NEXT IAS

THE CRUX

December Issue; 2025

Chief Editor

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Compilation of UPSC relevant news from 1st December to 30th December 2025

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PROTECTING ARAVALLI

The Supreme Court of India adopted a uniform definition of the Aravalli Hills as landforms rising 100 metres or more above the local relief, a move that raised serious environmental concerns.

Background

- **History of Mining:** For decades, **legal and illegal mining** of quartzite, marble and stone has taken place in the Aravalli region, especially in **Haryana and Rajasthan**, often violating environmental norms.
- **Supreme Court's Early Interventions:** The Supreme Court banned mining in notified forest areas of the Aravallis, 2002 onwards.
  - **May 2024:** SC directed **Delhi, Haryana, Rajasthan, and Gujarat** not to grant **final mining permissions** until a **uniform definition of the Aravalli Range** was evolved.
- This highlighted the problem of **multiple state-level definitions**, which enabled regulatory loopholes.

The "New Definition" of Aravalli

- **November 2025 Supreme Court Order:** On **20 November 2025**, the Supreme Court marked a significant intervention by accepting a **revised, uniform definition** of the Aravalli landform.
  - It defined an **"Aravalli Hill"** as any landform having **100 metres or more of local relief**, while an **"Aravalli Range"** was described as a **cluster of two or more such hills located within 500 metres of each other.**
- The objective behind this exercise was to resolve long-standing ambiguity arising from varying state-level definitions that had allowed regulatory loopholes.
- Alongside redefining the Aravallis, the Court imposed **restrictions on mining activities** in the region.
- SC directed MoEFCC to prepare a Management Plan for Sustainable Mining (MPSM).

Criticism Regarding New Definition

- **Environmental and Scientific Criticism:** Environmentalists argued that the 100-metre criterion would **exclude nearly 90% of Aravalli hill** formations, many of which are ecologically crucial despite lower elevation.
  - **Forest Survey of India (FSI) data** reportedly showed that only around 8–10% of hill formations meet this height threshold.
- **Ecological Continuity:** It is argued that ecosystems do not function in isolation and lower hills act as wind barriers, **wildlife corridors, and groundwater recharge zones** thus, fragmentation could allow mining "gaps" between protected areas.
- **Rapid Desert Spread Risk:** Erosion of the Aravalli barrier may enable the **Thar Desert to expand eastward**, worsening dust storms, land degradation, and aridity, and weakening **India's commitments under the UNCCD.**
- **Regulatory and Enforcement Gaps:** In the absence of detailed mapping and robust monitoring, the revised definition could **open regulatory loopholes**, complicating efforts to control illegal mining.

Government's Stand

- **Proposed Standard:**
  - The Ministry of Environment, Forest and Climate Change (MoEFCC) advocated for a definition where an "Aravalli Hill" must rise at least 100 metres above local relief.
  - **Rationale:** The government argues this replaces vague, inconsistent state-level criteria with a **"map-verifiable" and "objective" standard**. It maintains that by including supporting slopes and **clustering hills within 500 metres into "Ranges,"** the entire ecological unit remains protected.
- **Stance on Mining and Industry:**
  - The Centre directed states to enforce a complete ban on new mining leases until the Indian Council of Forestry Research and Education (ICFRE) finalizes a Management Plan for Sustainable Mining (MPSM).
  - **Strategic Exemptions:** The government supports exemptions for mining critical, strategic, and **atomic minerals (e.g., lithium, tungsten)** vital for national security and the green energy transition.
  - **Existing Operations:** The government maintains that existing legal mines should continue under strict regulation to prevent fueling "illegal mining mafias" that often arise during blanket bans.
- **Countering "Alarmist Claims":** Union Environment Minister stated there is **no "imminent threat"** to the Aravalli ecology, noting that mining would be **permissible in only 0.19% of the total 1.44 lakh sq km** Aravalli expanse.

Current Status

- **The "Stay" and Review (Dec 2025):** Following massive protests and reports that this rule could strip protection from **90% of the landscape** (hills < 100m), the Supreme Court **stayed its own order** on December 29, 2025.
- **Expert Panel:** The Supreme Court is now forming a **high-powered expert committee** of domain specialists (moving away from purely bureaucratic panels) to reassess the definition.
  - The new independent expert panel should **reassess geological and ecological data**, appropriate **criteria for defining the Aravalli hills** and Sustainable development and mining norms.

