as global demand weakens.

4. Pre-Emptive Strengthening

Some analysts interpret the move as a **pre-emptive buffer** — strengthening liquidity to improve resilience ahead of potential external shocks (termed a "Liquidity-for-Resilience Cycle").

Major Immediate Effects

❖ On Borrowers

- Lower **EMIs** for home, auto, and personal loans as banks reduce lending rates.

❖ On Financial Markets

- Positive equity market reactions (Sensex, Nifty gains) following the rate cut.

❖ On Liquidity

- Large OMO purchases and FX swaps enhance system liquidity, supporting credit flow.

RBI's Monetary Policy Stance

- **Neutral stance** retained — RBI isn't committing to only cuts or hikes but will react to data.

- Focus remains on anchoring inflation, supporting growth, and managing rupee volatility.

NOTE- Goldilocks phase and Neutral stance are not the same. They refer to different concepts in macroeconomics and monetary policy.

1. Goldilocks Phase — State of the Economy

A **Goldilocks phase** refers to the **macroeconomic condition** of an economy where things are “just right”:

- **Growth = Strong**
- **Inflation = Low & stable**
- **External environment = Stable enough**
- **Demand = Healthy**
- **No overheating, no slowdown**

It is a **description of the economic situation**, not a monetary stance.

RBI called India’s 2025 macroeconomic environment a Goldilocks phase because:

- Inflation is below target
- Growth remains robust
- Corporate and banking balance sheets are healthy
- External stability is manageable

2. Neutral Stance — Monetary Policy Position

A **neutral stance** refers to **how the RBI plans to use interest rates** going forward.

- **RBI is not biased toward cutting rates**
- **RBI is not biased toward raising rates**
- **It will decide based purely on future data**

It indicates **flexibility**, not commitment.

This is the stance used by the RBI’s **Monetary Policy Committee (MPC)**.

Key Difference

Aspect	Goldilocks Phase	Neutral Stance
Type	Economic condition	Monetary policy signal
Indicates	Balanced inflation & growth situation	RBI’s future rate direction is open
Used by	Economists / Analysts / RBI to describe economy	MPC when announcing policy
Outcome	Allows policy flexibility	No bias toward tightening or easing

RBI Example (Dec 2025)

- RBI said India is in a “**rare Goldilocks phase**” → describing the economy.
- RBI cut the repo rate and kept a **neutral stance** → describing its policy approach.

Thus:

A Goldilocks phase allows a neutral stance or even rate cuts, but A neutral stance does not mean the economy is in a Goldilocks phase.

Health Security se National Security Cess Bill, 2025

The **Health Security se National Security Cess Bill, 2025** has been introduced and passed by both Houses of Parliament and is now under legislative consideration and implementation:

- The Finance Minister clarified that the cess will be levied only on harmful/demerit goods and not on essential commodities.

- Revenue will be shared with states (especially for health spending), reflecting cooperative federalism principles.

What Is the Health Security & National Security Cess?

A **cess** is a tax on tax levied for a specific purpose (earmarked for particular expenditures), and is collected in addition to other taxes like GST or excise duties.

This Bill introduces a targeted, capacity-based cess on the manufacturing/production capacity of specified demerit goods (initially pan masala). The cess is intended to provide a reliable revenue stream for two national priorities:

- **Health Security** – Strengthening public health systems and infrastructure
- **National Security** – Supporting defence needs, modernisation, and preparedness

Key Features of the Bill

1. Coverage

- Initially applies to **pan masala** manufacturers.
- Government may notify additional goods if necessary.

2. Levy & Basis

- Cess is levied on machines or processes used in manufacturing — capacity-based (e.g., machine speed/pack weight) or a flat rate for manual production.

3. Revenue Use

- Proceeds go to the **Consolidated Fund of India**, and are earmarked for:
 - **National security expenditure** (defence modernisation, equipment, strategic readiness)
 - **Public health infrastructure and services**

4. Enforcement & Administration

- Bill provides detailed administration, monitoring, penalties, and appellate mechanisms to ensure compliance.

5. Federalism Aspect

- A portion of revenue will be shared with the States, especially for health-related usage. This is notable as most cesses are not normally divisible with states.

Why the Government Says It's Needed

• Dedicated Funding

The government is creating a stable and predictable revenue source for:

- **National defence priorities** (modern, capital-intensive systems)
- **Health security**, especially post-pandemic public health strengthening

Finance Minister emphasised that national security and health together require sustained funding, especially in a world of evolving threats and expensive technologies.

• Demerit Goods

Pan masala — a product linked to significant health costs and burden — is targeted to both discourage harmful consumption and raise revenue without burdening essential goods.

Debates & Criticisms

1. Language/Clarity Objections

Opposition MPs raised concerns over the Bill's Hinglish title ("Health Security se National Security Cess"), calling for committee scrutiny.

2. Scope & Implementation Concerns

Critics argue the Bill may:

- create administrative compliance challenges, and
 - raise legal or classification disputes given capacity-based levies.
- Experts note potential litigation around overlapping tax authorities and definitions.

3. Equity & Impact Debates

- Some lawmakers questioned whether cesses should be narrowly focused on harmful goods or broader public goods.
- Others asked how revenue sharing with states aligns with fiscal federalism.

Constitutional Basis of Cess

Article 270- Cess can be levied for specific purposes by Parliament. MOST cesses are **not part of the divisible pool** shared with states.

Finance Commission Context

- Cesses reduce the divisible tax pool → states often object.
- Report of 15th Finance Commission notes rise in cess/surcharges reduces state resources.

Article 271- Parliament can levy a **surcharge or cess** for Union-specific needs.

Budget Transparency Rules

- All cess collections go to the **Consolidated Fund of India (CFI)** first → then appropriated for the intended purpose through parliamentary approval.

Cess vs. Tax vs. Surcharge (Differences)

Feature	Cess	Tax	Surcharge
Purpose	Specific (earmarked)	General revenue	Additional revenue for Centre
Shared with States?	Usually NO	Yes (divisible pool)	No
Duration	Temporary/Need-based	Permanent	Not necessarily temporary
Example	Health Security Cess	Income Tax	Surcharge on Income Tax

Regulatory Framework & Administration

1. Who Levies?

- **Union Government** under Constitution (Art 270/271), Finance Acts / Sectoral Acts

2. Who Collects?

- Collected through:
 - GST system (for GST cesses like Compensation Cess)
 - Excise or Customs departments
 - Other statutory mechanisms (e.g., capacity-based cess under Health Security Cess Bill)

3. Who Regulates Use?

- **Parliament:** votes appropriations for using cess proceeds
- **CAG:** audits utilisation
- **Ministries:** implement the specific scheme funded by the cess

4. Rules Ensuring Transparency

- Cess receipts categorized under **Non-Tax Revenue** in budget
- Ministry must show:
 - amount collected
 - amount transferred to dedicated fund
 - amount spent

Types of Cesses in India

A. Production/Manufacturing Based

- Coal cess (Clean Energy Cess, now GST Compensation Cess)
- Pan masala/tobacco cess (various forms across years)

B. Consumer-Based Cesses

- Education Cess
- Secondary & Higher Education Cess
- Swachh Bharat Cess
- Krishi Kalyan Cess

C. GST Compensation Cess

- Levied on luxury/sin goods to compensate states for GST revenue loss (2017–2026).

D. New Cesses (2024–25 onward)

- **Health Security se National Security Cess**
 - Targeted at demerit goods
 - Revenue to health and defence sectors

Crypto Transactions Surge in India

- **Cryptocurrency transactions in India crossed ₹51,000 crore in FY 2024-25**, marking a **41 % year-on-year increase** over FY 2023-24, according to data presented by the **Finance Ministry in the Rajya Sabha**.
- This surge was inferred from **Tax Deducted at Source (TDS)** data: ₹511.8 crore was collected at the 1 % TDS rate imposed on crypto transfers.

Transaction Growth (India, FY 2024-25)

Fiscal Year	Estimated Crypto Transaction Value	Y-o-Y Growth
2022-23	~₹22,130 crore	—
2023-24	~₹36,270 crore	~64 %
2024-25	~₹51,180 crore	~41 %

Cryptocurrencies are digital assets using blockchain technology allowing **peer-to-peer transactions** without central intermediaries.

- They are treated as **Virtual Digital Assets (VDAs)** under Indian tax law.
- TDS at **1 %** on transfers of VDAs was introduced in the **Finance Act, 2022** and continued in the **Income Tax Act, 2025**, which provides a proxy for estimating transaction volumes.

Why Are Transactions Surging in India?

1. Growing Adoption

- India ranks high globally in cryptocurrency adoption and is often recognized as a top market in APAC for crypto transactions and grassroots usage.

2. Increasing Investor Participation

- Crypto investors in India are expanding beyond metros, with rising participation in **Tier-2/Tier-3 cities**, diversified portfolios, and interest in DeFi, altcoins and blockchain tech.

3. Derivatives & Futures Trading

- Futures trading volumes have surged faster than spot transactions domestically, driven by leverage opportunities and tax considerations.

4. Tax Reporting Making Transactions More Visible

- The 1 % TDS helps **capture transaction flows**, even if unreported otherwise, providing more official visibility into volumes.

Regulatory Framework in India

Taxation

- Crypto gains are taxed at **30 %** (plus cess & surcharge) under the **Income Tax Act**.
- **1 % TDS/Tax Collected at Source (TCS)** on transfers of VDAs helps track activity.

Not Regulated as Currency

- Cryptocurrencies are **not legal tender** in India; only the **Rupee is legal tender**.
- RBI historically warned against crypto as payments instruments; however, the Government continues **taxation and visibility** measures.

Recent Enforcement

- Enforcement actions have uncovered irregularities on some crypto exchanges and entities for non-compliance and undisclosed income from crypto-related transactions.

Risks, Concerns & Law Enforcement

1. Cybercrime Cases

- Multiple crypto-related financial scams and fraud syndicates have been busted, including large scams involving shell accounts and social media recruitment, underscoring **cybercrime vulnerabilities** in the crypto ecosystem.

2. Tax Compliance & Under-Reporting

- High crypto volumes pose **tax compliance challenges**, given the potential for evasion and difficulty in tracing decentralized transactions.

3. Price Volatility

- Crypto markets are highly volatile, posing **risk to investors** and potential spillovers into speculative bubbles.

4. Regulatory Ambiguities

- Absence of a comprehensive regulatory framework for exchanges, custodial services, and consumer protection remains a key concern.

Global Context (Adoption & Transaction Growth)

- India is among the **top countries for crypto adoption**, often leading associated global indices alongside the U.S., indicating intense grassroots engagement with digital assets.
- Globally, retail crypto transactions have surged significantly, with South Asia (including India) showing strong growth trends.

Export Promotion Mission (EPM)

The **Government of India** has recently announced that it is **revamping and fast-tracking the Export Promotion Mission (EPM)** to boost India's export competitiveness amid:

1. Global trade slowdown & rising protectionism

- WTO reports show nearly **one-fifth of global imports now face tariffs**, affecting export-dependent economies like India.
- India is reworking export strategies to safeguard export growth despite external challenges.

2. India's Target of \$2 Trillion in Exports by 2030

- The government is restructuring export promotion to meet ambitious targets:
 - **\$1 trillion in merchandise exports**
 - **\$1 trillion in services exports**

3. Focus on State-led Export Promotion

- Commerce Ministry recently pushed **all states & UTs** to update:
 - **District Export Plans**
 - **State Export Strategies**
 - Infrastructure & logistics plans under PM Gati Shakti

4. Integration with PM Gati Shakti & National Logistics Policy

- Export Promotion Mission is being linked with:
 - National Logistics Policy
 - PM Gati Shakti multimodal connectivity to reduce logistics costs (current ~13–14% of GDP).

5. Sector-specific push

The government has shortlisted **10–12 high-potential export sectors** (pharma, electronics, EVs, textiles, marine, agri-products), and the EPM is being realigned to support these.

Thus, **EPM is in news** as a central part of India's renewed export push amid global uncertainties.

Expected Impact

- Boost India's export competitiveness
- Reduce logistics cost from 13–14% → global benchmark of 7–8%
- Increase MSME participation in global markets
- Improve India's share in global value chains
- Create employment & economic diversification

About the Export Promotion Mission (EPM)?

The **Export Promotion Mission** is a coordinated national framework launched by the **Department of Commerce** to:

- streamline export promotion activities
- unify state and central efforts
- reduce logistics & compliance barriers
- improve India's export competitiveness
- meet long-term export targets

It is an **umbrella mission** under the **Foreign Trade Policy (FTP)**.

Objectives of the Export Promotion Mission

1. Increase India's Global Market Share- India's contribution to global trade is still <2%. EPM aims to raise this significantly.

2. Support Export Growth Across Sectors

Especially:

- electronics

- pharmaceuticals
- agri & food processing
- engineering goods
- textiles
- marine products

3. Strengthen Districts as Export Hubs (DEH)

- Encourage one-district-one-export product (ODOP)
- Build local export ecosystems

4. Improve Ease of Doing Business for Exporters

- single-window systems
- reduced documentation
- digital trade facilitation

5. Build World-Class Logistics Infrastructure

- multimodal transport
- port modernization
- cold chain & warehousing
- aligning with National Logistics Policy

Institutional Mechanism Under EPM

1. Export Promotion Councils (EPCs)

- Industry-led bodies coordinating export strategy per sector
- Work with Commerce Ministry

*2. District Export Hubs

- DEH committees under District Collectors
- Identify bottlenecks
- Prepare District Export Action Plans

3. State Export Promotion Committees

- To implement State Export Strategy
- Improve logistics efficiency

4. Centre-State Coordination Mechanism

- Joint reviews by Commerce Ministry
- Real-time dashboards for monitoring

Key Components of the Export Promotion Mission

1. Market Access Strategy

- New FTAs
- Expansion in Africa, Middle East, Latin America
- Deeper ASEAN + G20 linkages

2. Export Credit Support

- ECLGS-type schemes for exporters
- Interest equalization schemes
- EXIM Bank financing

3. Technology & Quality Standards

- Upgrading certification labs

- Promoting zero-defect manufacturing
- Compliance with global quality standards

4. Trade Facilitation & Digitalization

- Unified logistics portal
- Paperless trade systems
- Faster customs clearance

5. Skill Development

- Export-oriented skilling programs
- MSME capacity building programs

Hybrid Mutual Funds

Hybrid mutual funds in India are **gaining traction among investors** because:

- **Equity markets are at or near record highs**, reducing the appeal of pure equity funds.
- Investors seek **balanced risk–return profiles** by combining equity upside with debt stability.
- Hybrid funds offer **automatic asset allocation** between stocks and bonds, making them attractive in uncertain markets where valuations appear high.

About Hybrid Mutual Funds

A **hybrid mutual fund** is an investment product that **invests in a mix of asset classes**, typically:

- **Equities (stocks)**
- **Debt instruments (bonds, corporate papers)**
- Sometimes **money market instruments or gold**

These funds aim to deliver:

- **Growth potential** (via equities), and
- **Income stability / risk mitigation** (via debt).

Types of Hybrid Funds

Category	Typical Equity Allocation	Objective
Conservative Hybrid Funds	~10–25%	Stability with a small equity component
Balanced Hybrid Funds	~40–60%	Balanced risk-return
Aggressive Hybrid Funds	~65–80%	Equity-like returns with debt cushion
Dynamic Asset Allocation / Balanced Advantage Funds	Varies	Fund manager adjusts equity/debt based on markets
Multi-Asset Allocation Funds	≥3 asset classes	Further diversification
Equity Savings Funds	Equity with arbitrage & debt	Lower volatility equity exposure

How Hybrid Funds Work

1. **Equity Portion**
 - Aims for capital appreciation over the long term.
2. **Debt Portion**
 - Aims for stability and income
 - Includes government securities, corporate bonds, or money market instruments.
3. **Fund Manager's Role**

- Asset allocation decisions (especially in dynamic/balanced advantage funds) help capture opportunities while controlling risk.

Benefits of Hybrid Funds

- ❖ **Diversification in a Single Fund**
 - Exposure to both equity and debt reduces unsystematic risk.
- ❖ **Smoother Returns**
 - Debt holdings can cushion volatility during market dips.
- ❖ **Suitable for Mid-Risk Investors**
 - Middle path between pure equity and pure debt funds.
- ❖ **Professional Management**
 - Managed by SEBI-regulated mutual fund managers.

Risks & Considerations

- ❖ **Market Risk**
 - Equity component still subjects returns to stock market fluctuations.
- ❖ **Interest Rate Risk**
 - Debt portions are affected by interest rate movements.
- ❖ **Performance Varies by Category**
 - Conservative hybrids behave more like debt funds; aggressive hybrids behave more like equity funds.
- ❖ **Costs**
 - Expense ratios can be higher due to multi-asset management.

Regulatory & Institutional Context

SEBI (Securities and Exchange Board of India)

- Regulates mutual funds and hybrid fund categories.
- Sets asset allocation norms and disclosure requirements.

AMFI (Association of Mutual Funds in India)

- Industry body promoting best practices.

Taxation

- Tax treatment follows equity vs debt categorization (e.g., equity-oriented hybrid funds are taxed like equity funds for capital gains).
 - Equity gains: long-term >1 year taxed at 10% (above ₹1 lakh).
 - Debt gains: long-term >3 years taxed at 20% with indexation (if debt-oriented).
(Exact rates subject to prevailing tax laws.)

INDIAN SOCIETY

Jiyo Parsi Scheme

Launched: 2013–14

Ministry: Ministry of Minority Affairs

Objective: Address declining Parsi population.

Components:

1. Medical assistance for infertility treatment
2. Community health support
3. Advocacy & awareness programmes

Implementation:

- Funds transferred via **DBT**.
- Supported by State Governments & Parsi institutions.