Constitutional and Legal Mandate

- **Article 21 (Right to Life):** The Supreme Court has interpreted this right to include the entitlement to a clean and healthy environment.
  - In **Subhash Kumar v. State of Bihar**, the court affirmed that the right to life encompasses pollution-free water and air.
- **Article 48A (Directive Principle of State Policy - DPSP):** Directs the state to protect and improve the environment and to safeguard forests and wildlife.
  - The Supreme Court in **M.C. Mehta v. Kamal Nath** noted the link between this state duty, citizen duties under **Article 51A(g)**, and the right to life under **Article 21.**
- **Article 51A(g) (Fundamental Duty):** Places a duty on every citizen to protect and improve the natural environment, including forests, lakes, rivers, and wildlife, and to have compassion for living creatures.
- **Article 14 (Right to Equality):** This article has been connected to environmental justice, particularly concerning the unequal impact of environmental issues on marginalized groups.

Landmark Supreme Court Observations

- **M.K. Ranjitsinh v. Union of India (2024):** Court recognized the "Right against the adverse effects of climate change" as a fundamental right under Articles 14 and 21.
- **Vanashakti v. Union of India (2025):** Sc ruled against **"post-facto environmental clearances,"** emphasizing the need for preventive environmental compliance.
- **Public Trust Doctrine:** Holds that the State acts as a trustee of natural resources for public benefit **(M.C. Mehta v. Kamal Nath).**
- **Precautionary Principle:** Requires the state to take preventive measures against environmental harm even without complete scientific certainty **(Vellore Citizens' Welfare Forum v. UOI).**
- **Sustainable Development:** Integrates ecological protection with development, incorporating principles like the **"Polluter Pays Principle".**

About Aravalli Mountain

- Often termed the **"Backbone of Northwest India,"** this ancient range is no longer just a geographical entity but a critical life-support system for over 100 million people.
- **Formation:** Formed during the **Proterozoic Era** (approx. 1.8 to 3.2 billion years ago), the Aravallis are among the **oldest fold mountain systems** globally, predating the Himalayas.
- **Extent:** Stretches roughly **670–800 km** from the Delhi Ridge, through Southern Haryana and Rajasthan, terminating at Palanpur/Ahmedabad in Gujarat.
- **Orogeny:** They were created by the collision of the Bundelkhand and Marwar cratons (Aravalli-Delhi Orogeny).
- **Highest Point: Guru Shikhar** (1,722 m) on Mount Abu, Rajasthan.
- **Hydrological Role:** It is a major watershed dividing the drainage of the Indus and Ganga. Rivers like the **Luni** and **Sabarmati** flow west, while the **Banas** and **Sahibi** drain east.

Ecological Significance (The "Green Shield")

- **Barrier to Desertification:**
  - Acts as a natural buffer preventing the eastward expansion of the **Thar Desert** into the Indo-Gangetic plains.
  - **FSI Report Findings:** Satellite data reveals that nearly 8% of the hills have vanished between 1975 and 2019 due to illegal quarrying and urbanization.
- **Groundwater Recharge:** The fractured rocks of the range function as a primary aquifer recharge zone for water-stressed regions like Delhi-NCR and Jaipur.
  - **Groundwater Contamination:** Recent 2025 studies by the **Central Ground Water Board** show elevated levels of lead, cadmium, and fluoride in mining belts, directly impacting public health in surrounding villages.
- **Biodiversity Hotspot:** Home to diverse fauna including leopards, striped hyenas, and the golden jackal.
  - Key protected areas include Sariska Tiger Reserve, Kumbhalgarh WLS, and Asola Bhatti WLS.

Socio-Economic & Historical Importance

- **Mineral Wealth:** Rich in copper, zinc, lead, and marble. The **Zawar mines** (Rajasthan) are among the world's oldest zinc smelting sites.
- **Historical Hub:** Sites like Chittorgarh, Kumbhalgarh and Amber Fort (UNESCO World Heritage) are nestled here.
- **Ancient Industry:** Evidence suggests copper mining in the Aravallis dates back to **4000 BCE**, supplying the Harappan civilization.

Way Forward

- **Scientific Identification & Mapping:** Carry out **comprehensive, standardised mapping** of hills, ranges, slopes, valleys, groundwater recharge zones, and wildlife corridors using **authoritative geospatial datasets.**
- **Risk-Based Mining Regulation:** Implement **graded, risk-based controls** on **mining activities**, with **clearly defined criteria** for prohibition, regulation, and monitoring.
- **Prevention of Illegal Mining:** Strengthen monitoring, surveillance, and enforcement through **inter-institutional coordination** and **technology-enabled tools.**
- **Ecosystem Restoration & Management:**
  - Promote restoration of degraded forests, grasslands, and mined areas based on **ecological suitability** and **long-term sustainability.**
  - **Aravalli Green Wall Project (2025–2026):** Launched as an extension of the **"Ek Ped Maa Ke Naam" campaign,** this ambitious initiative aims to create a 1,400 km long green corridor from Porbandar to Panipat to combat land degradation.
- **Indigenous Water Systems:** Revive traditional systems such as taankas, jhalaras, and talab-bandis to strengthen watershed management in Aravalli villages.

MARITIME SECURITY OF INDIA

The Indian Navy's updated Maritime Doctrine 2025 was recently released by Chief of Naval Staff Admiral Dinesh Tripathi.

What is Maritime Security?

- Maritime security involves protecting the nation's sovereignty from threats arising from the oceans and seas.
- It includes protecting coastal areas, safeguarding the available ocean resources such as fish, offshore oil and gas wells, port facilities, etc.
- It also means maintaining freedom at sea for the movement of our ships and facilitating and protecting trade.

Maritime Threats

1. Illegal Exploitation of Natural Resources
Unsustainable or unlawful extraction of fish, hydrocarbons, and seabed minerals

2. Illegal Activity in Protected Areas
Poaching, unregulated tourism, and other activities in marine protected zones

3. Marine Pollution
Oil spills, plastic waste, and chemical discharge harming ocean ecosystems

4. Prohibited Imports and Exports (Smuggling)
Trafficking of contraband, weapons, narcotics, and banned goods by sea

5. Compromise to Biosecurity
Spread of invasive species and diseases throughballast water and marine trade

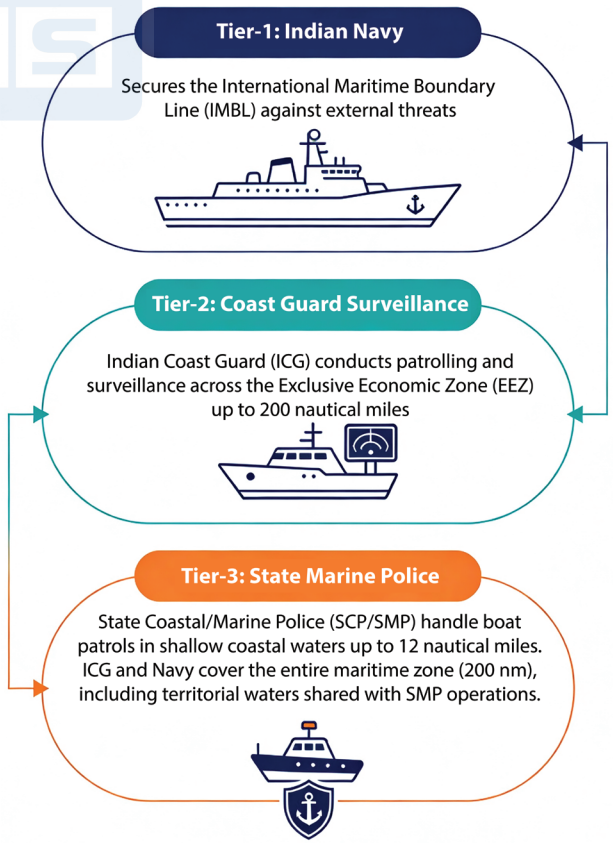
6. Piracy, Robbery Violence at Sea
Armed attacks on ships, crews, and cargo in vulnerable sea lanes

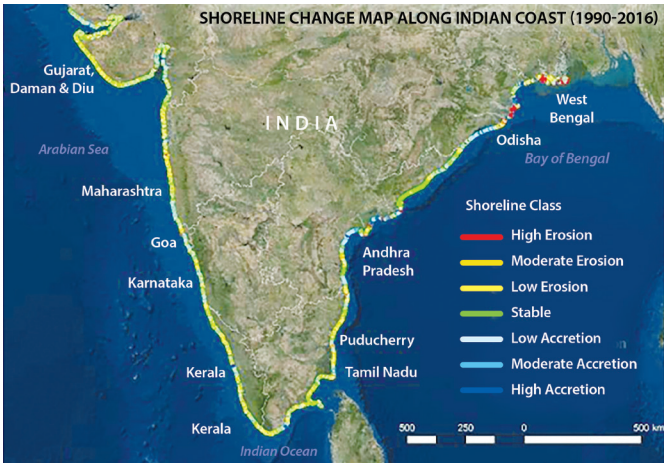
7. Maritime Terrorism
Use of the sea to plan, stage, or execute terrorist attacks