National SC-ST Hub (NSSH) Scheme

Ministry: MSME

Implemented by: NSIC

Objectives:

- Promote SC/ST entrepreneurship.
- Enable participation in public procurement.

Key Focus Areas:

- Capacity building
- Market access
- Credit facilitation
- Skill development & mentoring
- Achieve **4% procurement target** under Public Procurement Policy

Veer Bal Diwas

- Observed on **26 December** since 2022.

Significance:

- Commemorates martyrdom of **Sahibzada Zorawar Singh & Sahibzada Fateh Singh**.
- Younger sons of **Guru Gobind Singh**.
- Executed in 1704 for refusing to renounce faith.

ART AND CULTURE

Uchi Pillaiyar Temple

- Tamil Nadu government informed Madurai Bench, Madras High Court
- Ritual of lighting deepam at Uchi Pillaiyar Temple on Thirupparankundram Hill continued this year → uninterrupted for 150+ years

About Uchi Pillaiyar Temple

- Also known as Rockfort Temple, Trichy, Tamil Nadu
- 7th-century CE, dedicated to Lord Ganesha
- Summit height: 83 metres (272 ft) above ground

Geological Significance

- **Rockfort Hill:** granite ~3.8 billion years old, one of oldest rock formations on Earth

Historical Development

- **Excavation:** Pallava period
- **Expansion:** Nayaks of Madurai, Vijayanagara Empire

Temple Complex on Rockfort Hill

1. Maanikka Vinayakar Temple – foothill, Lord Ganesha
2. Uchi Pillaiyar Temple – summit, Lord Ganesha
3. Thayumanaswamy Temple – partway, Lord Shiva

Cultural and Visual Importance

- **Panoramic view:** Trichy city, Srirangam Temple, River Kaveri & Kollidam
- **Significance:** religious, historical, cultural, geological heritage

Chenchu Tribe

- Forest-dwelling PVTG primarily inhabiting Nallamalai forests (Andhra Pradesh).
- Also found in Telangana, Karnataka, Odisha.
- Language: Regional variants of Telugu.

Social & Cultural Features:

- Settlements called **Penta** (kinship-based hamlets).
- Village head: **Peddamanishi**.
- Subsistence based on forest produce, hunting with bows & arrows.

Religious Beliefs:

- Indigenous beliefs with Hindu elements.
- Traditional association with **Ahobilam & Srisailam Temple**.

Santhali Language Added to the Constitution

1. Introduction

Santhali is one of the major indigenous languages of eastern India, spoken predominantly by the Santhal (Santal) tribal community. Its inclusion in the Eighth Schedule of the Constitution of India marked an important step in recognising tribal languages as integral to India's linguistic and cultural mosaic.

2. Constitutional Recognition

Santali was added to the Eighth Schedule through the **92nd Constitutional Amendment Act**.

- **Year of enactment:** 2003
- **Came into force:** 2004
- **Along with:** Bodo, Dogri and Maithili

This amendment expanded the Eighth Schedule from **18 to 22 languages**, formally granting Santali constitutional status.

3. What Does Inclusion in the Eighth Schedule Mean?

Being part of the Eighth Schedule does not make a language “national” or “official” by itself, but it provides institutional and symbolic recognition, including:

- Eligibility for promotion and development by the Union
- Representation in institutions such as:
 - Sahitya Akademi
- Use in:
 - Competitive examinations
 - Official communications where permitted
- Greater visibility in education, literature and media

4. Linguistic and Cultural Background of Santali

- **Language family:** Austroasiatic (Munda branch)
- **Primary regions:**
 - Jharkhand
 - West Bengal
 - Odisha
 - Parts of Bihar, Assam and Chhattisgarh
- **Speakers:** Several million, making it one of the largest tribal languages in India

Santali has a rich oral tradition—folklore, songs, myths and community narratives—closely tied to forest ecology, agrarian life and collective memory.

5. Ol Chiki Script and Language Modernisation

A key milestone in Santali’s linguistic development was the creation of the **Ol Chiki script** in the 1920s by **Raghunath Murmu**.

- Designed specifically for Santali phonetics
- Strengthened written literature and education
- Played a crucial role in:
 - Standardisation of the language
 - Advocacy for constitutional recognition

Today, Santali is written in **Ol Chiki**, as well as in **Devanagari, Bengali and Odia scripts** in different regions.

6. Political and Social Movement Behind Inclusion

The constitutional inclusion of Santali was not merely a legislative act but the outcome of:

- Decades of tribal cultural movements
- Demands for linguistic dignity and identity
- Assertion of Adivasi rights within the constitutional framework

- Support from regional political mobilisation, especially in the **Chotanagpur and Santhal Pargana regions**

Recognition of Santali also coincided with broader debates on tribal autonomy, statehood movements, and cultural federalism.

7. Broader Constitutional Significance

The inclusion of Santali reflects:

- Inclusive constitutionalism: Recognition of non-Indo-Aryan and non-Dravidian languages
- Shift from elite language dominance to plural linguistic justice
- Alignment with:
 - Cultural rights
 - Protection of minority identities
 - Democratic accommodation of diversity

It reinforced the idea that the Constitution is a living document, capable of evolving with social realities.

Cultural Identity and Dignity

Language recognition goes beyond communication—it affirms:

- Historical presence of tribal communities
- Equality of cultures within the Indian Union
- Respect for indigenous knowledge systems

For Santhal communities, constitutional recognition of Santali represents symbolic justice and cultural affirmation.

Ho Tribe

- Also known as **Kolha**.
- Located in **Kolhan region of Jharkhand & Odisha**.

Cultural Features:

- Language: Ho (Munda group); meaning of “Ho” = human.
- Occupation: Agriculture & mining.
- Religious belief: **Sarnaism**.
- Priest: **Deuri**.
- Cultural space: **Akhra**.

Narsapuram Lace Craft

- Practised in **Narsapur, Andhra Pradesh**.
- Highlighted in **Mann Ki Baat**.

Features:

- 150-year-old crochet tradition.
- Uses fine cotton, silk & synthetic threads.
- Products: Doilies, cushion covers, table linens.

Recognition:

- Granted **Geographical Indication (GI) status**.
- Survived famines & Great Depression.

Dandami Madia Tribe (Bison Horn Maria)

- Located mainly in **Chhattisgarh**.
- Part of the broader **Gond cultural tradition**.

Distinctive Features:

- Named after bison-horn-shaped ceremonial headgear.
- Language: Dandami Madia; some speak **Gondi (Dravidian)**.
- Economy: Agriculture, hunting & fishing.

Social System:

- **Ghotul** (youth dormitory) for socialisation.
- Divorce & widow remarriage permitted.

Culture:

- **Bison Horn Maria dance** performed by men & women.
- Religious beliefs blend Hinduism & animism.

Jallikattu**1. Introduction**

Jallikattu is a traditional bull-taming sport practised predominantly in the Indian state of Tamil Nadu during the harvest festival of Pongal. The event involves participants attempting to hold onto a bull's hump and subdue it for a specified distance or duration. More than a sport, Jallikattu is closely associated with Tamil cultural identity, agrarian life, and the preservation of native cattle breeds.

2. Historical and Cultural Background

- **Ancient roots:** References to bull-taming appear in Sangam-era Tamil literature (circa 300 BCE–300 CE), where valor, masculinity, and bravery were celebrated through interaction with cattle.
- **Agrarian significance:** Native bulls were integral to ploughing, breeding, and rural economy. Jallikattu traditionally served as a method to identify strong bulls for breeding.
- **Social role:** The event historically functioned as a community gathering, reinforcing local customs, marriage alliances, and village prestige.

3. Nature and Forms of Jallikattu

Commonly practised variants include:

- **Vaadivaasal:** Bulls are released one at a time through an entry gate.
- **Vadam Manjuvirattu:** Bulls are tethered to a long rope and participants attempt to tame them.
- **Eruthu Vidum Vizha:** A more open-field form where bulls run freely.

Each form reflects regional adaptations but shares the core element of human–animal interaction.

4. Legal and Constitutional Context

a) Prevention of Cruelty to Animals Act, 1960

- Central legislation aimed at preventing unnecessary pain or suffering to animals.
- Became the principal legal framework under which Jallikattu was scrutinised.

b) Supreme Court Judgment (2014)

In *Animal Welfare Board of India v. A. Nagaraja*, the Supreme Court of India banned Jallikattu. The Court held that:

- Bulls are not anatomically suited for such performances.
- Practices violated animal welfare principles under the 1960 Act.
- Animal welfare was linked to Article 21 (Right to Life), extending to animals.

c) State Response and 2017 Developments

- Massive public protests across Tamil Nadu framed Jallikattu as an issue of cultural rights and identity.
- The Tamil Nadu government promulgated an ordinance, later replaced by an amendment to the 1960 Act, allowing Jallikattu under regulated conditions.
- Presidential assent was obtained, bringing the law into force in 2017.

d) Supreme Court Review (2023)

A Constitution Bench upheld the Tamil Nadu Amendment Act, recognising:

- Legislative competence of the state.
- Cultural significance of Jallikattu.
- The state's claim that adequate safeguards could minimise cruelty.
- The Court clarified that cultural practices are not immune, but can be permitted if regulated and legislatively backed.

5. Ethical and Animal Welfare Debate

Supporters argue:

- Jallikattu ensures survival of indigenous cattle breeds such as Kangayam and Pulikulam.
- Bulls used are reared with care and respect, not slaughtered.
- The event strengthens rural economy and cultural continuity.

Critics argue:

- Physical stress, fear, and injury to animals remain concerns.
- Use of irritants and coercive techniques has been documented.
- Cultural justification should not override animal welfare principles.

This debate reflects a broader tension between tradition and modern ethical standards.

6. Indigenous Cattle Conservation Angle

- India has witnessed a decline in native cattle breeds due to mechanisation and cross-breeding.
- Jallikattu is often projected as an incentive-based system encouraging farmers to rear native bulls.
- Conservationists, however, stress that scientific breeding programmes, not sporting events alone, are essential for long-term sustainability.

7. Administrative Framework and Regulation

Post-2017, Tamil Nadu framed detailed rules and guidelines covering:

- Registration of bulls and owners
- Veterinary health checks before and after the event
- Barricaded arenas and double-layer security
- Prohibition of alcohol, sharp objects, or irritants
- Mandatory presence of medical and animal welfare teams

In 2026, the Tamil Nadu government further refined Standard Operating Procedures (SOPs) to:

- Strengthen monitoring mechanisms
- Introduce digital registration and CCTV surveillance
- Fix accountability on district administrations and organisers

8. Contemporary Relevance

- Annual conduct of Jallikattu at venues like Alanganallur and Palamedu under strict supervision.
- Ongoing judicial scrutiny through pending petitions questioning enforcement quality.
- Renewed discussions on balancing cultural federalism with uniform animal welfare norms.
- Increasing use of technology and data-driven oversight to reduce accidents.

9. Broader Constitutional and Societal Themes

- **Culture vs. Reform:** How evolving constitutional morality engages with traditional practices.
- **Federalism:** State autonomy in legislating on cultural matters within central legal frameworks.
- **Rights discourse:** Expansion of rights beyond humans to animals, and its practical limits.
- **Public participation:** Role of mass movements in shaping legislative and judicial outcomes.

10. Conclusion

Jallikattu today exists at the intersection of tradition, law, ethics, and governance. Its journey—from ancient ritual to constitutional controversy—illustrates India's complex negotiation between preserving cultural heritage and adapting to contemporary values of compassion and rights. The evolving regulatory framework suggests that the future of Jallikattu will depend not merely on legal permission, but on the credibility and effectiveness of safeguards ensuring dignity for both humans and animals.

ENVIRONMENT & ECOLOGY

Bioremediation

India's Emerging Environmental Challenge

India is currently dealing with a severe environmental crisis created by years of unchecked waste disposal, industrial discharge, pesticide build-up, oil leakages, and contamination by toxic heavy metals. The scale and complexity of pollution have made traditional clean-up approaches increasingly ineffective and unsustainable.

What is Bioremediation?

Bioremediation refers to the use of biological agents—such as microorganisms, fungi, algae, or plants—to detoxify polluted environments. The term essentially means *restoring damaged ecosystems through biological processes*.

These living agents break down or transform hazardous substances like petroleum products, pesticides, plastics, and heavy metals into harmless compounds.

Microbes use pollutants as a nutrient source and convert them into simpler end-products such as carbon dioxide, water, or organic acids. Certain organisms can even convert metallic toxins into stable, non-reactive forms.

Major Bioremediation Approaches

1. In Situ Bioremediation

- Treatment is carried out *directly at the contaminated location*.
- A common example is the use of hydrocarbon-degrading bacteria released over oil spills at sea.

2. Ex Situ Bioremediation

- Polluted soil or water is excavated, transported to a controlled facility, treated, and then restored to the site.
- This method is suitable for treating complex or mixed contaminants with greater precision.

Modern bioremediation integrates traditional microbiology with cutting-edge biotechnology. Advanced molecular tools help identify highly efficient microbes and allow scientists to engineer strains suited for specific conditions such as agricultural fields, effluent streams, or municipal sewage.

Synthetic biology innovations include:

- Genetically modified microbes capable of digesting stubborn pollutants like plastics and oil residues.
- Biosensor organisms that glow or change colour when they detect environmental toxins, enabling real-time monitoring.

Why Bioremediation is Crucial for India

Rapid industrial expansion and urban growth have severely damaged India's water bodies, soil health, and ecosystems.

The Ganga, Yamuna, and several other rivers suffer from heavy pollution loads, while untreated sewage, chemical effluents, pesticide residues, and oil leaks continue to accumulate.

Conventional clean-up methods—thermal treatment, chemical neutralisation, or mechanical extraction—are expensive, energy-heavy, and often generate secondary pollution.

Bioremediation offers a sustainable alternative because it is:

- Cost-effective

- Scalable
- Less energy-intensive
- Environmentally friendly

India's rich biodiversity further strengthens its potential. Indigenous microbial species—already adapted to high temperature, salinity, or acidity—often perform better than imported strains in local conditions.

India's Progress in Bioremediation

Although still evolving, bioremediation efforts in India have gained momentum through several initiatives:

Government Initiatives

- The **Department of Biotechnology (DBT)** supports multiple projects under its Clean Technology Programme, promoting collaboration between industry, academia, and research institutions.
- **CSIR-NEERI** continues to lead national efforts in developing and implementing bioremediation technologies across polluted sites.

Research Breakthroughs

- IIT researchers have developed cotton-based nanocomposites to absorb and remove oil spills.
- Indian scientists have discovered microbial species capable of degrading persistent soil contaminants.

Start-up Ecosystem

A growing number of start-ups now specialise in microbial formulations for wastewater treatment, solid waste processing, and contaminated soil cleanup, indicating rising commercial adoption.

Global Landscape of Bioremediation

- **Japan** employs plant-microbe strategies in urban waste management.
- The **European Union** funds cross-country programmes to restore mining sites and clean oil spills.
- **China** uses engineered microbes to rehabilitate industrially degraded lands under its soil protection initiatives.

These international models demonstrate how bioremediation can be seamlessly integrated into national environmental policies.

Future Possibilities for India

Bioremediation can significantly enhance India's environmental initiatives, especially in:

- River rejuvenation projects (e.g., Namami Gange)
- Sewage treatment and waste management systems
- Industrial and mining site restoration
- Land reclamation programmes

It also opens up employment and innovation opportunities in:

- Biotechnology research
- Environmental consultancy
- Waste management services
- Start-up ventures based on microbial solutions

Risks and Regulatory Concerns

While bioremediation is promising, it comes with challenges—particularly when genetically modified organisms are involved.

Unregulated release or poor risk assessment can disrupt local ecosystems.

India currently faces:

- Absence of uniform national guidelines,
- Limited site-specific baseline data,
- Inadequate biosafety standards,
- Shortage of trained professionals.

The Way Forward

For bioremediation to be mainstreamed across India, the following steps are essential:

- Developing national-level standards, protocols, and certification systems.
- Creating regional hubs to connect universities, industries, and local authorities for project implementation.
- Supporting innovation-driven start-ups under schemes like DBT-BIRAC.
- Educating and involving communities to build trust in bio-based clean-up methods.

Fluoride

A recent assessment by an NGO has highlighted severe fluorosis cases in several villages of **Mayurbhanj district, Odisha**, caused by **excessive fluoride levels in drinking water**. The findings raise concern over long-term public health impacts in the region.

About Fluoride

Fluoride is an inorganic, negatively charged ion (F^-) derived from the highly reactive element fluorine, which does not exist in free form in nature.

Although required only in very small amounts, fluoride plays an important biological role. Nearly **99% of the body's fluoride is stored in bones and teeth**, where it contributes to their strength and structural stability.

Sources of Fluoride

- Fluoride makes up around **0.3 g per kg of the Earth's crust**, most commonly occurring in minerals such as **fluorspar, cryolite, and fluorapatite**.
- It is naturally present in various foods and is also available as a **dietary supplement**.
- Soils, groundwater, plants, and food products often contain trace quantities of fluoride.
- Industrial uses include:
 - **Aluminium manufacturing**
 - **Fluxing agent** in steel and glass fibre industries
 - Released during the production of **phosphate fertilizers, bricks, tiles, and ceramics**

These processes can contribute to environmental fluoride contamination.

Health Impacts of Fluoride**1. Dental Fluorosis**

- Occurs primarily in children exposed to high levels of fluoride.
- Leads to **mottling, staining, or discolouration of teeth**.

2. Skeletal Fluorosis

- Results from long-term ingestion of fluoride-rich water.
- Causes **bone deformities, joint stiffness, pain**, and reduced mobility.