Elements of Maritime Security

- **International and National Peace:** Ensuring that seas are **not used for armed conflict or coercion**, thereby supporting global stability and a secure regional order.
- **Protection of Sea Lanes of Communication:**
  - Safeguarding major shipping routes so that trade, energy supplies, and naval movements remain safe, open, and uninterrupted.
  - **Cyber Maritime Threats:** Threats like Automatic Identification System (AIS) spoofing and jamming endanger ports and SLOCs by faking ship positions, enabling smuggling and attacks, as in Persian Gulf incidents. Protection uses authentication, anomaly detection, radar verification, and IMO guidelines.
- **Sovereignty, Territorial Integrity and Political Independence:** Defending a state's maritime zones and coastal areas from encroachment, interference, or violation by other state and non-state actors.
- **Protection from Crime at Sea:** Preventing and responding to piracy, armed robbery, trafficking, smuggling, and terrorism in maritime spaces.
- **Access and Security to the Resources at Sea:** Securing lawful rights over **fisheries, hydrocarbons, and seabed minerals** so they can be sustainably exploited without external threats.
- **Security of Seafarers and Fishermen: Protecting the lives, rights, and livelihoods** of those who work or depend on the sea through safety norms, rescue mechanisms, and welfare measures.
- **Environmental Protection:** Preventing and mitigating marine pollution, over-exploitation, and ecological damage to maintain healthy and resilient ocean ecosystems.
- **Expansion of Chinese Naval Power in IOR:** Increased naval vessel deployments in the region in terms of both number and duration.
  - **Maritime Domain Awareness Activities:** Deployment of Chinese research and survey vessels to gather sensitive oceanographic and marine data under the guise of scientific research.
  - **Strategic Port Development Near India:** China is actively involved in developing ports and infrastructure in littoral states of the IOR, including those close to India's maritime boundaries.

Three-Tier Coastal Security Framework of India





Importance of Maritime Security for India

- **India's National Defence:**
  - The geography of India also makes maritime security an important concern for Indian policy makers.
  - India has a coastline of about 11,100 km. Overall, Andaman and Nicobar Islands have the longest coastline, which is 3083 km, and among states Gujarat has the longest coastline (2340 km).
- **Universal Threats:** This vast coastline presents numerous security challenges like piracy, illegal landing of arms and explosives, infiltration, use of sea and offshore islands for criminal activities, drug and human trafficking, and smuggling.
- **Terrorism Risks:** Maritime security became critical for India post 26/11 to prevent sea-borne terrorism, protect its long coastline, ports, and coastal cities, and ensure safe trade routes.
- **Environmental Protection:** Large-scale ocean commerce inevitably causes ecological damage, necessitating robust security measures.
- **Trade Route Security:**
  - India's exports/imports predominantly traverse Indian Ocean shipping lanes, making Sea Lanes of Communication (SLOCs) protection critical in the 21st century.
  - **Climate-Security Nexus:** Rising sea levels (SLR) threaten Mumbai/Chennai ports with flooding and land loss, amplifying climate-security risks.
  - **Humanitarian Assistance and Disaster Relief (HADR)** operations via Navy/Coast Guard bolster resilience for Viksit Bharat@2047's maritime goals.

Strategic Importance of Maritime Boundaries

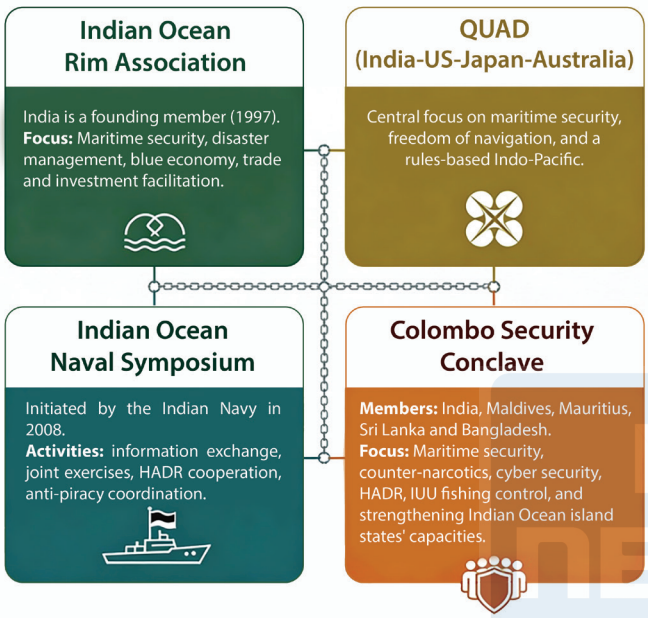
- The Indian Ocean Region (IOR) is of immense strategic importance to India. Most of the country's oil and gas is imported through the sea. There is a continuous increase in trade with the countries that surround the Indian Ocean region.
- The Indian Ocean is considered the most strategically important in the world because more than 80 % of the world's seaborne oil trade goes through the Indian Ocean choke points:
  - 40% passes through the Strait of Hormuz,
  - 35% through the Strait of Malacca and
  - 8% through the Bab el-Mandab Strait.

India's Strategic Responses

- **Post-26/11 Maritime Security Reforms:** Post 26/11, coastal security was overhauled, with the Indian Navy made overall in charge of maritime, coastal, and offshore security, assisted by Coast Guard and State agencies; a **National Command Control Communications and Intelligence (NC3I)** network is being established for integrated command, control, and intelligence.
- India's approach is rooted in the **SAGAR (Security and Growth for All in the Region, 2015) doctrine**, which has evolved into **MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions, 2025)**, as announced by PM Modi in Mauritius.
  - This has expanded the outreach to the broader Global South with emphasis on **trade, capacity building, technology sharing,** and **sustainable development.**
  - India is a preferred security partner in HADR (Humanitarian Assistance and Disaster Relief), Maritime Domain Awareness (MDA), and development.
- **UNCLOS Commitment:** India adheres to **UNCLOS 1982,** recognizing Internal Waters, Territorial Sea, Contiguous Zone, EEZ, and High Seas for equitable maritime rights.
- **Data Fusion Mechanism:** India has established an **International Fusion Centre (IFC)** for IOR (Gurugram, 2018), run by the Indian Navy and Indian Coast Guard, that shares commercial shipping threat data for enhanced Maritime Domain Awareness.
- **Anti-Piracy Engagement:** Indian Navy actively participates in the UNSC-mandated Contact Group against Somalia piracy since 2007, protecting Western IOR shipping.
- **Indo-Pacific Initiative:** IPOI (2019) focuses on maritime security, ecology, resources, disaster management, connectivity, and trade via the **East Asia Summit** platform.
- **Naval Modernisation Drive:** Indigenous warships like INS Vikrant, INS Visakhapatnam boost domain awareness and deterrence, aligned with **Sagarmala** and **Maritime India Vision 2030.**
- **Regional Diplomacy:** India counters Chinese dual-use (military use of developed ports) by making partners aware of security risks, strengthening collaborative IOR architecture.
- **India on Militarisation of the IOR:** India asserts that Militarisation of the Indian Ocean Region is not desirable and will adversely impact security in the Indian Ocean and the wider Indo-Pacific.

- India upgrades **Information Fusion Centre – Indian Ocean Region (IFC-IOR)** with AI/ML like **MANTRA (Maritime Analytics Tool for Regional Awareness)**, for threat detection.
- **Bilateral Maritime Domain Awareness (MDA)** pacts with France, the US, and Japan enhance info sharing, surveillance for IOR security.

➲ **India's Multilateral Engagements in the IOR:**



Indian Maritime Doctrine 2025

Overview

➲ The Indian Maritime Doctrine is the Navy's apex guidance document, defining principles for its roles, strategy, and employment across the conflict spectrum.

➲ First issued in 2004, it was revised in 2009 and amended in 2015, moving from "Freedom to Use the Seas" to a greater focus on anti-piracy, energy security, and post-26/11 hybrid threats.

Key Features of 2025 Edition

➲ Reflects major shifts in India's maritime environment and strategic outlook since 2015, including **grey-zone and coercive tactics.**

➲ Formally recognises **"no-war, no-peace"** alongside **peace, limited conflict, and full war**, as a distinct operational category for the first time, and introduces multi-domain operations integrating space, cyber, and undersea capabilities.

➲ Emphasises jointmanship with other services and aligns maritime strategy with Viksit Bharat 2047, Sagarmala, PM Gati Shakti, Maritime India Vision 2030, Maritime Amrit Kaal Vision 2047, and MAHASAGAR.

Way Ahead

➲ **Strengthening MAHASAGAR and Regional Role:**

- MAHASAGAR needs institutional mechanisms, regular joint exercises, and structured technology sharing with partners.
- India must tackle threats (piracy, climate risks, cyber threats at sea) through cooperative frameworks and inclusive regionalism to balance major powers.
- **People-Centric and Environmental Security Focus:** Strengthen coastal community resilience, search-and-rescue cooperation, and disaster preparedness while integrating climate adaptation into maritime security planning.

➲ **UNSC Five-Point Maritime Security Agenda:** Implement the UNSC's five-point agenda fully:

- Ensure unhindered, lawful maritime trade.
- Resolve maritime disputes peacefully, under international law.
- Promote responsible, sustainable connectivity projects.
- Jointly counter threats from non-state actors and natural disasters.
- Protect the marine environment and resources as shared global assets.

➲ **Global Governance and Maritime Institutions:**

- Build **consensus for a dedicated maritime security mechanism** under UN auspices to coordinate responses and norms.
- Universal participation in treaties like UNCLOS is essential for common definitions, cooperation, and predictable behaviour at sea.

➲ **Rule-of-Law–Based Approach:** Re-examine how effectively UNCLOS provisions are implemented, especially on:

- Freedom of navigation and overflight.
- Sustainable resource use in EEZs and high seas.
- Peaceful dispute resolution rather than coercion or unilateral actions.

➲ **Role of Private Sector and Blue Economy:**

- Encourage private participation in shipping, ports, offshore renewables, fisheries management, and marine biotechnology to deepen the Blue Economy.
- Use the maritime domain for critical submarine fibre-optic networks, strengthening the digital economy and resilient global connectivity.

➲ **Capacity Building and Technology Innovation:** Invest in regional capacity building through training, intelligence sharing, and adoption of AI, satellites, and drones for maritime domain awareness.