Both conditions are chronic and preventable, making safe drinking-water management crucial for vulnerable communities.

World Soil Day

World Soil Day 2025 highlights the growing urgency of restoring soil health, especially as rapid urban expansion and mounting environmental pressures degrade soil quality across cities worldwide.

About World Soil Day (WSD)

Observed every year on **5 December**, World Soil Day aims to raise global awareness about the critical role soil plays in sustaining life and to promote sustainable practices for managing soil resources.

History and Evolution

- The concept of dedicating a global day to soil stewardship was first introduced in **2002** by the **International Union of Soil Sciences (IUSS)** to draw international attention to soil conservation.
- Backed by the **Food and Agriculture Organization (FAO)** and championed by the **Kingdom of Thailand**, the proposal gradually gained global support.
- In **2013**, the **United Nations General Assembly** officially designated **December 5** as World Soil Day, and the first global observance took place in **2014**.

World Soil Day 2025 Theme

The 2025 theme—“**Healthy Soils for Healthy Cities**”—shifts the narrative from the well-discussed agricultural soils to the often neglected **urban soil ecosystems**.

It emphasises the role of soil in city planning, ecosystem resilience, pollution control, water retention, and the overall health of urban communities.

UN Environment Assembly (UNEA-7)

The **seventh session of the United Nations Environment Assembly (UNEA-7)** is currently being held in **Nairobi, Kenya**. The assembly serves as a key global platform for discussing and shaping collective responses to emerging environmental challenges.

About the UN Environment Assembly (UNEA)

The **UN Environment Assembly** is the **highest global decision-making body on environmental issues**. It enjoys **universal membership of all 193 UN Member States**, along with the active participation of major stakeholder groups.

The assembly convenes **once every two years** in **Nairobi, Kenya**, and brings together **environment ministers from across the world** to deliberate on critical environmental priorities.

Background

UNEA was established in **2012** following the outcomes of the **UN Conference on Sustainable Development (Rio+20)** held in **Brazil**. It was created to strengthen global environmental governance under the United Nations system.

Functions of the UN Environment Assembly

UNEA performs several key roles in global environmental governance:

- **Sets the global environmental agenda** and provides broad **policy direction**.

- **Reviews environmental policies**, promotes dialogue, and facilitates the **exchange of best practices among countries**.
- Offers **strategic guidance** on the future direction of the **United Nations Environment Programme (UNEP)**.
- **Mobilises partnerships and financial resources** for achieving global environmental goals.

Organisational Structure

The assembly is guided by a **UNEA Bureau**, which consists of:

- **One President**
- **Eight Vice-Presidents**

Together, they steer the functioning and proceedings of the assembly.

Theme of the Seventh UN Environment Assembly (2025)

The theme of **UNEA-7 (2025)** is: “**Advancing Sustainable Solutions for a Resilient Planet.**”

This theme reflects the global emphasis on building environmentally resilient societies through sustainable policy interventions.

New Ramsar Sites

Recently, **Siliserh Lake** in **Alwar, Rajasthan**, and **Kopra Jalashay** near **Bilaspur, Chhattisgarh**, have been recognised as **Wetlands of International Importance under the Ramsar Convention**, highlighting their ecological significance.

Siliserh Lake (Rajasthan)

Location & Background

Siliserh Lake is situated in **Rajasthan** and lies within the **buffer zone of the Sariska Tiger Reserve**. It is an **artificial (human-made) lake**, constructed in **1845** by **Maharaja Vinay Singh** to meet the drinking water needs of **Alwar city**.

Ecological Significance

Located in a **semi-arid region**, the lake plays a crucial role as a dependable water source for wildlife and local biodiversity.

Fauna

- The wetland supports around **149 species of birds** and **17 species of mammals**.
- It provides habitat to important species such as the **vulnerable River Tern** and the **endangered Tiger**.
- The site is also ecologically significant as it supports **more than 1% of the biogeographic population of the Black Stork (*Ciconia nigra*)**, a key criterion for Ramsar designation.

Kopra Jalashay (Chhattisgarh)

Location & Hydrology

Kopra Jalashay is located in **Chhattisgarh**, near **Bilaspur**, and is a **reservoir in the upper catchment of the Mahanadi River**. The wetland is marked by strong **hydrological and ecological linkages**, which help sustain diverse habitats in and around the area.

Ecological Importance

Its connectivity within the river basin supports rich wetland ecosystems, making it vital for both resident and migratory species.

Fauna

- The site provides nesting, feeding, and stopover grounds for **over 60 species of migratory birds**.
- Notable species include the **vulnerable Greater Spotted Eagle (*Aquila clanga*)** and the **endangered Egyptian Vulture (*Neophron percnopterus*)**.

Carbon-Based Filter for PFAS Removal from Groundwater

A recent **field-based scientific study** has shown that an **engineered carbon material** can be injected into the subsurface to **capture and immobilise PFAS** from contaminated groundwater. This method offers a **cost-effective, long-term, and minimally invasive solution** for remediating polluted sites.

What are PFAS (Per- and Polyfluoroalkyl Substances)?

- PFAS are a **large group of more than 4,700 synthetic chemicals**, commonly referred to as **“Forever Chemicals”** due to their **extreme persistence** in the environment.
- They have been **widely produced since the 1950s** and are used in products such as:
 - Non-stick cookware
 - Water-repellent textiles
 - Food packaging
 - Cosmetics
 - Firefighting foams (AFFF)
 - Industrial lubricants and metal coatings
- The exceptional stability of PFAS arises from the **carbon-fluorine (C-F) bond**, one of the **strongest covalent bonds in chemistry**, making these compounds highly resistant to natural degradation.
- As a result, PFAS contamination is widespread, particularly in **groundwater near military bases, industrial zones, and municipal landfills**.

What is Carbon-Based PFAS Remediation?

- **Carbon-based PFAS remediation** is a **novel in-situ groundwater treatment technique**, demonstrated in a **2025 field study published in the *Journal of Hazardous Materials***.
- The study tested a specially engineered **ultra-fine carbon material**, known as a **Colloidal Carbon Product (CCP)**, designed to **adsorb and immobilise PFAS molecules** underground.

How the Technology Works

- It uses a **“push-pull” testing approach**:
 - CCP is **injected into the subsurface**, creating a **permeable reactive treatment zone**.
 - Groundwater is later extracted to assess the **reduction in PFAS concentration**.
- Unlike conventional surface-based treatment systems (e.g., pump-and-treat), this method is:
 - **Non-intrusive**
 - **Subsurface-based**
 - Suitable for **long-term containment and remediation**

Key Findings from Field Trials

- Field experiments conducted at a **U.S. Navy training facility** demonstrated:
 - PFAS concentrations reduced by **up to four orders of magnitude**

- Levels declined from **over 50,000 ng/L to below detectable limits** within **10 months**
- The technology proved effective against both **long-chain and short-chain PFAS**, which is a major challenge for many existing treatment methods.

Tundra Ecosystem

A recent study from **Arctic Alaska** reveals that tundra wildfires have shown **greater activity in the last century** than at any point in the past **3,000 years**, indicating rapidly changing ecological conditions due to warming climates.

About the Tundra Ecosystem

The **tundra biome** is a cold, treeless landscape found in **Arctic regions** and **high mountain tops**, marked by severe winds, extremely low temperatures, and very low rainfall.

Key Characteristics of the Tundra

1. Extremely Low Temperatures

- Average temperatures range from **-34°C to -6°C** (-30°F to 20°F).

2. Short Growing Season

- Summers last only **50-60 days**, with sunlight often present for **24 hours a day**.

3. Presence of Permafrost

- Beneath the surface lies **permafrost**, a permanently frozen soil layer that can be several inches to meters thick.

4. Low Precipitation

- The biome receives **minimal moisture**, mostly as snow, making it similar to **polar deserts** in terms of dryness.

5. Limited Biodiversity

- Only a small range of hardy plant and animal species can survive the harsh climatic conditions.

6. Major Carbon Storage

- Slow decomposition in cold conditions makes the tundra a **significant global carbon sink**.

Types of Tundra in the World

1. Arctic Tundra

- Located **north of the taiga belt**, stretching from the **North Pole** to the boreal forest.
- Found in **Canada, Russia, Greenland, Iceland, Norway, Sweden, and Finland**.

2. Alpine Tundra

- Occurs **above the tree line** in major mountain ranges such as the **Himalayas, Andes, Rockies, and Alps**.

3. Antarctic Tundra

- Found on **sub-Antarctic islands** and **ice-free regions of Antarctica**.

Flora

- Typical vegetation includes **mosses, lichens, sedges, cotton grass, dwarf birches**, and other low-growing plants.

Fauna

- Characteristic animals include the **Arctic fox, polar bear, snow geese**, and other species adapted to extreme cold.

Chillai-Kalan

With Kashmir expecting a fresh spell of rain and snow, the region is entering the peak winter phase known as **Chillai Kalan**, a period associated with extreme cold and heavy precipitation.

What is Chillai-Kalan?

- **Chillai-Kalan** refers to the **harshest 40-day winter stretch** in the Kashmir Valley.
- The term comes from **Persian**, meaning “**Major Cold.**”
- This period begins on **December 21** and ends on **January 30** every year.

Key Features of Chillai-Kalan

- Marks the **coldest and most severe** phase of winter in Kashmir.
- Characterised by:
 - Widespread **snowfall**
 - **Sub-zero temperatures**
 - Frequent **cold waves**
 - Increased chances of **freezing water bodies**

Subsequent Winter Phases

Chillai-Kalan is followed by two shorter phases of winter:

1. Chillai-Khurd (20 days) – “Small Cold”

- From **January 31 to February 19**
- Brings **moderate cold** compared to Chillai-Kalan.

2. Chillai-Bacha (10 days) – “Baby Cold”

- From **February 20 to March 2**
- Represents the **last phase** of winter, with gradually easing temperatures.

Cultural Significance

- As per Persian traditions, **21st December** is celebrated as:
 - **Shab-e-Yalda** – “Night of Birth”
 - **Shab-e-Chelleh** – “Night of Forty”
- These observances mark the **winter solstice** and the longest night of the year.

Environmental Importance

- Heavy snow during Chillai-Kalan **recharges water sources** in the mountains.
- This accumulated snowmelt sustains **rivers, lakes, and streams** across Kashmir during the summer months, maintaining ecological balance and water availability.

BIODIVERSITY

Rhinophis siruvaniensis – Latest Discovery

A new species of shieldtail snake, *Rhinophis siruvaniensis*, has recently been identified from the Siruvani Hills, a biodiverse region spread across Kerala and Tamil Nadu in the Western Ghats. Notably, the discovery was made with the active involvement of citizen scientists, highlighting the growing role of public participation in biodiversity documentation.

About *Rhinophis siruvaniensis*

- It belongs to the group of shieldtail snakes, which are adapted for a subterranean (burrowing) lifestyle.
- The species was recorded from the Siruvani Hill ranges, part of the ecologically sensitive Western Ghats biodiversity hotspot.
- Morphologically, the snake has a glossy appearance with a brownish-black body and creamy white markings, along with distinct dark blotches.
- The tail ends in a dome-shaped, shield-like structure, a characteristic feature of uropeltid snakes.

Shieldtail Snakes: Key Facts

- Small, non-venomous reptiles primarily adapted to life underground.
- Belong to the family Uropeltidae, commonly referred to as uropeltids.
- Name derived from the disc-shaped, hardened tail tip, aiding in burrowing and acting as a protective structure.

Distribution

- Endemic to the Indian subcontinent: India and Sri Lanka.
- In India, mainly found in the Western Ghats, along with select regions of Peninsular India.

Significance of the Discovery

- Adds to the growing list of cryptic and lesser-known reptile species of the Western Ghats.
- Reinforces the importance of habitat conservation and community-driven scientific research in biodiversity-rich landscapes.

Deodar Tree – Latest Research Insight

Recent scientific analysis of Deodar trees in the Sangla Valley, Himachal Pradesh has provided valuable evidence of long-term climatic transitions in the Western Himalayas.

Tree-ring studies indicate:

- Relatively wetter spring conditions in prehistoric times.
- Progressive shift towards drier conditions after the year 1757.

These findings underline the importance of Deodar as a natural archive of past climate variability.

About the Deodar Tree (*Cedrus deodara*)

- Commonly known as the Himalayan Cedar, culturally significant in Western Himalayas.
- Name derives from Sanskrit Devadāru – “wood of the gods”.

Geographical Distribution

- Western Himalayan region: Himachal Pradesh, Uttarakhand, Jammu & Kashmir, and adjoining areas.

Traditional and Practical Uses

- Temple architecture and sacred structures.
- Religious rituals and Ayurvedic medicinal preparations.

Threats

- Overexploitation through commercial logging
- Habitat degradation
- Increasing vulnerability due to climate change

Ecological and Botanical Characteristics

- Large evergreen conifer, important for soil stability and ecosystem regulation.
- Altitude: 1,800–3,000 metres above sea level.
- Soil & Climate: prefers well-drained soils, thrives in moist temperate climate.

Morphology

- Height: up to 50 metres
- Tall, pyramidal form with drooping branches
- Needle-like, bluish-green leaves (reduce water loss)
- Bark: dark grey → deeply fissured with age
- Cones: solitary, erect, ovoid, dark brown, monoecious

Why the Deodar Study Matters

- Acts as proxy indicator of past climate, helping reconstruct historical rainfall and temperature patterns.
- Important for:
 - Understanding long-term Himalayan climate trends
 - Assessing future climate vulnerability
 - Informing forest conservation & climate adaptation strategies

Ramban Sulai Honey

During the 128th episode of *Mann Ki Baat*, the Prime Minister highlighted the growing national visibility of **Ramban Sulai Honey** from Jammu and Kashmir. Its popularity has surged notably after it secured a **Geographical Indication (GI) tag**.

About Ramban Sulai Honey

Produced in the mountainous **Ramban district of Jammu and Kashmir**, Ramban Sulai Honey is celebrated for its distinctive flavour, delicate floral aroma, and high nutritional content.

The honey is derived from the nectar of **Sulai (wild basil)** plants, which flourish naturally in the Himalayan region.

From **August to October**, bees collect nectar from the snow-white Sulai flowers, giving this honey its characteristic sweetness and soft floral notes.

Known for its crystal-like clarity, the honey ranges in colour from pale white to golden amber and contains a rich profile of enzymes, vitamins, and minerals—contributing to its medicinal value.

The **favourable climate** and **healthy bee populations** of Ramban lead to a much higher honey yield compared to many other regions.

In **2021**, Ramban Sulai Honey was granted the **GI tag**, further acknowledging its authenticity and reputation. The Government of India has also recognised it as the district's "**One District, One Product**" (**ODOP**) item, promoting local livelihoods and marketability.

What is a Geographical Indication (GI) Tag?

A **Geographical Indication (GI)** is a type of mark or sign used to identify products that originate from a specific region and owe their unique qualities, characteristics, or reputation to that particular geographical area.

GI tags are an important component of **Intellectual Property Rights (IPRs)** and are protected internationally under:

- The **Paris Convention** for the Protection of Industrial Property, and
- The **TRIPS Agreement** under the WTO framework.

In India, the **Geographical Indications of Goods (Registration and Protection) Act, 1999** governs the registration, protection, and regulation of GI-tagged products.

Under this Act:

- Unauthorized use of a GI name or product is prohibited.
- A GI registration remains valid for **10 years**, after which it can be **renewed indefinitely**.

Some well-known Indian GI products include **Darjeeling Tea**, **Mysore Silk**, and **Kashmiri Saffron**.

Darjeeling Mandarin Orange

The **Darjeeling Mandarin Orange** has recently been granted the **Geographical Indication (GI) tag**, marking a major recognition for this iconic fruit of the Darjeeling hills.

About Darjeeling Mandarin Orange

Cultivated across the scenic hills of **Darjeeling in West Bengal**, the Darjeeling Mandarin (*Citrus reticulata* Blanco) is one of the region's most important horticultural cash crops.

It becomes the **third product from Darjeeling**—after the renowned **Darjeeling Tea** and **Dalley Khursani chilli**—to receive the GI designation.

Locally called "**suntala**", this mandarin variety is celebrated for its captivating aroma, rich flavour, and exceptional quality, making it a symbol of pride for local farmers and the hill communities.

Climatic Requirements for Darjeeling Mandarin Orange

Altitude

- Grown at elevations between **600 and 1,500 metres**.
- Mandarins thrive in frost-free tropical and subtropical areas up to similar heights above mean sea level.

Rainfall

- Requires an annual rainfall of about **100–120 cm**.

Temperature

- Ideal temperature range: **10°C to 35°C**.

Soil

- Prefers **well-drained, light to medium loamy soils**, which support optimum root development and fruit quality.

What is a Geographical Indication (GI) Tag?

A **Geographical Indication (GI)** is a label used to identify products that originate from a specific region and derive unique characteristics, quality, or reputation from that geographical environment.

GI tags are commonly associated with:

- Agricultural produce
- Food items
- Wines and spirits
- Handicrafts
- Industrial goods

In India, GI registration and protection are governed by the **Geographical Indications of Goods (Registration and Protection) Act, 1999**.

A GI certification is **valid for 10 years** and can be renewed indefinitely upon expiration.

Red-Breasted Parakeet

In a rare urban wildlife observation, **two pairs of Red-breasted Parakeets** were recently sighted on the campus of **NIT Patna** by a group of environmentalists, highlighting the growing ecological significance of urban green spaces.

About the Red-Breasted Parakeet

The **Red-breasted Parakeet**, also known as the **Moustached Parakeet**, is a vibrant and widely distributed parrot species found across several parts of Asia.