VB–G RAM G ACT 2025

The government has enacted the Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) — or VB–G RAM G Act, replacing MGNREGA with a modern, productivity-oriented rural employment framework.

> *The best way to uplift the poor is to make them the agents of their own progress.*
>
> **Mahatma Gandhi,** Father of the Nation

Background

- The **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**, enacted in **2005**, marked a radical shift in India's approach to poverty alleviation moving from discretionary welfare to a rights-based employment guarantee.
- It provided every rural household the right to atleast **100 days** of unskilled manual work annually, acting as a stabiliser during crises such as the **2008** global financial downturn and the **COVID-19 pandemic**, when participation rose 40% above pre-pandemic levels (Centre for Science and Environment, 2022).
- By FY 2020–21, it reached **9.1 crore households** and injected over **₹73,000** crore in rural wages (MoRD, 2021). Yet, issues like fund leakages (₹193.67 crore in FY 2024–25, CAG), delays, and low completion of 100 days (7.6%, MoRD, 2025) limited its developmental impact.
- This uneven performance exposed MGNREGA's welfare bias, weak monitoring, and poor linkage with productivity goals, prompting the need for a digitally integrated, development-oriented replacement.
- To modernise this framework, the **Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) — or VB–G RAM G Act 2025** — was introduced to align employment generation with productivity, infrastructure creation, and digital governance, consistent with the Viksit Bharat 2047 vision.

MGNREGA – Rights-Based and Demand-Driven

- **MGNREGA** guaranteed employment on demand **within 15 days** or unemployment allowance — a legal right unique among social protection laws.
- It empowered Gram Panchayats to plan and implement local works and improved inclusion — **56% women participation and 40% SC/ST representation** (MoRD, 2023). However, the system's open-ended funding, weak asset durability, and limited convergence with development schemes reduced long-term economic value.
- A **World Bank (2023) assessment** found that about 30% of projects lacked linkage with state or national growth priorities, revealing its welfare bias over productivity.

MGNREGA Performance Snapshot (FY 2024–25)

Category	State/UT	Households Completing 100 Days of Work	Remarks
Best Performer	Tamil Nadu	17.8%	Strong Panchayat capacity, digital monitoring, timely fund flow, and gender-inclusive participation (61% women workers).
Best in North-East	Tripura	14.6%	Effective decentralised planning and regular wage disbursal mechanisms, despite limited fiscal capacity.
Worst Performer	Bihar	3.8%	Structural governance deficits, high corruption perception, and very low administrative capacity.
Worst Performer (NE)	Assam	5.5%	Difficult terrain and poor digital connectivity affecting attendance tracking.
National Average	All India	7.6%	Reflects systemic underperformance, weak convergence with development planning, and uneven state capacity.

Source: Ministry of Rural Development Dashboard, 2025

VB–G RAM G Act ,2025 – Core Provisions

- **Extended Employment Guarantee:** From 100 to 125 Days
  - The Act raises guaranteed workdays by 25%, providing 125 days per household.
  - At ₹240/day (RBI, 2024), this adds ₹12,000 annually to household income, stabilising consumption in rural India, where 47% of private expenditure originates (NSSO, 2023).
- **Agricultural Pause for Labour Optimisation:**
  - States can suspend public works for up to **60 days** during sowing and harvesting to ensure farm labour availability.
  - This may relieve agricultural labour shortages reported by 38% of farmers (PLFS, 2022), though landless workers — 36% of rural households (NSSO, 2023) — risk losing incomes during these pauses without compensatory support.
- **Fiscal Federalism: Shared Responsibility (60:40 Model):**
  - VB–G RAM G converts the scheme into a **Centrally Sponsored Scheme (CSS):**
    - 60:40 Centre–State cost sharing,
    - 90:10 for Himalayan and North-Eastern States,
    - 100% Central support for Union Territories.
  - This model promotes ownership but may strain fiscally weaker States like Bihar or Odisha, where the revenue-to-GSDP ratio is below 8% (RBI, 2024).
- **Budget-Capped Allocations for Predictability:**
  - Replacing MGNREGA's open-ended "labour budget," the Bill introduces normative allocations fixed by the Centre.
  - While this enforces fiscal discipline, it reduces flexibility — unlike 2020, when MGNREGA's funding rose by ₹11,500 crore during the lockdown (MoF, 2021). The capped model could limit responsiveness in future crises.
- **Technology-Driven Governance:** The Viksit Bharat Rural Infrastructure Stack
  - The Bill creates a digital framework connecting local plans with the **PM Gati Shakti Master Plan** under **four domains — water security, rural infrastructure, livelihoods, and disaster resilience.**
  - **Monitoring tools** like AI-based fraud detection, GPS tracking, and biometric attendance aim to ensure transparency.
  - **NITI Aayog (2024)** estimates these tools can save 1.6% of GDP annually by reducing leakages and inefficiencies.