- **Scientific Name:** *Psittacula alexandri*
- It is easily recognised by its bright plumage and the distinctive **“moustache-like” facial marking**.
- The species shows **regional variation in appearance**, leading to multiple geographic forms.

Distribution

Its natural range extends from **India and Nepal** across **Southeast Asia**, including **Thailand, Vietnam, and Indonesia**.

Habitat

The species thrives in a variety of environments such as:

- **Forests and woodlands**
- **Agricultural landscapes**
- **Human settlements near towns and villages**

Physical Features

- A **medium-sized parrot**, measuring approximately **33–38 cm** in length including the tail.
- **Male characteristics:**
 - Green body plumage
 - **Pink breast and belly**
 - Grey head
 - Blue upper tail with green tail tip
 - **Red upper beak**
- **Female characteristics:**
 - Similar in appearance but **duller pink underparts**
 - **Black upper beak**

Behavioural Traits

- Highly **social birds**, usually seen in **small groups or large flocks**.
- Notably **vocal**, producing **loud squawks and screeches**, especially during flight and feeding.

Conservation Status

- Listed as **Near Threatened** on the **IUCN Red List**, indicating that the species faces risks from habitat loss and trapping in parts of its range.

Hoolock Gibbon

Recently, a **stranded family of Hoolock gibbons** was successfully **rescued by forest officials in the Lower Dibang Valley district of Arunachal Pradesh**. The rescue highlights the importance of rapid wildlife response mechanisms in ecologically sensitive regions of Northeast India.

About the Hoolock Gibbon

Gibbons are the **smallest and fastest among all apes**, inhabiting the **tropical and subtropical forests of Southeast Asia**. Among them, the **Hoolock gibbon** is one of the **20 known gibbon species globally**. Notably, the **Hoolock gibbon is the only ape species found in India**, making it zoologically and conservationally unique.

Distribution of the Hoolock Gibbon

The species is distributed across **India, Myanmar, Bangladesh, and southern China**.

Distribution in India

In India, the Hoolock gibbon is found **south of the Brahmaputra River** in the states of:

- **Assam**
- **Meghalaya**
- **Arunachal Pradesh**
- **Nagaland**
- **Manipur**
- **Mizoram**
- **Tripura**

The **Hollongapar Gibbon Sanctuary** in Assam supports the **largest population of Hoolock gibbons in the country**.

Classification of Hoolock Gibbons

The species is divided into two distinct types:

- **Eastern Hoolock Gibbon (Hoolock leuconedys)**: Found in specific regions of **Arunachal Pradesh**.
- **Western Hoolock Gibbon (Hoolock hoolock)**: Distributed across the remaining parts of **Northeast India**.

Key Characteristics

Diurnal and arboreal in nature.

Move through forest canopies by **brachiation using long arms**.

Monogamous, forming lifelong pair bonds.

Live in **small family groups** and communicate through **distinctive vocal calls**.

Average lifespan: Approximately **25 years**.

Conservation Status

According to the **IUCN Red List**:

Eastern Hoolock Gibbon: Vulnerable

Western Hoolock Gibbon: Endangered

Under Indian law, **both species are protected under Schedule I of the Wildlife (Protection) Act, 1972**, which provides the **highest level of legal protection** to wildlife species.

African Penguin

A recent scientific assessment has revealed a troubling trend: between **2004 and 2011**, more than **60,000 African penguins** died due to starvation. The primary cause was a dramatic decline in sardine populations, their main food source.

About the African Penguin

The **African penguin (*Spheniscus demersus*)** is a marine bird species native to the coastal waters of **southern Africa**.

Although it cannot fly, it is perfectly adapted to life in the ocean.

Breeding

These penguins typically nest in **burrows carved into layers of guano**—the accumulated droppings of birds, bats, or seals.

This natural shelter shields their eggs and chicks from harsh temperatures.

Physical Features

- The species is recognized by a **distinct black chest band** and a unique pattern of **black spots**, which vary from bird to bird.
- They also possess **pink glands above their eyes**, which become darker when the penguin's body temperature rises, helping them regulate heat.

Annual Moulting

African penguins undergo a **21-day moulting phase** every year.

During this time:

- They come ashore and shed old feathers.
- They cannot swim or hunt, often losing nearly **50% of their body weight**.

Habitat and Distribution

- These penguins typically remain **within 40 km of the coastline**, using various coastal areas for breeding, resting, and moulting.
- Their primary range includes the **Namibian coast** and the **Atlantic shoreline of South Africa**.

Lifespan

In natural conditions, an African penguin generally survives for **around 20 years**.

Threats

Climate-change-driven transformations in the **marine ecosystem** and **atmospheric patterns** are severely affecting their habitat and food availability.

The collapse of key fish stocks—especially sardines—has intensified the survival crisis.

Conservation Status

- **IUCN Red List: Critically Endangered**

Goniopora Coral

Scientists have recently documented a severe decline in **Goniopora coral** populations at a Great Barrier Reef site, where **extreme marine heatwaves** combined with the **unusual occurrence of Black Band Disease** have destroyed nearly **75% of the colonies**. This dual stress event highlights the increasing vulnerability of reef ecosystems to climate-induced disturbances.

Overview

Goniopora—popularly known as **flowerpot coral** or **daisy coral**—is a distinctive coral species within the **Poritidae family**. It is highly valued for its ornamental beauty, owing to its long, petal-like polyps that extend from the colony.

Appearance

- Forms colonies composed of **short, branching cylindrical structures**, mostly oval in cross-section.
- Polyps vary greatly in size, usually measuring **a few centimeters to several centimeters** across.

Habitat

- Commonly found in **lagoons** and **turbid reef environments**.
- Known for its **relative resilience to elevated temperatures**, making it one of the more thermally tolerant coral groups.

Nutrition & Photosynthesis

- Goniopora are **photosynthetic corals**, deriving part of their energy from sunlight.
- They host symbiotic **zooxanthellae (dinoflagellates)** within their tissues. These algae perform photosynthesis and supply nutrients to the coral.
- The species adapts well to **varied lighting conditions**, enabling it to survive in different reef zones.

Feeding Behavior

- Despite their photosynthetic capability, these corals are also **active predators**.
- They catch **small planktonic organisms** suspended in the water column to supplement their nutrient intake.

Black Band Disease.**What Is Black Band Disease?**

Black Band Disease (BBD) is a **rapidly progressing bacterial infection** that attacks live coral tissue.

Characteristics

- Appears as a **dark, migrating band** that slowly moves across the coral surface.
- As the band advances, it **kills the underlying coral**, leaving behind exposed white skeleton.

Distribution

- Frequently observed on **Caribbean coral reefs**, but is **rare in Australian waters**, making its emergence on the Great Barrier Reef particularly alarming.

Environmental Triggers

- Outbreaks are often associated with **nutrient pollution, runoff**, and deteriorating water quality.
- Stress from **warming ocean temperatures** can further weaken corals, increasing susceptibility.

Western Tragopan

India's population of the Western Tragopan has shown some stability due to conservation interventions such as captive breeding. However, persistent human interference and increasing fragmentation of its natural habitat continue to pose serious risks to the long-term survival of this rare Himalayan bird.

About the Western Tragopan

The Western Tragopan, also called the **Western Horned Tragopan**, is among the rarest pheasants found anywhere in the world. Owing to its striking plumage and impressive size, local communities reverently refer to it as '**Jujurana**', meaning the *King of Birds*. It is recognised as the **state bird of Himachal Pradesh**.

Behaviour and Ecology

This species is extremely shy and largely **ground-dwelling** in nature. It remains most active during **early morning and late evening hours**, moving cautiously through thick forest undergrowth. Its secretive behaviour makes sightings in the wild relatively uncommon.

Distribution

The Western Tragopan is **endemic to the north-western Himalayas**, with a very restricted range extending from **Hazara region of northern Pakistan**, across **Jammu & Kashmir and Himachal Pradesh**, up to the **western Garhwal region of Uttarakhand**.

Habitat

It inhabits **dense temperate forests**, especially areas dominated by **ringal (dwarf) bamboo**, which provide both food resources and concealment.

Diet

The bird is primarily **herbivorous**, feeding on leaves, seeds and tender shoots. It also supplements its diet with **insects and other small invertebrates**, particularly during the breeding season.

Breeding

Breeding generally takes place between **May and June**. The female lays **three to five eggs** in well-hidden nests constructed on the **forest floor**, relying on dense vegetation for protection.

Threats

Major threats to the Western Tragopan include:

- **Loss and degradation of habitat**
- **Hunting and poaching**
- **Human-induced disturbances**, such as livestock grazing
- Collection of **minor forest produce**, including medicinal plants

Conservation Status

- **IUCN Red List: Vulnerable**

Black-Capped Capuchin Monkey

Recently, **Bannerghatta Biological Park (BBP)** in Karnataka brought **eight Black-capped Capuchin Monkeys (*Sapajus apella*)** from **South Africa** as part of an **animal exchange programme**, aimed at strengthening conservation, education, and captive management practices.

About Black-Capped Capuchin Monkey (*Sapajus apella*)

The **Black-capped Capuchin**, also referred to as the **Tufted Capuchin**, is a highly intelligent New World monkey species.

Geographical Distribution

- Native to **South America**
- Widely distributed across the **Amazon River Basin**

Habitat

- Occupies a broad range of ecosystems including
 - Tropical and subtropical forests
 - Dry and sub-montane forests
 - Savannah woodlands
 - Mangrove forests

Behaviour and Ecology

- **Activity Pattern:** Primarily **arboreal** (tree-dwelling) and **diurnal** (active during the day).
- **Communication:** Uses a combination of **vocal sounds, facial expressions, body postures, touch, and olfactory signals** to interact within groups.
- **Diet: Omnivorous**, feeding on
 - Fruits, seeds, and nuts
 - Insects and small vertebrates like lizards
 - Eggs and crustaceans
- **Ecological Role:** By consuming fruits, these monkeys play an important role in **seed dispersal**, aiding forest regeneration.

Conservation Status: IUCN Red List: *Least Concern*.

New Species Discovery

Scientists have recently identified a **new species of snakehead fish**, named ***Channa bhoi***, from the state of **Meghalaya**, adding to India's growing record of freshwater biodiversity.

About *Channa bhoi*

- ***Channa bhoi*** is a **newly described species of snakehead fish** discovered in a **small hill stream near Iewmawlong village**, located in the **Ri-Bhoi district of Meghalaya**.
- The species has been named in honour of the **indigenous Bhoi community**, a sub-group of the **Khasi tribe**, who traditionally inhabit the Ri-Bhoi region.
- Taxonomically, it belongs to the "**Gachua group**" of snakehead fishes, which is noted for its **high species diversity in the Eastern Himalayan biodiversity hotspot**.

Distinctive Features

- The species can be clearly differentiated from closely related snakeheads due to its **unique colouration**.
- It possesses a **bluish-grey body** with **tiny black spots on each scale**, arranged into **eight to nine horizontal, broken rows** along the body sides.
- The **pectoral fins** show **distinctive banding patterns**, which further aid in identification.

Evolutionary Significance

- **Phylogenetic (evolutionary) analysis** has revealed ***Channa bhoi*** to be the **sister species of *Channa bipuli***, another snakehead fish native to **Northeast India**.

Biodiversity Importance

- With this discovery, the **total number of *Channa* species reported from India has increased to 26**, underlining the **rich and still-underexplored freshwater fish diversity** of the Northeastern region.

Freshwater Sponge

Scientists at the Bose Institute have recently conducted an in-depth study on freshwater sponges inhabiting the Sundarban delta. Their research highlights the remarkable ability of these organisms to serve as reliable bioindicators for detecting toxic metal contamination in aquatic ecosystems.

What Are Freshwater Sponges?

- Freshwater sponges represent **some of the earliest multicellular eukaryotic life forms**.
- They constantly filter vast amounts of water, playing a **critical role in maintaining ecological balance**.

Habitat

- These sponges thrive in **unpolluted lakes, rivers, and clear flowing streams**.
- They typically anchor themselves to **hard, submerged surfaces** such as rocks, logs or firm sediment.

Feeding Mechanism

- Being **filter feeders**, they derive nutrition from water circulating through their porous bodies.
- They also host **symbiotic algae**, which supplement their food and often give the sponge a **distinct green coloration**.

Reproduction

- Freshwater sponges reproduce **both sexually and asexually**.
- Even a small detached fragment can regenerate into a complete sponge.
- They also produce **gemmules**—durable, seed-like structures capable of surviving harsh conditions and emerging into new sponges when the environment becomes favourable.

Ecological Importance

- These organisms function as **excellent natural indicators** of water quality in freshwater and estuarine systems.
- They have the capacity to **absorb toxic metals** such as arsenic, lead, and cadmium, making them promising tools for **bioremediation**.
- Their sensitivity to pollutants makes them valuable for **long-term monitoring of environmental health**.

POLITY AND GOVERNANCE

Appointment in the Central Information Commission (CIC)

1. What is the Central Information Commission?

The Central Information Commission (CIC) is a statutory body established under the Right to Information (RTI) Act, 2005 (effective from 12 October 2005). It serves as the apex authority for adjudicating complaints and appeals where citizens are unable to obtain information from public authorities or where decision-makers have not complied with the RTI requests.

2. Composition of the Central Information Commission

The CIC consists of:

- One Chief Information Commissioner (CIC)
- Up to ten Information Commissioners (ICs)
- This full strength allows the Commission to manage its wide jurisdiction across central ministries, departments, public sector undertakings, regulatory bodies, and other central public authorities.

3. Appointment Process

a) Authority and Legal Basis

- The Chief Information Commissioner and Information Commissioners are appointed by the President of India under Section 12 of the RTI Act, 2005.

b) Selection Committee

Appointments are made on the recommendations of a high-powered committee, which includes:

- Prime Minister of India (Chairperson)
- Leader of the Opposition in the Lok Sabha
- A Union Cabinet Minister nominated by the Prime Minister
- This consultative process is intended to balance executive input and opposition representation.

c) Appointment by the President

- Based on that committee's recommendation, the President of India formally appoints the CIC and Information Commissioners.

4. Eligibility and Disqualifications

As per the RTI Act provisions:

Appointees must be persons of eminence in public life with wide knowledge or experience in areas such as:

- Law
- Science and technology
- Social service
- Management
- Journalism and mass media
- Public administration and governance

They must not be:

- Members of Parliament or state legislatures

- Holding any other office of profit
- Connected with any political party
- Engaged in any business or profession during tenure
- These criteria ensure independence and impartiality in the CIC's functioning.

5. Tenure and Conditions of Service

- The Chief Information Commissioner and Information Commissioners hold office for a term of three years from the date they assume charge.
- They are not eligible for reappointment after completing their term.
- While specific service conditions (salary, allowances) are fixed, they are protected against arbitrary alteration to maintain institutional independence.

6. Recent Appointment:

- On 15 December 2025, Raj Kumar Goyal, a retired Indian Administrative Service (IAS) officer of the 1990 batch, was sworn in as the Chief Information Commissioner of India. The oath was administered by President Droupadi Murmu at Rashtrapati Bhavan, New Delhi.
- This appointment filled the CIC post that had been vacant since September 2025 following the end of tenure of the previous Chief Information Commissioner.
- Alongside the CIC, eight new Information Commissioners were also appointed, restoring the Commission's strength and enabling it to address its long-pending backlog of cases.

7. Importance of the Appointment

- The CIC plays a central role in ensuring transparency and accountability of public authorities under the RTI framework.
- Its appointments are significant because prolonged vacancies at the leadership level have historically hampered the timely adjudication of information access disputes.
- A fully staffed Commission strengthens the citizen-state information access regime and underpins effective governance.

Supreme Court Guidelines on Child Trafficking (India)

1. Context and Judicial Emphasis

The Supreme Court of India has recognised child trafficking and commercial sexual exploitation of children as a “deeply disturbing reality” that violates fundamental human dignity and constitutional guarantees (Article 23) against trafficking and forced labour. In its recent pronouncements — particularly in December 2025 and April 2025 — the Court has issued victim-centric and procedural guidelines to strengthen judicial response to these crimes.

2. Key Guidelines Issued by the Supreme Court

A. Treatment of Victims and Their Testimony

i. Trafficked Children as “Injured Witnesses”

- Courts must treat victims of child trafficking as injured witnesses, not as accomplices or unreliable narrators.

- Their testimony deserves due weight and credibility unless there are compelling reasons to doubt it.
- Minor inconsistencies or discrepancies in testimony should not lead to automatic rejection. This recognises the trauma-induced memory issues that trafficking survivors often face.

ii. Credibility over Formality

- The Court has emphasised that a sole credible testimony of a minor victim can be enough to sustain conviction where the evidence is otherwise credible and convincing.
- Judicial evaluation must avoid stereotyped expectations of how a “normal” witness ought to behave, since trauma, fear and stigma often shape victims’ responses in unpredictable ways.

iii. Sensitivity to Vulnerability

- Judges must be mindful of the socio-economic and cultural vulnerabilities faced by trafficked children — especially those from marginalised backgrounds — and evaluate evidence with sensitivity and realism.
- Courts should avoid prejudicial assumptions based on superficial behaviour (e.g., delayed protest, hesitation) that could undermine the victim’s credibility.

iv. Minimising Secondary Victimisation

- The Court asked that the legal process not inflict additional trauma on child victims through insensitive questioning or repeated recounting of harrowing experiences.
- Safeguards should be employed (e.g., trauma-informed questioning, support persons) to reduce distress during trials.

B. Procedural and Trial-Related Directions

i. Expedited Trials

- In *Pinki v. State of Uttar Pradesh*, the Court directed High Courts to ensure that child trafficking trials are completed within six months, with courts hearing such cases on a day-to-day basis to minimise delays and justice deferred.

ii. Bail and Laxity Warnings

- In various orders, the Supreme Court has set aside bail where courts were found to be lenient, underscoring the gravity of trafficking offences and the need to prevent potential witness tampering or flight risk.

iii. State and Institutional Accountability

- The Court has criticised ineffective handling by authorities in certain states and called for stronger administrative oversight, including measures such as suspension of licences where newborn trafficking occurs (e.g., hospitals with missing infants).

3. Underlying Legal and Constitutional Framework

While the guidelines are judicially crafted, they operate within a broader legal matrix:

Article 23, Constitution of India: Prohibits trafficking in human beings and forced labour as violations of fundamental rights.

Criminal Laws:

- Bharatiya Nyaya Sanhita, 2023: Contains provisions for punishment of trafficking and related exploitation.
- Immoral Traffic (Prevention) Act, 1956: Focuses on trafficking for commercial sexual exploitation.
- POCSO Act, 2012 and JJ Act, 2015: Strengthen child protection mechanisms and care systems.

4. Rationale Behind the Guidelines

The Supreme Court's approach reflects key concerns:

- Child trafficking often involves organised syndicates exploiting vulnerabilities and using coercion, deception and violence.
- Traditional evidentiary expectations — requiring exact details or immediate resistance — often disadvantage victims who are traumatised, young, or socially marginalised.
- Delays and procedural technicalities have historically impeded justice in trafficking cases; hence, the need for time-bound and victim-sensitive procedures.

5. Impact and Contemporary Developments

- These judicial guidelines mark a shift toward victim-centric justice, prioritising victims' dignity and psychological safety within the criminal justice process.
- Lower courts have been reminded through directives to evaluate evidence realistically and avoid dismissing testimonies on minor inconsistencies.
- The judiciary's stance also encourages institutional reforms (e.g., quicker trials, monitoring compliance by High Courts and states).

6. Conclusion

The Supreme Court's guidelines on child trafficking emphasise a sensitive, realistic and victim-oriented judicial response. By treating trafficked children as injured witnesses — giving due credence to their testimony, minimizing re-traumatisation, and ensuring expedited trials — the judiciary seeks to strengthen the criminal justice response to one of the most grievous violations of child rights in India. This judicial framework complements statutory protections and underscores the constitutional promise of dignity and safety for every child.

Right to Disconnect Bill: Work, Technology and Labour Rights in India

1. Concept and Meaning

- The Right to Disconnect refers to the right of employees to disengage from work-related digital communication—such as emails, calls, messages, or online platforms—outside official working hours, without fear of disciplinary action or adverse consequences.
- The idea has emerged globally in response to digital overreach, blurred work-life boundaries, and rising workplace stress caused by constant connectivity.

2. Background: Why the Right to Disconnect Emerged

- **Digitalisation of work:** Smartphones, laptops, collaboration tools, and remote working models have made employees accessible round the clock.

- Work-from-home culture accelerated during and after the COVID-19 period, dissolving the physical separation between office and home.
- **Mental health concerns:** Continuous connectivity has been linked to burnout, anxiety, sleep disorders, and family stress.
- **Informal expectations:** Even without formal orders, employees often feel compelled to respond after hours due to hierarchical pressure or job insecurity.

3. Global Context

Several countries have recognised or legislated the Right to Disconnect:

- **France (2017):** First country to legally mandate the right, requiring companies to define after-hours communication rules.
- **Spain, Italy, Belgium:** Adopted variations through labour laws or collective bargaining.
- European Union has discussed harmonised standards on digital labour rights.

These developments influenced debates in India, especially in the IT and service sectors.

4. Right to Disconnect in the Indian Context

India currently does not have a statutory Right to Disconnect, but the issue has gained attention through:

- Parliamentary initiatives
- Labour law reform debates
- Judicial observations
- Corporate workplace policies

5. The Right to Disconnect Bill (India)

a) Introduction of the Bill

- In 2018, Supriya Sule, a Member of Parliament, introduced a Private Member's Bill titled the Right to Disconnect Bill in the Lok Sabha.
- The Bill sought to formally recognise employees' right to ignore work communication beyond working hours, except in emergencies.

b) Objectives of the Bill

- Protect mental and physical well-being of workers.
- Restore work-life balance.
- Prevent exploitation through unpaid digital labour.
- Promote healthier organisational cultures in a technology-driven economy.

c) Key Provisions (Proposed)

Employees would not be obligated to:

- Answer emails, calls, or messages after work hours.
- Engage in work-related digital communication during leave.

Employers would be required to:

- Clearly define working hours.
- Establish communication protocols.
- Avoid penalising employees for exercising the right.

- Provision for penalties or corrective mechanisms in case of violation (details subject to rules).

The Bill did not become law and lapsed, but it sparked national debate.

6. Constitutional and Legal Dimensions

- **Article 21 (Right to Life and Personal Liberty):** Interpreted by courts to include the right to health, dignity, and mental well-being.

Labour rights framework:

- Existing labour codes regulate wages, hours, and conditions but do not address digital over-connectivity explicitly.

Judicial trends:

- Indian courts have increasingly recognised mental health as a component of workplace dignity, indirectly strengthening the normative basis for such a right.

7. Relevance in Contemporary India

a) Changing Nature of Work

Growth of:

- IT and IT-enabled services
- Gig and platform work
- Remote and hybrid employment
- Informal extension of work hours without overtime compensation.

b) Gender and Family Impact

- Women employees face double burden of unpaid care work and extended digital work.
- Constant availability disproportionately affects family life and caregiving responsibilities.

c) Corporate Practices

Some Indian companies have voluntarily:

- Introduced “no-email after hours” policies.
- Encouraged delayed email delivery.
- Promoted mental-health days and wellness frameworks.
- However, these remain non-binding and uneven.

8. Concerns and Critiques

Operational challenges:

- Global teams across time zones.
- Emergency-based industries (healthcare, security, media).

Enforcement issues:

- Defining “emergency”.
- Monitoring digital communication without infringing privacy.

Gig economy exclusion:

- Platform workers often lack fixed hours or employer-employee clarity.
- These concerns suggest that any future legislation would need sector-specific flexibility rather than a one-size-fits-all approach.

9. Way Forward (Policy Perspective)

- Incorporating the Right to Disconnect within labour codes or rules, rather than a standalone law.
- Sector-wise guidelines allowing exceptions with safeguards.
- Collective bargaining and workplace-level agreements.
- Recognition of mental health as a workplace right, not merely a welfare measure.
- Awareness among employers that productivity is linked to rest, not constant availability.

Mercy Petition Rejected by the President

1. What is a Mercy Petition?

- A mercy petition is a constitutional remedy available to a convicted person—especially in cases involving the death penalty or life imprisonment—seeking clemency from the President of India or the Governor of a State.
- It represents the last legal recourse after all judicial remedies (trial, appeal, review, curative petition) are exhausted.

2. Constitutional Basis

Article 72 of the Constitution empowers the President of India to grant:

- Pardon
- Commutation
- Remission
- Reprieve
- Respite

This power applies in cases:

- Where punishment is by a court-martial
- Where the offence falls under Union law
- Where the sentence is death

At the state level, similar powers exist under Article 161 for Governors.

3. Nature of Presidential Clemency Power

- The power is executive in nature, not judicial.
- The President acts on the aid and advice of the Council of Ministers.

It is meant to serve as a humanitarian and corrective mechanism, addressing:

- Possible miscarriage of justice
- Humanitarian considerations (age, mental illness, delay)
- Public interest and societal concerns

4. Legal Position Clarified by the Supreme Court

The Supreme Court of India has consistently held that:

- Mercy powers are not absolute or arbitrary.

Decisions are subject to limited judicial review on specific grounds:

- Mala fide intent

- Irrelevant considerations
- Non-application of mind
- Inordinate delay
- Violation of constitutional principles

5. Procedure for Mercy Petition

1. Conviction and confirmation of sentence by the Supreme Court.
2. Filing of mercy petition by the convict or family.
3. Petition routed through:
 - Prison authorities
 - State government
 - Union Ministry of Home Affairs
4. Inputs sought from:
 - Trial court records
 - State government
 - Intelligence and prison reports
5. Final decision taken by the President, based on cabinet advice.
6. Rejection of Mercy Petition: What It Means

When a mercy petition is rejected by the President:

- All constitutional and judicial remedies are exhausted.
- The death warrant may be issued by the trial court.

The execution must still follow procedural safeguards, including:

- Minimum notice period
- Opportunity to meet family
- Mental health evaluation
- Compliance with prison manuals

Rejection does not automatically mean immediate execution.

7. Grounds Often Raised in Mercy Petitions

- Mental illness or psychological deterioration
- Inordinate delay in deciding the mercy plea
- Disproportionate punishment
- Reformation and good conduct in prison
- Socio-economic background
- International human rights norms

The President's decision reflects a balance between justice, deterrence, and compassion.

8. Contemporary Relevance (Recent Years)

- India has witnessed renewed debate following rejection of mercy petitions in high-profile death penalty cases.

Issues highlighted include:

- Delay in disposal of mercy petitions

- Mental health of death row prisoners
- Transparency in decision-making
- Human rights organisations argue for clearer reasoning, while governments emphasise finality of justice in heinous crimes.

9. Ethical and Human Rights Debate

Supportive view:

- Ensures closure to victims and society.
- Reinforces deterrence in extreme crimes.

Critical view:

- Risk of irreversible error.
- Psychological suffering caused by prolonged uncertainty.
- Questions compatibility with evolving human rights standards.

This debate places mercy power at the intersection of law, morality, and governance.

Good Governance Day 2025

1. What is Good Governance Day?

- Good Governance Day is observed annually on 25 December in India to promote awareness about transparent, accountable, participatory, and citizen-centric governance. The day emphasises improving the quality of public administration and strengthening trust between the state and citizens.
- The observance marks the birth anniversary of Atal Bihari Vajpayee, who is widely remembered for institutional reforms, coalition stability, and emphasis on democratic values.

2. Origin and Institutional Background

- Good Governance Day was instituted in 2014 by the Government of India.

It aims to:

- Reaffirm commitment to ethical and effective governance
- Encourage administrative reforms
- Promote innovation in public service delivery

The day is observed by:

- Union and State governments
- Public institutions
- Educational and training bodies

3. Understanding 'Good Governance'

- Good governance is not limited to efficient administration; it is a normative framework guiding how power is exercised in managing public affairs.

Key elements generally associated with good governance include:

- Transparency in decision-making
- Accountability of institutions and officials
- Rule of law

- Responsiveness to citizens' needs
- Equity and inclusiveness
- Effectiveness and efficiency
- Participation of stakeholders

These principles align with democratic constitutionalism and modern public administration theory.

4. Theme of Good Governance Day 2025

- For Good Governance Day 2025, the focus has been aligned with India's broader developmental vision of long-term national transformation, popularly articulated as "Viksit Bharat" (Developed India).

The thematic emphasis highlights:

- Governance as the foundation of sustainable development
- Institutional capacity-building
- Technology-driven service delivery
- Citizen trust and outcomes-based governance
- Rather than a standalone slogan, the 2025 observance reflects continuity with ongoing governance reforms.

Good Governance Day 2025 is situated in a period marked by:

a) Digital Governance Expansion

Greater use of digital platforms for:

- Service delivery
- Welfare targeting
- Grievance redressal

Emphasis on reducing discretion and improving transparency through technology.

b) Administrative Reforms

- **Focus on:**
- Simplification of procedures
- Time-bound delivery of services
- Performance-based evaluation
- Strengthening coordination between Union, State, and local governments.

c) Citizen-Centric Approach

- Shift from rule-based administration to outcome-oriented governance
- Stress on ease of living, not just ease of doing business.

Governance and Constitutional Values

Good governance draws legitimacy from the Constitution of India, particularly:

- Democratic accountability
- Fundamental rights
- Directive Principles promoting social and economic justice

It bridges the gap between constitutional ideals and administrative practice, ensuring that governance is not merely lawful but also just and humane.

7. Role of Institutions and Civil Services

❖ Good Governance Day underscores the role of:

- Civil services as instruments of public trust
- Independent institutions in ensuring accountability
- Ethical leadership in administration

❖ Training institutions, including administrative academies, often use the occasion to reflect on best practices and innovations in governance.

8. Public Participation and Awareness

❖ The observance encourages:

- Citizen engagement in governance processes
- Awareness about rights and public services
- Feedback mechanisms and social accountability tools

❖ Good governance is increasingly viewed as a shared responsibility between the state and society.

9. Challenges to Good Governance

❖ Despite progress, persistent challenges remain:

- Administrative delays and procedural complexity
- Capacity gaps at local government levels
- Balancing centralisation with cooperative federalism
- Ensuring inclusiveness in digital governance

❖ Good Governance Day serves as a reminder that governance reform is continuous, not episodic.

Breach of Privilege

1. What Is "Breach of Privilege"?

A breach of privilege refers to any act or omission that obstructs or undermines the authority, dignity, or functioning of a legislature or its members. Parliamentary privileges are special rights and immunities that enable legislatures to discharge their constitutional functions without external interference.

In India, these privileges exist for:

- Members of Lok Sabha
- Members of Rajya Sabha
- State Legislatures

2. Constitutional and Legal Basis

- Articles **105 and 194** of the Constitution provide privileges to Parliament and State Legislatures respectively.
- These privileges are partly codified (e.g., freedom of speech in the House) and partly uncodified, derived from parliamentary conventions.
- Each House has the authority to:
 - Inquire into alleged breaches
 - Refer matters to its Privileges Committee
 - Impose sanctions

3. Why Breach of Privilege Was in the News

In December 2025, breach of privilege became a prominent issue due to multiple notices and proceedings initiated during the Winter Session of Parliament, highlighting tensions between legislative authority, executive action, and public speech.

Key triggers reported during this period included:

a. Privilege Notices Against Individuals and Members

Notices were moved alleging that statements made inside or outside Parliament had:

- Lowered the dignity of the House
- Misrepresented parliamentary proceedings
- Cast aspersions on the conduct of presiding officers or members

Some notices involved public remarks, interviews, or social media statements, reflecting the growing overlap between parliamentary functioning and digital discourse.

b. Concerns Over Executive Accountability

Allegations were raised that certain official actions or public communications by authorities had:

- Disregarded parliamentary oversight
- Pre-empted discussion in the House

Members argued that such conduct amounted to contempt of Parliament, as it weakened legislative scrutiny.

c. Disruptions and Conduct Inside the House

Incidents of persistent disruption, use of placards, and disregard of the Chair's directions led to discussions on whether such conduct constituted a breach of collective privilege of the House. These episodes revived debates on the balance between protest and parliamentary decorum.

4. Role of the Presiding Officers

The Speaker of the Lok Sabha and the Chairman of the Rajya Sabha play a crucial role in:

- Admitting or rejecting privilege notices
- Determining whether a prima facie case exists
- Referring matters to the Committee of Privileges

In December 2025, presiding officers reiterated that privilege powers are corrective, not punitive, and should be used sparingly to protect institutional dignity.

5. Committee of Privileges: Institutional Mechanism

- Each House has a Privileges Committee comprising senior members.
- The Committee:
 - Examines evidence
 - Hears the concerned parties
 - Submits a report with recommendations

The House takes the final decision, which may include:

- Admonition
- Reprimand
- Apology
- In rare cases, suspension or other penalties

6. Broader Issues

The news coverage and parliamentary debates brought out deeper concerns:

- Free speech vs. legislative dignity: Where to draw the line between criticism and contempt.
- Digital age challenges: Tweets, videos, and instant commentary complicating privilege enforcement.
- Politicisation of privilege motions: Fears that privilege proceedings may be used as political tools rather than institutional safeguards.
- Absence of codification: Renewed calls to clearly define parliamentary privileges to reduce ambiguity.

7. Judicial Perspective

The Supreme Court of India has consistently held that:

- Parliamentary privilege is subject to constitutional values
- It cannot override fundamental rights in an arbitrary manner
- Courts may intervene where privilege powers are exercised malafide or disproportionately

This jurisprudence formed an important background to the December 2025 discussions.

79th Anniversary of the First Meeting of the Constituent Assembly of India (1946–2025)

First Meeting of the Constituent Assembly of India

1. Historical Context

- The first meeting of the Constituent Assembly of India was held on **9 December 1946** in the **Central Hall of the Parliament House, New Delhi**.
- The year **2025 marks the 79th anniversary** of this historic event, which laid the foundations of independent India's constitutional democracy.
- This meeting occurred at a critical moment when India was still under British rule, yet preparing to assume sovereignty and frame its own Constitution.

2. Background to the Constituent Assembly

- The idea of a Constituent Assembly was first formally accepted by the British government under the **Cabinet Mission Plan (1946)**.
- Members were **indirectly elected** by provincial legislative assemblies using **proportional representation**.
- The Assembly was conceived as a **sovereign body**, representing the will of the Indian people rather than colonial authority.

At the time of the first meeting:

- India had not yet been partitioned.
- The **Muslim League initially boycotted** the Assembly, raising concerns about representativeness that later shaped constitutional debates.

3. The First Sitting: 9 December 1946

- **Sachchidananda Sinha**, the oldest member, was appointed **Temporary President**.
- The session marked the **formal commencement of constitution-making** in India.

- Members emphasised:
 - Democratic legitimacy
 - Unity amidst diversity
 - The responsibility of framing a Constitution for a future sovereign republic

This meeting symbolised India's transition from **colonial governance to a self-authored constitutional order**.

4. Early Leadership and Institutional Development

- **Dr Rajendra Prasad** was later elected as the **President of the Constituent Assembly**.
- **Jawaharlal Nehru** emerged as a central intellectual and political figure in the Assembly.
- **Dr B. R. Ambedkar** was appointed **Chairman of the Drafting Committee**, providing legal and structural coherence to the Constitution.