Comparative Analysis: MGNREGA vs VB–G RAM G Act 2025

Dimension	MGNREGA	VB–G RAM G Act 2025	Analytical Insight / Policy Implication
Legal & Institutional Framework	Statutory right to work; legally enforceable through the Act.	Programmatic guarantee dependent on policy discretion and budget.(employment is assured through a government scheme or program, not as a legal right)	Shift from rights-based social security to executive-led developmental planning, reducing legal accountability.
Fiscal Design & Centre–State Dynamics	100% wage cost borne by Centre.	60:40 Centre–State (90:10 for NE/Himalayan States).	Encourages State participation but risks uneven implementation as fiscally weaker States may face constraints.
Planning & Governance Mechanism	Decentralised Gram Sabha and Panchayat-led planning.	Integrated digital planning via PM Gati Shakti master plan.	Enhances efficiency and alignment with national priorities but reduces local autonomy and flexibility.
Budgetary Philosophy & Flexibility	Demand-driven; allocations expand automatically during distress.	Capped, normative state-wise allocations based on fixed parameters.	Brings fiscal discipline and predictability but weakens counter-cyclical role during crises.
Technology & Monitoring Approach	Manual muster rolls; periodic audits prone to leakages	AI-based tracking, GPS monitoring, biometric attendance, public dashboards.	Improves transparency and real-time accountability but risks exclusion in low-connectivity regions (68% coverage, TRAI 2024).
Social & Developmental Outcomes	Focus on short-term livelihood protection through small-scale works.	Focus on productive, climate-resilient, and infrastructure-linked employment.	Marks a paradigm shift from welfare-driven employment to growth-oriented and sustainable rural transformation.

Major Concerns

- **Unequal Fiscal Capacity:** With 17 States exceeding the 3% fiscal deficit ceiling (RBI, 2024), co-funding obligations could hinder uniform implementation and deepen regional disparities.
- **Dilution of the Right to Work:** Capping expenditure transforms a legally guaranteed entitlement into a conditional policy promise, restricting access when rural job demand rises — typically 25–30% during distress years (CSE, 2022).
- **Technological Barriers and Exclusion:** While digitisation strengthens accountability, rural broadband coverage stands at 68% (TRAI, 2024), and 8–10% Aadhaar mismatch rates persist (UIDAI, 2023). Workers without reliable access could face exclusion.
- **Agricultural Pause Risks:** The 60-day pause may protect crop cycles but jeopardises landless workers' incomes. Without clear compensatory measures, this could amplify seasonal vulnerability.
- **Institutional Weakness:**
  - MGNREGA delivered an average of 46.4 workdays per household (MoRD, 2024) — a reflection of local administrative bottlenecks.
  - Without strengthened Panchayat capacity, the new model risks similar underperformance.

Global Insights – Lessons from Ethiopia and Brazil

- **Ethiopia's Productive Safety Net Programme (PSNP)** provides seasonal employment tied to ecological restoration, benefiting 8 million households and reducing food insecurity by 30% (World Bank, 2022).
- **Brazil's Bolsa Verde Programme (2011)** integrates income support with environmental stewardship, rewarding rural families for forest conservation.
- India's VB–G RAM G similarly links employment to sustainability and productivity, but on a far larger scale — leveraging India's digital infrastructure to reach over 6.5 lakh villages.

Strengths and Opportunities

- **Rural Income Expansion:** The 25% increase in workdays could inject ₹80,000 crore annually into the rural economy (CRISIL, 2025), enhancing household liquidity and rural consumption.
- **Productive and Climate-Resilient Infrastructure:**
  - By aligning works with national infrastructure priorities, the Act emphasises durable, climate-smart assets.
  - FAO–ICAR (2023) found such investments can boost agricultural yields by 18–22% in semi-arid zones.
- **Governance Transformation:** AI-based audits, digital dashboards, and weekly wage cycles can curb leakages (currently 3–5% of expenditure, CAG, 2023) and ensure real-time transparency.
- **Inclusive Development:** Provisions for single women, elderly, disabled, and transgender persons reflect a socially inclusive approach aligned with SDG 10 (Reduced Inequalities).
- **Women-led SHGs**, handling ₹2.7 lakh crore in microcredit (NABARD, 2024), could act as decentralised implementation partners, enhancing accountability.