5. Significance of the First Meeting

The first sitting of the Constituent Assembly was significant because it:

- Asserted **constitutional self-determination**
- Established the principle that **political authority flows from the people**
- Initiated deliberations to reconcile:
 - Unity and diversity
 - Liberty and social justice
 - Federalism and national integrity

It transformed the idea of freedom from a political demand into a **constitutional project**.

6. Constitution-Making as a Democratic Exercise

Between **December 1946 and November 1949**, the Assembly:

- Held **11 sessions**
- Sat for nearly **three years**
- Debated every clause in detail
- Drew upon:
 - Indian historical experience
 - Global constitutional traditions
 - Indigenous social realities

The inclusive and deliberative nature of this process distinguished India's Constitution from many post-colonial charters.

7. Contemporary Relevance of the 79th Anniversary

The 79th anniversary provides an opportunity to:

- Reflect on the vision of the Constitution-makers
- Revisit core constitutional values such as:
 - Democracy
 - Secularism
 - Social justice
 - Rule of law
- Appreciate the Constitution as a **living document**, shaped by dialogue rather than imposition

Public institutions, academic bodies, and civic forums often use the occasion to promote **constitutional awareness and civic responsibility**.

8. Constitutional Legacy

The Constituent Assembly's work resulted in:

- Adoption of the Constitution on **26 November 1949**
- Enforcement on **26 January 1950**
- Establishment of India as a **Sovereign Democratic Republic**

The first meeting stands as the **symbolic birth of constitutional India**, even before formal independence.

Sujalam Bharat App

Launched by: Union Minister for Jal Shakti

Objective: Strengthening rural drinking water governance through data-driven management under **Jal Jeevan Mission**.

Key Features:

- Developed with technical assistance from **BISAG-N**.
- Geo-referenced monitoring of village-level water assets.
- Integrates data on:
 - Water sources
 - Infrastructure status
 - Scheme design & performance
 - Water quality testing
 - Community feedback
- Introduction of **Sujal Gaon ID**: digital profile of every habitation covering source, reliability, quality, infrastructure & O&M.
- Integrated with **PM Gati Shakti GIS platform** for spatial planning and convergence.

Significance:

- Enhances transparency at Gram Panchayat & VWSC level.
- Promotes community participation.
- Enables evidence-based policymaking.

Centralised Public Grievance Redress and Monitoring System (CPGRAMS)

- 24×7 online grievance redress platform.
- Pendency reduced by **~74% since 2021**.

Administered by: Department of Administrative Reforms & Public Grievances (DARPG).

Key Features:

- Linked to all Union Ministries, States & UTs.
- 21-day grievance resolution timeline.
- Appeal & feedback mechanisms.
- Accessible via **UMANG app**.

Excluded Matters:

- Sub-judice cases
- RTI queries
- Personal disputes
- National security issues

SCIENCE AND TECHNOLOGY

WHO's Updated Guidance on GLP-1 Therapies for Obesity

The World Health Organization (WHO) has conditionally recommended the use of GLP-1-based medicines for managing obesity, but only as part of a comprehensive plan that includes a healthy diet, regular physical activity, and ongoing professional support.

These guidelines focus on three GLP-1 medicines approved for long-term obesity treatment in adults:

- Liraglutide
- Semaglutide
- Tirzepatide

What Are GLP-1 Drugs (GLP-1 Receptor Agonists)?

GLP-1 drugs are medicines that imitate the action of the natural hormone Glucagon-Like Peptide-1, which is released by the gut after eating.

They help the body manage blood sugar by:

- Boosting insulin release when glucose levels rise
- Reducing glucagon levels, which helps lower blood sugar
- These drugs also slow down digestion and decrease appetite, helping people feel full sooner and aiding in weight loss.

Where Are They Used?

GLP-1 receptor agonists are primarily used for:

- Type 2 diabetes control
- Long-term obesity management

World AIDS Day

The National AIDS Control Organization (NACO) under the Ministry of Health and Family Welfare has been marking World AIDS Day every year on December 1 since 1992 to raise awareness about HIV and support prevention and treatment efforts.

What is HIV?

HIV (Human Immunodeficiency Virus) is a retrovirus that attacks CD4 cells, a type of white blood cell essential for defending the body against infections.

As the virus destroys these cells, the immune system gradually becomes weaker.

What is a Retrovirus?

Retroviruses carry RNA instead of DNA as their genetic material.

After entering the body, their RNA is converted into DNA and integrated into the host cell's genome.

The infected cell then begins producing more copies of the virus, which go on to infect other cells.

What is AIDS?

AIDS (Acquired Immunodeficiency Syndrome) is the most advanced stage of HIV infection, where the immune system is severely damaged.

HIV spreads through:

- Unprotected sexual contact

- Sharing contaminated needles
- Transfusion of infected blood
- Mother-to-child transmission during pregnancy, childbirth, or breastfeeding

Treatment

Early diagnosis and consistent antiretroviral therapy (ART) help reduce viral load, prevent progression to AIDS, and improve life expectancy.

HIV Situation in India

- India has over 2.5 million people living with HIV.
- The national prevalence is 0.20%, much lower than the global average of 0.7%.

Between 2010 and 2024:

- New HIV infections reduced by 48.7%
- AIDS-related deaths dropped by 81.4%

Government Initiatives

1. National AIDS and STD Control Programme (NACP) Phase-V
A Central Sector Scheme aiming to eliminate AIDS as a public health threat by 2030.
2. 95-95-95 Targets

India has adopted the global goal that:

- 95% of people living with HIV know their status
- 95% of diagnosed individuals receive sustained ART
- 95% of those on ART achieve viral suppression

3. Other Key Measures

Mission Sampark to identify and bring missing HIV-positive individuals back into care HIV/AIDS (Prevention and Control) Act, 2017, which prohibits discrimination and ensures rights of people living with HIV

Sanchar Saathi

The Department of Telecommunications (DoT) has directed smartphone companies to pre-install the Sanchar Saathi mobile app on all new phones sold in India .

About the Sanchar Saathi Mobile App

Launched in 2025, Sanchar Saathi is designed to make mobile services more transparent, secure, and user-friendly.

Key Features

Chakshu:

Lets users report suspicious or fraudulent communication — including scam calls, fake SMS, and WhatsApp messages, especially those related to false KYC updates.

IMEI Tracking & Blocking:

Helps users locate and block lost or stolen phones anywhere in the country using the device's IMEI number.

Verify Mobile Device Authenticity:

Provides a quick tool to check whether a purchased mobile handset is genuine or counterfeit.

Report Masked International Calls:

Allows reporting of international calls disguised as domestic ones — typically using a fake +91 number format.

Know Your Internet Service Provider:

Enables users to identify their local ISP by entering a PIN code, address, or service provider name.

GPS Spoofing

The Ministry of Civil Aviation has confirmed incidents of GPS spoofing at Delhi and several other major airports.

What is GPS Spoofing?

GPS spoofing, also called GPS simulation, involves sending fake GPS signals to a receiver in order to mislead it.

These false signals trick the device into believing it is in a different location, causing it to display incorrect position information.

Since many systems rely on accurate GPS data for navigation and time synchronization, this cyberattack can disrupt critical operations and compromise safety.

Alaknanda Galaxy

Indian astronomers have identified a large spiral galaxy named Alaknanda using observations from NASA's James Webb Space Telescope.

The galaxy features two prominent spiral arms curving around a bright central core and spans roughly 30,000 light-years across.

About Spiral Galaxies

Spiral galaxies look like huge rotating pinwheels, consisting of a flat, disk-shaped collection of stars along with a dense central bulge.

Surrounding the disk is a halo, which contains older stars, star clusters, and dark matter—a mysterious form of matter that cannot be seen directly but exerts gravitational influence on visible objects.

Cyber Slavery

In recent years, countries such as Myanmar, Cambodia, and Laos have become major centres for cyber slavery.

This crime involves a modern form of human trafficking where individuals are trapped through fake job offers and then forced to run online scams, cyber fraud, and other digital crimes under threats, coercion, or confinement.

How Cyber Slavery Operates

- **False Recruitment:** Victims are attracted with promises of lucrative overseas jobs.
- **Seizure of Documents:** Their passports and identification papers are taken away, preventing them from leaving.

- **Compelled Cybercrime:** They are made to work in fraudulent call centres and engage in activities like romance scams, crypto fraud, phishing, and other online schemes.
- **Abuse and Control:** Victims face physical violence, psychological intimidation, extremely long working hours, limited movement, and constant monitoring.

Asteroid Bennu

Scientists have detected glucose in the material brought back from Asteroid Bennu by NASA's OSIRIS-REx mission in 2023.

This finding suggests that some of the basic chemical building blocks of life may have existed in the early solar system.

About Asteroid Bennu

Bennu is a small, near-Earth asteroid that comes close to our planet roughly once every six years.

It is composed of loosely bound rocks, some of which are unlike any found on Earth, held together only by weak gravity and minimal structural forces.

Inhalable Microplastics (iMPs)

A recent study has reported high levels of inhalable microplastics (iMPs) in the air across several Indian cities.

What Are iMPs?

- They are extremely tiny plastic particles, smaller than 10 micrometres, much finer than regular microplastics (under 5 mm).
- Because of their minute size, these particles can be breathed in easily, travel deep into the lungs, enter the bloodstream, and may even reach vital organs—acting like “Trojan horses” that carry harmful substances.
- Health Concerns
- iMPs may transport pathogens and toxic chemicals.
- They can trigger inflammation, cell damage, and long-term health risks, including a possible increased chance of cancers.

NITI Aayog-IBM Roadmap: Making India a Top 3 Quantum Economy by 2047

Aim: Build a domestic quantum ecosystem and secure a major share in the global quantum market.

Roadmap: “Transforming India into a Leading Quantum-Powered Economy.”

Target: Incubate 10 globally competitive quantum startups (each ≥ USD 100 million revenue) and capture 50%+ of global quantum software/services value by 2035.

Status of Quantum Technology in India

- **Talent Pool:** India ranks 2nd globally with ~91,000 quantum-skilled graduates (after the EU).
- **State Initiatives:**
 - Karnataka → Quantum Research Park (QuRP)
 - Andhra Pradesh → Amaravati Quantum Valley (AQV)

Key Recommendations of the Roadmap

1. Expand Workforce: Build a strong scientific, engineering, and industry-ready quantum workforce within 2–3 years.
3. Prioritize Opportunity Areas: Focus on 3–5 high-impact sectors — secure communication, health & pharma, cryogenics, financial services, logistics, etc.
4. Accelerate Lab-to-Market: Improve ease of research, validation, and commercialization; aim for <2 years lab-to-market cycle.
5. Lead Global Standard Setting: Actively participate in international standards bodies to ensure Indian quantum products gain global market access.
6. Strengthen Startup Ecosystem: Make India an attractive domicile so that >90% deep-tech startups remain India-based.

DHRUVA

The Department of Posts has proposed DHRUVA, an initiative aimed at creating a nationwide digital addressing system, enabling “Address as a Service” (AaaS) in India.

About DHRUVA

- **Full Form:** Digital Hub for Reference and Unique Virtual Address.
It is designed as a standardised, interoperable, and user-friendly digital system for addresses.
- **Objective:** Replace traditional text-based addresses with UPI-style digital address tags like name@entity, which serve as virtual identifiers for physical locations.
- **Functioning:** Instead of sharing long written addresses, users can simply share their digital label. With the user’s permission, organizations can retrieve the complete physical address and its geo-coordinates instantly.
- **Core Layer – DIGIPIN:** A geo-coded identifier generated using latitude and longitude.

Delhi High Court Rejects Patent Infringement Claim Against Dr Reddy’s Laboratories (DRL)

The Delhi High Court declined to grant the Danish drugmaker Novo Nordisk an interim injunction against Dr Reddy’s Laboratories in a dispute involving semaglutide.

Semaglutide—patented by Novo Nordisk in India—is an active pharmaceutical ingredient (API) used to treat Type 2 diabetes and obesity.

(API refers to the main chemical component of a drug responsible for its therapeutic action.)

Novo Nordisk sells its semaglutide-based medicines under the brand names Ozempic (anti-diabetic) and Wegovy (weight loss).

The Court observed that Novo Nordisk's two additional patents over minor modifications of semaglutide might constitute patent evergreening.

About Evergreening of Patents

A patent normally lasts 20 years, but evergreening is a tactic used by companies to extend monopoly protection by making small, non-innovative changes to existing drugs.

These modifications may include new salts, isomers, polymorphs, dosages, or delivery systems, often without offering any real therapeutic improvement.

Relevant Legal Provisions

- **Section 3(d), Patents Act 1970:** Explicitly disallows patents on new forms or derivatives of known substances unless they show significantly improved therapeutic efficacy, thereby restricting evergreening.
- **Patentability Criteria:** India requires strict tests of novelty and inventive step, preventing trivial or obvious variations of existing drugs from being patented.
- **TRIPS & Doha Declaration Flexibilities:** India's patent regime is TRIPS-compliant while using public-health safeguards under the Doha Declaration to curb unjustified secondary patents and ensure availability of affordable generic medicines.
- **12IMF Analysis on Stablecoins :** A new IMF paper reviews the fast rise of stablecoins, highlighting both their growing role in digital finance and the risks they pose to financial stability.

What Are Stablecoins?

Crypto-assets designed to keep a stable value by being pegged to something like a fiat currency.

Usually issued by centralized entities such as crypto firms or financial institutions.

Beyond aiding crypto trading, they are increasingly used for cross-border payments, remittances, and asset tokenization, offering potential efficiency gains in payments.

Associated Risks

- **Run Risk:** Loss of user confidence can trigger mass redemptions and forced selling of reserve assets, affecting broader markets.
- **Currency Substitution:** Heavy use of foreign stablecoins in weak economies may erode monetary sovereignty and reduce the impact of domestic monetary policy.
- **Banking Disintermediation:** Could draw deposits away from banks, limiting their lending ability.
- **Financial Integrity Issues:** Pseudonymous transactions increase risks of money laundering and terror financing.

Cosmic Filaments

Researchers at the University of Oxford have identified a cosmic filament nearly 50 million light-years long, mapped using at least 14 galaxies.

About Cosmic Filaments

Cosmic (or galaxy) filaments are the largest thread-like structures in the universe's cosmic web.

A single filament can stretch hundreds of millions of light-years, formed as gravity pulls gas, dark matter, and galaxies into elongated strands that connect massive galaxy clusters.

These filaments also border vast empty regions called voids.

Why They Matter

They help astronomers understand how galaxies form, evolve, and are distributed.

Act as conduits of matter, supplying gas and material to dense regions and influencing the growth of galaxy clusters.

Myeloma

A new antibody treatment targeting immune and cancer cells has shown promise in removing residual multiple myeloma—a form of blood cancer.

About Myeloma

Definition: A cancer that develops in the plasma cells of the bone marrow—white blood cells responsible for fighting infections.

Common Symptoms:

- Bone pain (especially in the spine, chest, or hips)
- Fatigue
- Frequent infections
- Nausea, constipation
- Weight loss
- Excessive urination
- Confusion

Bharat 6G Alliance

The Apex Council of the Bharat 6G Mission recently held a meeting to assess the progress of the Bharat 6G Alliance. During this meeting, a future roadmap was prepared with the goal of making India a global leader in 6G technology by the year 2030.

What is the Bharat 6G Alliance?

The Bharat 6G Alliance is a national-level collaborative platform that brings together:

- Government bodies
- Industry experts
- Academic institutions
- Startups

Objective

The main objective of the Alliance is to help India emerge as a global provider of intellectual property, telecom products, and solutions. It focuses on developing cost-effective 5G, 6G, and future communication technologies that can be used worldwide.

About 6G Technology

- 6G will operate on much higher radio frequencies compared to 5G.
- This will allow it to process extremely large amounts of data with almost zero delay.
- The expected response time of 6G is about one microsecond, which is 1,000 times faster than 5G.

Mephedrone

The Directorate of Revenue Intelligence (DRI) dismantled an illegal mephedrone manufacturing unit in Maharashtra during Operation Hinterland Brew. Mephedrone is classified as a New Psychoactive Substance (NPS) that is created to produce effects similar to illicit drugs such as MDMA (3,4-Methylenedioxymethamphetamine). It functions as an empathogen-stimulant, accelerating the transmission of signals between the brain and the body. The use of mephedrone is associated with serious health hazards, including adverse effects and cases of fatal poisoning.

India's First Indigenous Hydrogen Fuel Cell Passenger Vessel Launched in Varanasi

India has achieved a significant milestone in clean maritime technology with the launch of its first indigenously developed hydrogen fuel cell-powered passenger vessel in Varanasi. The vessel operates using a hydrogen fuel-cell propulsion system specifically designed for marine applications.

At the core of this system is a Low-Temperature Proton Exchange Membrane (LT-PEM) fuel cell, which has been fully developed using indigenous technology. This innovation highlights India's progress toward sustainable and environmentally friendly transportation solutions.

Working Principle of a Proton Exchange Membrane (PEM) Fuel Cell

A Proton Exchange Membrane fuel cell produces electricity through an electrochemical process, without involving combustion. Its operation can be explained in the following steps:

7. Hydrogen Supply at the Anode

Hydrogen gas is introduced at the anode side of the fuel cell. A catalyst present at the anode breaks hydrogen molecules into protons (H^+) and electrons (e^-).

8. Selective Proton Movement

The proton exchange membrane allows only protons to pass through it while blocking the electrons.

9. Electricity Generation

Since electrons cannot cross the membrane, they are forced to travel through an external electrical circuit, producing usable electrical energy.