Path Ahead – Building a Sustainable and Inclusive Rural Employment Framework

- **Strengthen Fiscal Flexibility and Equity:**
  - Introduce a National Employment Contingency Fund to automatically expand coverage during droughts or economic shocks.
  - Ensure differential funding support for low-income States to prevent uneven outcomes.
- **Preserve Decentralised Planning:**
  - Integrate digital planning tools with Gram Sabha decision-making, maintaining local ownership and ensuring that technology enhances — not replaces — participatory governance.
- **Bridge the Digital Divide:**
  - Develop offline-compatible attendance systems and local facilitation centres.
  - Public investment in rural broadband under the BharatNet Mission should be synchronised with scheme implementation to avoid digital exclusion.
- **Build Institutional and Human Capacity:**
  - Train at least 1 lakh Panchayat functionaries annually through State Institutes of Rural Development (SIRD) and National Centre for Good Governance (NCGG). to improve project design, monitoring, and social audits.
  - Encourage convergence with other rural missions (PMAY-G, NRLM) for efficiency.
- **Protect Labour Rights and Social Security:**
  - Retain "work on demand" as a legal entitlement, ensuring fiscal caps do not erode workers' guaranteed rights.
  - Introduce portable job cards and social protection linkages (insurance, pension) to ensure continuity of benefits.
- **Focus on Outcome Measurement:**
  - Shift from "number of days worked" to "quality and productivity of assets created."
  - This will redefine success indicators and ensure that rural employment translates into enduring community development.

SHANTI ACT 2025

President Droupadi Murmu approved the SHANTI Act 2025, modernising India's nuclear governance and opening private participation.

> *No power is as peaceful and yet as powerful as nuclear energy, when guided by human wisdom.*
>
> **Dr. Homi J. Bhabha,** Nuclear Physicist

Understanding the SHANTI Act – The Turning Point

- The Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025 marks the most comprehensive reform of India's nuclear policy since independence.
- It seeks to expand nuclear capacity to 100 gigawatts (GW) by 2047, enhance safety and regulation, and attract private and global investment — while ensuring that core nuclear control remains firmly with the Indian state.

Background – From State Monopoly to Strategic Modernisation

India's nuclear programme, initiated by Dr. Homi Jehangir Bhabha in the 1950s, was founded on the principles of self-reliance, technological sovereignty, and national security.

- **Past Framework: The Monopoly Model:**
  - For decades, India's nuclear energy generation was managed solely by the Nuclear Power Corporation of India Limited (NPCIL) and Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) under the Department of Atomic Energy (DAE).
  - While this ensured strategic control and non-proliferation compliance, it also led to financial dependence, bureaucratic rigidity, and frequent project delays.
  - For example, the Kudankulam Nuclear Power Project in Tamil Nadu faced cost overruns of over 50% and delays of more than seven years (Comptroller and Auditor General of India – CAG, 2023).
- **Need for Reform:**
  - India's electricity demand is projected to grow at 6% annually until 2040 (International Energy Agency – IEA, 2024), yet per capita consumption remains only about one-third of the global average.
  - With nuclear power currently contributing only 3% of India's total electricity mix, expansion was constrained by limited public investment and slow project execution.
  - The SHANTI Act was introduced to shift from an entirely state-controlled structure to a regulated public–private partnership model, combining public accountability with private efficiency and innovation.

Key Acts Replaced

Old Act	Year	Problem	How SHANTI Fixes it
Atomic Energy Act	1962	Restricted nuclear energy generation to government entities; barred private and foreign participation	Repealed and replaced. Allows private and global firms to operate under strict government licensing.
Civil Liability for Nuclear Damage Act	2010	Imposed absolute operator liability, discouraging investment and supplier participation.	Introduces a tiered liability system (₹100 crore to ₹3,000 crore) supported by insurance and a central compensation fund.

Key Provisions and Their Impacts

- **End of State Monopoly:**
  - For the first time, private Indian companies and joint ventures can build, own, and operate nuclear power plants under central licensing.
  - This reform expands capacity, fosters competition, and could reduce overall project costs by 15–20% (CAG, 2024).
  - It mirrors the success of the telecom liberalisation reforms of the 1990s in enhancing efficiency and innovation.
  - Companies like Larsen & Toubro Limited and Tata Power Company Limited are expected to play a pivotal role in small modular reactor projects under state regulation.
- **Foreign Direct Investment (FDI) up to 49%:**
  - The Act allows up to 49% FDI in non-sensitive nuclear activities, bringing advanced technologies from global partners such as Électricité de France (EDF), Rosatom (Russia), and Westinghouse Electric Company (US).
  - This supports India's investment target of ₹10 lakh crore NITI Aayog, 2024, enabling the revival of large projects like Jaitapur (9.6 GW) and the Andhra Pradesh–Westinghouse collaboration.
- **Tiered Liability and Insurance-Backed Protection:**
  - The new tiered liability structure sets operator liability between ₹100 crore and ₹3,000 crore based on reactor capacity.

Key Bodies Involved		
Institution	**Role under the SHANTI Act**	**Why Important**
Department of Atomic Energy (DAE)	Overall policy, R&D, and strategic oversight	Ensures national security and fuel cycle sovereignty.
Nuclear