10. Reaction at the Cathode

The protons that pass through the membrane reach the cathode, where oxygen from the air is supplied.

6. Formation of By-products

At the cathode, protons, electrons, and oxygen combine to form water, releasing a small amount of heat as a by-product.

This process enables clean energy generation, with water as the only emission, making PEM fuel cells an environmentally sustainable alternative for marine transportation.

India's First Clinical Trial of an Advanced Stroke Treatment Device

AIIMS, New Delhi has conducted India's first clinical trial of a cutting-edge stroke intervention device called the Supernova Stent, marking a major step forward in indigenous medical technology and critical care.

A stroke is a neurological emergency that occurs due to an interruption in blood supply to the brain or the rupture of a cerebral blood vessel. Without timely intervention, it can lead to permanent brain damage, long-term disability, or death.

The Supernova Stent functions by mechanically capturing and removing blood clots that block major cerebral arteries, thereby restoring blood flow to the affected brain regions—a process known as reperfusion. Its safety and clinical efficacy have been established through the GRASSROOT Trial (Gravity Stent-Retriever System for Reperfusion of Large Vessel Occlusion Stroke), which demonstrated promising outcomes in the treatment of large-vessel ischemic strokes.

MahaCrimeOS AI: AI-Enabled Platform to Combat Cybercrime in Maharashtra

The Government of Maharashtra has launched MahaCrimeOS AI, an artificial intelligence-driven platform aimed at enhancing the state's capacity to tackle the growing challenge of cybercrime through technology-led policing.

About MahaCrimeOS AI

- **Platform & Collaboration:** MahaCrimeOS AI functions as an advanced AI co-pilot system, developed in collaboration with Microsoft and built using the Azure OpenAI Service.
- **Objective:** The platform seeks to streamline investigative workflows by processing large volumes of unstructured and multilingual data, such as FIRs and financial records, thereby reducing investigation time by up to 80%.
- **Key Functions:** It enables automated data extraction, assists investigators by guiding them through standard operating protocols, and helps identify hidden patterns and interlinkages in complex crime networks.

Geminid Meteor Shower Lights Up the Night Sky

The Geminid meteor shower was recently observed across various parts of the world, offering a spectacular celestial display.

The Geminids are known for their bright, fast-moving meteors, which typically appear yellowish in colour, making them among the most visually striking meteor showers.

This annual meteor shower reaches its peak in mid-December each year. During peak activity, observers under clear and dark sky conditions can witness up to 120 meteors per hour, making the Geminids one of the most intense and reliable meteor showers visible from Earth.

Indian Army Showcases Indigenous Tech Solutions on Vijay Diwas

The Indian Army showcased two indigenous technological solutions—Ekam AI and SAMBHAV—as part of the Vijay Diwas celebrations, highlighting India’s growing focus on self-reliance in defence technology.

About Ekam AI

Ekam AI is a fully indigenous and secure artificial intelligence platform developed for use in sensitive and classified environments. It allows personnel to analyse data, manage documents, and support operational decision-making without relying on foreign software or external cloud infrastructure, thereby strengthening data sovereignty and cybersecurity in defence operations.

About SAMBHAV

SAMBHAV is a portable satellite-enabled communication system designed to provide reliable mobile connectivity in challenging conditions. It can be rapidly deployed in remote, border, or disaster-hit areas, enhancing communication capabilities for armed forces as well as civilian authorities during emergencies.

FSSAI Orders Testing of Eggs for Banned Antibiotic Residues

The Food Safety and Standards Authority of India (FSSAI) has directed its regional offices to collect and test egg samples for the presence of nitrofurans residues, amid concerns over food safety and consumer health.

About Nitrofurans

Nitrofurans are a group of broad-spectrum antibiotics, including drugs such as furazolidone and nitrofurazone. They have been used in veterinary practice for their antibacterial and anti-inflammatory properties, particularly in livestock and poultry.

India launches DHRUV64 microprocessor

About DHRUV64

It is first 1.0 GHz, 64-bit dual-core first fully indigenous microprocessor.

Microprocessors are the brains of modern electronic devices such as mobiles, computers, etc.

Developed by: The Centre for Development of Advanced Computing (C-DAC) under the Microprocessor Development Programme (MDP).

Jumping Genes and Climate Adaptation in Greenland Bears

A recent study found that some bears in Greenland are using jumping genes to modify their DNA.

This genetic mechanism is helping them adapt to warming environmental conditions caused by climate change.

About Jumping Genes (Transposons)

Also known as transposons or transposable elements.

They are mobile genetic elements that can move from one location to another within the genome.

Their insertion can alter gene expression, depending on where they integrate into the DNA.

Such changes may lead to adaptive traits that improve an organism’s survival in changing environments.

WIMPs and Dark Matter

Recent research suggests that Weakly Interacting Massive Particles (WIMPs) could explain the nature of dark matter.

About Weakly Interacting Massive Particles (WIMPs)

- Hypothetical, electrically neutral particles proposed as leading dark matter candidates.
- Do not emit or absorb light and interact very weakly with ordinary matter.
- Interact mainly through gravity and possibly the weak nuclear force.
- WIMP collisions may produce gamma rays, offering indirect detection possibilities.

CSIR-CFTRI Research on Annatto

CSIR-Central Food Technological Research Institute (CSIR-CFTRI), Mysuru has undertaken research projects focused on the study and development of annatto, highlighting its potential in food and allied industries.

About Annatto

- Annatto is a natural carotenoid, a class of plant-derived pigmented compounds.
- It is obtained from the seeds of the Bixa orellana shrub.
- Widely used as a natural colouring agent in food products due to its plant-based origin.

Autophagy

Autophagy is an intrinsic cellular housekeeping mechanism through which cells degrade and recycle damaged or non-functional components, helping maintain cellular homeostasis.

It plays a crucial role in removing toxic protein aggregates, supporting cell repair, energy regulation, and survival during stress conditions such as starvation or infection.

Proper functioning of autophagy is associated with protection against neurodegenerative disorders and certain cancers, making it a key focus area for therapeutic research.

Possible Second Observation of a Superkilonova

An international research team, including scientists from IIT Bombay and the Indian Institute of Astrophysics, has reported evidence pointing to a possible second version of a superkilonova.

About Superkilonova

A superkilonova is a rare cosmic explosion in which a star's death involves two explosive events occurring in sequence:

First, a supernova

Followed shortly by a kilonova, originating from the same source.

Proposed mechanism:

The core collapse during a supernova may result in the formation of two neutron stars.

These neutron stars later merge, triggering a kilonova explosion.

CERT-In Warns Against WhatsApp Account Takeover Scam (Ghost Pairing)

CERT-In has issued an advisory cautioning Indian users about a rising WhatsApp account takeover campaign known as Ghost Pairing.

Nature of the Scam:

Ghost Pairing is a new cyber fraud technique that enables attackers to gain control of a WhatsApp account without requiring access to the victim's SIM card or password.

Modus Operandi:

The attack misuses WhatsApp's device-linking feature.

Users are deceived into approving a fraudulent yet authentic-looking pairing request, unknowingly linking the attacker's device to their account.

SIRT6 Enzyme and Regulation of Brain Aging

Researchers have identified a key molecular pathway involving the enzyme SIRT6 that plays a significant role in regulating brain ageing and neurodegenerative processes.

About SIRT6 Enzyme

SIRT6 (Sirtuin 6) is a longevity-associated enzyme known to influence cellular ageing.

It functions as an active metabolic regulator, acting as a gatekeeper of tryptophan metabolism.

Tryptophan is an essential amino acid involved in:

Cellular energy production

Synthesis of neurotransmitters such as serotonin and melatonin, which are crucial for mood regulation, sleep cycles, and neural stability.

LVM3-M6 Mission and BlueBird Block-2 Launch

- LVM3-M6 is the sixth operational flight of ISRO's LVM3 and the third dedicated commercial mission using the launch vehicle.
- The mission launched the BlueBird Block-2 satellite of AST SpaceMobile from Satish Dhawan Space Centre.
- It was executed under a commercial agreement between AST SpaceMobile and NewSpace India Limited (NSIL), the commercial arm of ISRO.

BlueBird Block-2 :

- Part of a global Low Earth Orbit (LEO) constellation providing direct-to-mobile connectivity (4G/5G calls, data, messaging).
- Features a 223 m² phased-array antenna, making it the largest commercial communication satellite in LEO.
- Weighs 6,100 kg, the heaviest payload launched by LVM3.

LVM3 :

- A three-stage heavy-lift launch vehicle with solid, liquid, and cryogenic stages.
- Capable of placing 4,200 kg into Geosynchronous Transfer Orbit (GTO).

AWARDS AND PRIZES

Rashtriya Vigyan Puraskar

On 23 December 2025, President Droupadi Murmu presented the *Rashtriya Vigyan Puraskar-2025* at a ceremony held at the *Gantantra Mandap, Rashtrapati Bhavan, New Delhi*.

About Rashtriya Vigyan Puraskar

- **Rashtriya Vigyan Puraskar (RVP)** is a **national science award** instituted by the **Government of India** to recognise exceptional contributions by *scientists, technologists, innovators and research teams* across science & technology disciplines.
- It aims to **acknowledge and inspire excellence** in scientific research, technological innovation and science-led development.
- RVP is part of the *restructured national science awards framework*.

2025 Award Ceremony: Key Highlights

- **Second edition:** The 2025 awards mark the **second edition** of Rashtriya Vigyan Puraskar, indicating its recent establishment and emerging role in India's science recognition landscape.
- **Number of awardees: 24 scientists and teams** were honoured across diverse scientific domains.
- Awards were presented under **four major categories**:
 1. **Vigyan Ratna** – Lifetime achievement/exceptional career contribution.
 2. **Vigyan Shri** – Senior distinguished scientists.
 3. **Vigyan Yuva-Shanti Swarup Bhatnagar** – Young scientists (linked with the historic *Shanti Swarup Bhatnagar Prize* tradition).
 4. **Vigyan Team** – Recognises impactful team-based innovation.

Category Details & Notable Winners

- **Vigyan Ratna Award:** – Posthumously awarded to **Prof. Jayant Vishnu Narlikar**, renowned Indian *astrophysicist and cosmologist* known for pioneering work in cosmology and science communication.
- **Vigyan Shri Awards:** Conferred on senior scientists for leadership and contributions in fields such as agricultural science, atomic energy, chemistry, biological science, engineering sciences, environmental science and space science.
- **Vigyan Yuva — Shanti Swarup Bhatnagar Category:** Awarded to promising young scientists (e.g., in ISRO, IITs, IISc) for research excellence and innovation.
- **Vigyan Team Award:**– Awarded to **CSIR-Aroma Mission Team** for leading *Purple Revolution* initiatives (lavender cultivation & value-added aromatic crop industry), demonstrating applied science fostering socio-economic impact.

Purpose & Scope

- **Recognition of Excellence:** Celebrates *top scientific achievements* and innovations across disciplines.
- **Inspiration:** Encourages *young researchers and innovators* to pursue careers in science and technology.
- **Science-Led Development:** Reinforces *science, technology & innovation* as key drivers of economic growth, national capability and global competitiveness.

Institutional & Selection Framework

- **Government of India:** The award is a *national recognition scheme* instituted by the Government, presented by the President of India—the highest constitutional authority in the country.
- The RVP is part of the broader landscape of *national science awards* that aim to elevate science recognition to the same stature as other national honours (e.g., Padma Awards).
- *Shanti Swarup Bhatnagar Prize* features within the RVP framework via the **Vigyan Yuva** category, reflecting continuity with India's longstanding tradition of honouring scientific excellence.

Champions of the Earth Award

Recently, **Ms. Supriya Sahu**, Additional Chief Secretary in the Department of Environment, Climate Change and Forests, Government of Tamil Nadu, was honoured with the **UN Environment Programme's (UNEP) Champions of the Earth Award 2025**, recognising her outstanding contribution to environmental governance and sustainability.

About the Champions of the Earth Award

- Instituted in **2005**, the award is presented annually by the **United Nations Environment Programme (UNEP)**.
- It is regarded as the **highest environmental honour of the United Nations**, celebrating individuals and institutions that demonstrate exceptional leadership in protecting the planet and improving human well-being.
- The award acknowledges innovative and impactful initiatives addressing the **triple planetary crisis**:
 - Climate change
 - Biodiversity and nature loss
 - Pollution and waste

Categories of the Award

UNEP recognises Champions of the Earth under **four broad categories**:

- 1. Policy Leadership**
 - Conferred on public officials and policymakers who drive national or global environmental action.
 - They influence environmental discourse, steer commitments, and implement policies for planetary well-being.
- 2. Inspiration and Action**
 - Honours leaders who take courageous steps to motivate society towards sustainable practices.
 - Such individuals lead by example and inspire behavioural change at scale.
- 3. Entrepreneurial Vision**
 - Awarded to innovators and entrepreneurs who challenge existing systems.
 - They develop new technologies, business models and solutions for a cleaner and greener future.
- 4. Science and Innovation**
 - Recognises scientists and innovators pushing technological and scientific frontiers to achieve significant environmental gains.

PLACES IN NEWS

Chaprala Wildlife Sanctuary

A **rare striated grassbird** has recently been sighted in the **Chaprala Wildlife Sanctuary** of Gadchiroli district, marking a significant **range expansion** of the species within Maharashtra.

About Chaprala Wildlife Sanctuary

- Situated in **Gadchiroli district, Maharashtra**, the sanctuary was established in **1986** and spans roughly **134.78 sq. km.**
- It is flanked by the **Markhanda** hills to the northeast and the **Pedigundam** hills to the south, while the **Pranhita River** demarcates its western boundary.
- The sanctuary lies close to the **confluence of the Wardha and Wainganga rivers**, and during the monsoon season, rising river levels periodically flood parts of the sanctuary.

Several natural and man-made water bodies—such as **Murgikunta, Raikonta, and Komatkunta tanks**—enrich the wetland and aquatic biodiversity of the region.

Vegetation

The landscape is dominated by **southern tropical dry deciduous forests**, interspersed with grasslands.

Flora

Major tree species include:

- **Teak, Arjun, Salai, Mahua, Bel, Dhawada, Tendu, Sissoo, Semal**

Fauna

The sanctuary supports a rich array of wildlife, including:

- **Tiger, Leopard, Wild boar, Sloth bear, Wild dog, Langur, Blackbuck, Spotted deer, Sambar, Jackal, Mongoose**, among others.

Its riparian habitats also host diverse **aquatic life**, including species of **fish, prawns, and turtles**.

Key Facts: Striated Grassbird (*Megalurus palustris*)

Family: Locustellidae

Distribution:

Found throughout **South and Southeast Asia**—including India, Pakistan, China, Cambodia, Laos, Vietnam, Thailand, Malaysia, Philippines, and Indonesia.

Physical Characteristics

- Size: **22–28 cm**, Weight: **38–56 g**
- Light reddish-brown upper body
- Prominent **black streaking** on back and wing coverts
- Distinct **dark yellow eyebrow stripe**
- Long, pointed tail
- Pale underparts with streaking on the chest
- Brown iris; black upper bill with a pinkish underside; pink feet

Conservation Status

- **IUCN Red List:** *Least Concern*

Keoladeo National Park

Following abundant monsoon rainfall, **Keoladeo National Park** has once again welcomed large flocks of migratory birds, including stork cranes, pelicans, painted storks, and bar-headed geese, marking the start of the winter migration season.

About Keoladeo National Park

Located in the **Bharatpur district of Rajasthan**, Keoladeo is one of the world's most renowned bird habitats.

Originally established as a **duck-shooting reserve** in the late 19th century by Maharaja Suraj Mal of Bharatpur, it was formally declared a **bird sanctuary in 1956**.

In **1981**, it gained the status of a **national park** and was renamed after the ancient **Keoladeo Temple**, dedicated to Lord Shiva, situated within the park.

Covering **29 sq. km**, it is the **only national park in India enclosed by a 2-metre-high boundary wall**, built to protect it from encroachment.

Keoladeo is also recognised as a **Ramsar wetland site** and a **UNESCO World Heritage Site**.

Vegetation & Habitat

The park contains a mosaic of:

- **Woodlands**
- **Swamps**
- **Wet grasslands**

Its vegetation represents **dry deciduous forest**, containing medium-sized trees and scattered shrubs. Common tree species include **kadam, jamun, babul, kandi, ber, kair, and piloo**.

Fauna

Keoladeo hosts a rich diversity of mammals, reptiles, and amphibians, such as:

- **Python species**, other snakes
- **Sambar, chital, blackbuck, and hog deer**
- **Jackals, monitor lizards, and fishing cats**

The park lies strategically on the **Central Asian Flyway**, making it a prime stopover for migratory birds. It supports more than **360 species** of resident and migratory birds.

From **October to March**, thousands of birds arrive from **Afghanistan, Turkmenistan, China, and Siberia**.

Notable winter visitors include:

- Gadwalls
- Shovellers
- Teals
- Tufted ducks
- Pintails
- White spoonbills
- Asian open-billed storks
- Oriental ibises
- The rare and iconic **Siberian crane**

Ramgarh Vishdhari Tiger Reserve

In a significant conservation milestone, Rajasthan is set to witness its **first-ever inter-state tiger translocation**, which will also be **India's second such operation**. A tigress will be **airlifted from the Pench Tiger Reserve in Madhya Pradesh** to the **Ramgarh Vishdhari Tiger Reserve**, located nearly **800 km away in Bundi district, Rajasthan**, in the coming weeks. This move aims to strengthen tiger conservation and genetic diversity in the region.

About Ramgarh Vishdhari Tiger Reserve (RVTR)

Ramgarh Vishdhari Tiger Reserve is situated in the **Bundi district of Rajasthan**. It covers a total area of **1,501.89 sq km**, comprising a **core area of 481.90 sq km** and a **buffer zone of 1,019.98 sq km**.

The reserve holds strategic ecological importance as it functions as a **vital wildlife corridor** connecting the **Ranthambore Tiger Reserve** in the northeast with the **Mukundara Hills Tiger Reserve** in the south. It was officially declared a tiger reserve on **16 May 2022**.

The **Mez River**, a tributary of the **Chambal River**, flows through the reserve. The terrain is marked by **rugged hills of the Aravalli and Vindhyan ranges**, along with valleys and plateaus.

Vegetation

The forest type is predominantly **Dry Deciduous Forest**.

Flora

The landscape is mainly dominated by **Dhok (Anogeissus pendula)** trees. Other important plant species include **Khair, Ronj, Amaltas, Gurjan, and Saler**.

Fauna

Leopards and sloth bears form the dominant carnivore population. Other wildlife includes the **jungle cat, golden jackal, hyena, crested porcupine, Indian hedgehog, rhesus macaque, and Hanuman langur**.

Key Facts about Pench Tiger Reserve

Pench Tiger Reserve is located in the **southern part of the Satpura range**, spread across the **Seoni and Chhindwara districts of Madhya Pradesh**, and it shares its southern boundary with **Maharashtra**. The reserve is named after the **Pench River**, which flows through it from north to south.

The reserve consists of the **Indira Priyadarshini Pench National Park**, the **Pench Mowgli Sanctuary**, and a surrounding buffer area. The region is also celebrated as the **real-life setting of The Jungle Book by Rudyard Kipling**.

Vegetation

The area supports a diverse vegetation pattern ranging from **moist sheltered valleys to open dry deciduous forests**.

Flora

Major plant species include **teak, saag, mahua**, along with a variety of **grasses and shrubs**. Teak forests alone occupy nearly **one-fourth of the reserve area**.

Fauna

The reserve is well-known for large herds of **chital, sambar, nilgai, gaur (Indian bison), and wild boar**. The **tiger is the apex predator**, followed by **leopard, wild dog, and wolf**.

The reserve also hosts over **325 species of resident and migratory birds**, including the **Malabar Pied Hornbill, Indian Pitta, Osprey, Grey-headed Fishing Eagle, and White-eyed Buzzard**.

Sultanpur National Park

With the dip in winter temperatures, Sultanpur National Park has once again become vibrant, as flocks of migratory birds have started arriving in large numbers. The sanctuary is witnessing a noticeable rise in avian visitors this season.

About Sultanpur National Park

Sultanpur National Park—earlier called **Sultanpur Bird Sanctuary**—lies in Haryana's **Gurgaon (Gurugram) district**, roughly **46 km from Delhi**. Spread over **1.42 sq. km**, the park is dominated by marshlands and natural floodplains.

Wetland Characteristics

- The protected area includes a **1.21 sq. km core zone**, which covers the main **Sultanpur Lake/Jheel**.
- Sultanpur Jheel is a **seasonal freshwater wetland**, where water levels rise and fall naturally across the year.
- The lake receives water mainly from the **Gurgaon Canal of River Yamuna** and also from runoff and overflow of surrounding agricultural fields.

Historical Importance

The site gained conservation significance in the late 1960s due to the initiatives of renowned ornithologists **Peter Michel Jackson** and **Dr. Salim Ali**, who highlighted its importance as a bird habitat. In **2021**, the wetland was designated as a **Ramsar Site**, recognizing its international ecological value. It is also identified as an **Important Bird Area (IBA)** by **BirdLife International**.

Flora

The vegetation is predominantly **tropical dry deciduous**. Common plant species include:

- Grasses and shrubs
- **Dhok, Khair, Tendu, Ber, Jamun, Neem, and Banyan**
- **Berberis, Acacia nilotica, and Acacia tortilis**

Fauna

Avifauna

Sultanpur is a crucial wintering refuge, with **over 320 bird species** recorded.

The park lies along the **Central Asian Migratory Flyway**, attracting thousands of birds each winter from **Russia, Turkey, Afghanistan, and parts of Europe**.

Winter Visitors

- Greater Flamingos
- Northern Pintails
- Eurasian Wigeons
- Common Teals
- Bar-headed Geese

Resident Birds

- Indian Peafowl
- Red-wattled Lapwing
- Cattle Egret
- White-throated Kingfisher

Rare / Threatened Birds

- Sarus Crane
- Black-necked Stork
- Indian Courser

Other Wildlife

Besides birds, the national park hosts species such as:

- Nilgai
- Sambar deer
- Golden jackal
- Indian wild dog
- Striped hyena
- Indian porcupine
- Mongoose species

Buxa Tiger Reserve

A large-scale **four-month wildlife survey** has recently been launched in the Buxa Tiger Reserve, aiming to assess its biodiversity and monitor key species across the landscape.

About Buxa Tiger Reserve**Location**

Buxa Tiger Reserve is situated in **West Bengal's Jalpaiguri district**.

Its northern edge directly borders **Bhutan**, giving the reserve significant ecological and strategic importance.

Ecological Features

- The reserve forms part of the sensitive **Terai ecosystem**, known for its rich biodiversity and marshy grasslands.
- It functions as an **international wildlife corridor**, enabling the movement of elephants between **India and Bhutan**.

Corridor Connectivity

Buxa maintains ecological linkages with:

- **Bhutanese forests** to the north,
- **Kochugaon forests and Manas Tiger Reserve** on the eastern side, and
- **Jaldapara National Park** to the west.

This network makes the reserve a key component of transboundary wildlife conservation in the region.

Rivers

Two major rivers—**Raidak** and **Jayanti**—meander through the forests of Buxa, supporting diverse habitats and sustaining the reserve's flora and fauna.

Vegetation

The forest types in Buxa are broadly categorized under **Moist Tropical Forests**, which support dense greenery and high species diversity.

Flora

Notable tree species found here include:

- Sal
- Champa
- Gamar
- Simul
- Chikrasi

Fauna

The reserve shelters a wide range of wildlife, including:

- Tiger
- Asian Elephant
- Leopard Cat
- Gaur
- Wild Boar
- Sambar Deer
- Hog Deer
- Chinese Pangolin

These species make Buxa one of the biologically significant landscapes in eastern India.

Charaichung Royal Bird Sanctuary

Assam's Majuli Island recently hosted the 'Charaichung Festival', an event aimed at reviving and drawing attention to Asia's earliest protected bird sanctuary, the historic Charaichung Royal Bird Sanctuary.

Charaichung Royal Bird Sanctuary

Overview

The Charaichung Royal Bird Sanctuary holds the distinction of being Asia's first officially protected bird refuge, created in 1633 AD under the reign of Ahom King Swargadeu Pratap Singha. This highlights the long-standing conservation ethics rooted in the Ahom dynasty.

Location

- Situated on Majuli, recognized as the largest river island in the world.
- Formed and shaped by the Brahmaputra River, along with its channels Kherkutia Xuti and Subansiri.

Ecological Importance

- The sanctuary supports nearly 150 species of indigenous and migratory birds.
- Its rich biodiversity underscores the need for sustained protection and habitat conservation.

Charaichung Festival

About the Festival

- The recently held event marked the second edition of the Charaichung Festival.
- Organized with the support of Majuli Sahitya and the active participation of local communities.

Objective

- To encourage government attention towards promoting Charaichung as a major ecotourism destination.

- To revive cultural and ecological pride associated with the centuries-old sanctuary.

Majuli Island

Geographical Significance

- Majuli holds the title of the **world's largest river island**.
- It is created by the dynamic interactions of the **Brahmaputra** and its tributaries **Kherkutia Xuti** and **Subansiri**.

Economic Activities

- **Rice cultivation** is the primary occupation, with the island famed for its unique varieties such as **Komal Saul** (a soft rice) and **Bao Dhan** (deep-water rice).

Communities

- The majority of the population belongs to the **Mishing, Deori, and Sonowal Kachari** tribal communities, each contributing distinct cultural traditions to the island's vibrant identity.

Kaimur Wildlife Sanctuary

Recently, officials of the Forest Department conducted a raid in the Kaimur Wildlife Sanctuary, during which they recovered several deer heads, horns, and animal meat, and apprehended a poacher involved in illegal wildlife activities.

About Kaimur Wildlife Sanctuary

Kaimur Wildlife Sanctuary is situated in the Kaimur district of Bihar and lies within the well-known Kaimur Hills range. The hills, historically regarded as difficult to conquer, are also home to significant cultural and religious landmarks, including two ancient forts and the Mundeshwari Temple, considered among the oldest surviving Hindu temples in India.

Spread over an area of nearly **1,342 square kilometres**, it is the **largest wildlife sanctuary in Bihar**. The sanctuary is geographically bounded by the **Son River in the north** and the **Karmanasa River in the south**. Ecologically, it forms part of a larger landscape and is linked—through fragmented forest corridors along the Son basin—to the **Bandhavgarh–Sanjay–Guru Ghasidas–Palamau tiger meta-population region**.

The sanctuary's terrain includes scenic valleys marked by waterfalls such as **Karkat** and **Telhar**, along with water bodies like **Anupam Lake**. Archaeological evidence in the form of prehistoric rock art, inscriptions, and ancient structures has been discovered across the area. Notably, murals found in **Lakhania** and nearby hill tracts, along with **Pre-Cambrian fossils from the Salakhan region**, indicate the deep antiquity of human and natural history here. The region is also traditionally believed to be the place of origin of the **raon tribe**.

Flora: The sanctuary is dominated by **mixed dry deciduous forests**, supporting diverse vegetation. Prominent tree species include **Baakli, Mahua, Dhaak**, and extensive **bamboo** growth.

Fauna: Kaimur Wildlife Sanctuary hosts a wide range of wildlife such as **blackbuck, chinkara, four-horned antelope, blue bull (nilgai), sambar, chital, bears, and leopards**. In addition, reptiles like **pythons, ghariales/crocodiles**, and various species of snakes are also found in the sanctuary.

Death Valley National Park

Following unusually heavy and record-breaking rainfall, an ancient lake that had long disappeared has re-emerged in **Death Valley National Park**, drawing attention to the region's unique climatic and geological features.

About Death Valley National Park

Death Valley National Park is a vast desert valley located in the **southeastern part of California, USA**. It is widely recognised as the **hottest and driest region in North America**, with summer temperatures often exceeding **120°F (≈49°C)** and an average annual rainfall of barely **two inches**.

The park holds the record for the **highest air temperature ever measured in the United States—134°F (56.7°C)**—recorded on **10 July 1913**. It also exhibits striking elevation contrasts: **Badwater Basin**, at **282 feet below sea level**, is the lowest point in North America, while **Telescope Peak** rises sharply to about **11,049 feet**, creating extreme vertical relief within a short distance.

Death Valley is the **largest national park in the contiguous (continental) United States**. Geologically, it is a **rift valley (graben)** formed due to the subsidence of a large block of the Earth's crust between parallel, block-faulted mountain ranges on its eastern and western sides.

The park lies within the **Great Basin**, to the east of the **Sierra Nevada Mountains**, and forms part of the **northern Mojave Desert**. Its landscapes are remarkably diverse, ranging from **snow-clad mountain peaks and vast sand dunes to steep canyons, salt flats, and seasonal wildflower meadows**.

Despite extremely arid conditions and intense summer heat, Death Valley supports a surprising variety of life forms. Many plant and animal species have adapted to the harsh environment, and several are **endemic**, meaning they are found nowhere else in the world.

Death Valley National Park – Latest Update (Rephrased & Original)

Following unusually heavy and record-breaking rainfall, an ancient lake that had long disappeared has re-emerged in **Death Valley National Park**, drawing attention to the region's unique climatic and geological features.

Kheoni Wildlife Sanctuary

The forest department has recently confirmed the presence of two **Dholes (Wild Dogs)** inside the Kheoni Wildlife Sanctuary, marking an important wildlife observation for the region.

About Kheoni Wildlife Sanctuary

Location

- Situated in **Madhya Pradesh**.
- Ecologically linked to the **Ratapani Tiger Reserve** through natural wildlife corridors.

Vegetation

- Dominated by **dry deciduous forest ecosystems**, supporting diverse flora and fauna.

Fauna

- Home to species such as **leopards, sloth bears, hyenas, jackals, palm civets, nilgai**, and a rich

Flora

- Major plant species include **Teak, Tendu, Bamboo, Kusum, Kanak Champa, Ber, Karanj, Kaim, Kadamb**, and others.

Important Facts About Dhole

General Description

- A **carnivorous wild canid** species.
- Also known as the **Indian Wild Dog, Whistling Dog, Red Wolf, Red Dog, and Mountain Wolf.**

Habitat

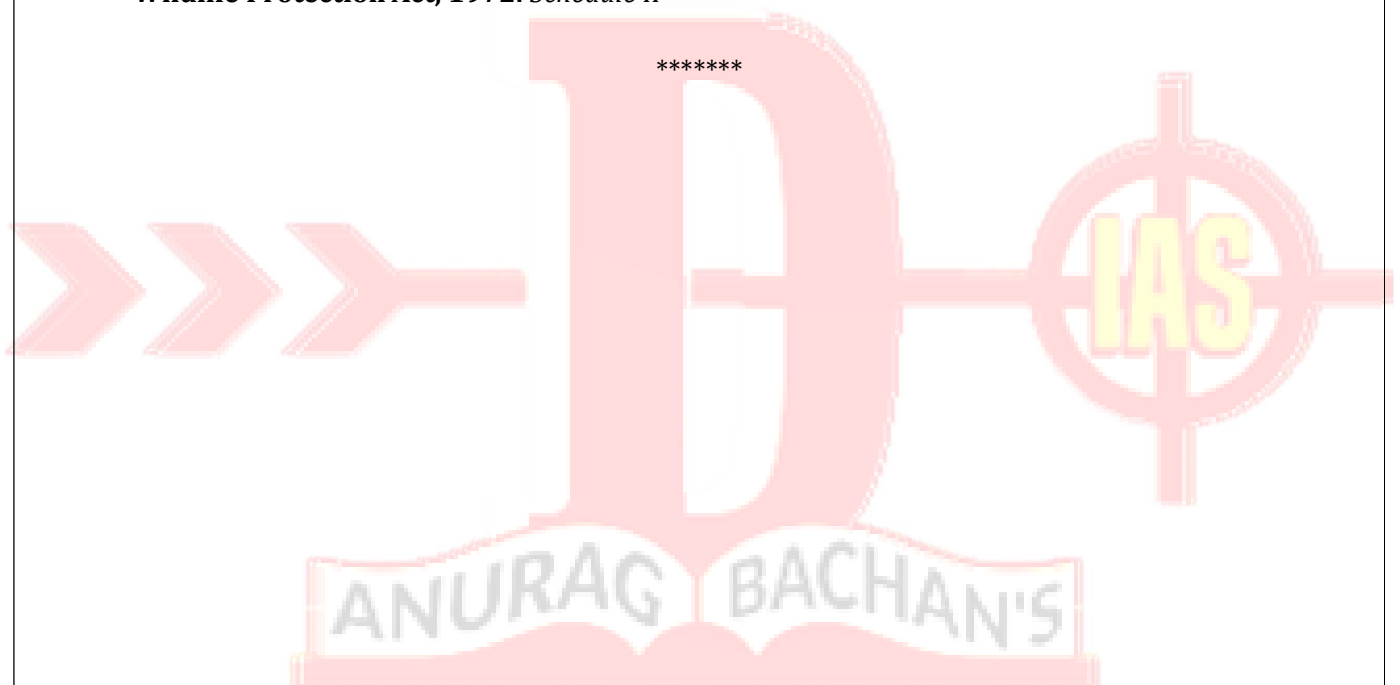
- Found across **dense forests, scrublands, steppes, mountainous terrain, and pine forests.**

Geographical Distribution

- Distributed throughout **Central, Eastern, and Southeastern Asia.**
- In India, their strongest populations occur in the **Western Ghats** and **Eastern Ghats.**

Conservation Status of Asiatic Wild Dog (Dhole)

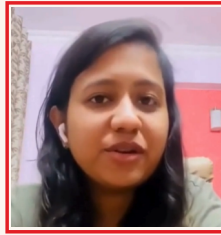
- **IUCN Red List:** *Endangered*
- **CITES:** *Appendix I*
- **Wildlife Protection Act, 1972:** *Schedule II*



SOME OF SUCCESSFUL GEMS WITH ANURAG SIR



AASTHA SINGH
Rank 61st (IAS)



ANJALI GARG
Rank 79th (IAS)



ANKUR
Rank 37th (IAS)



SANYA
Rank 84th (IAS)



SAWAN
Rank 89th (IAS)



JYOTINDER BAJWA
Rank 256th (IAS) / 20th (PCS)



ASHOK
Rank 325th (IAS)



AFTAAB RASOOL
Rank 412nd (IAS)



MANISH YADAV
(IAS)



KHUSHDIL SANDHU
Rank 5th (PCS)



AMAN CHAWLA
Rank 6th (PCS)



HARPREET SINGH SIDHU
(PCS)



PRIYA KHERA
Rank 45th (DSP)



JASPREET
(INDUSTRY OFFICER)



SANKALP GAUTAM
Rank 2nd (HAS)



TEHSEEN
(IPS)



SAMAY SINGH
(IPS)



AREEBA
Rank 109th (IPS)



MAYANK MISHRA
Rank 228th (IPS)



DILMIL SINGH
(IRS)



RANVIR SINGH
(IRS)



SONAKSHI (UPSC TOPPER)
SPECIALIST EXAM



PARAM BRAR
(PCS)



**NAVNEET KAUR AND
JYOTINDER BAJWA**
(SUCCESSFUL STUDENTS)

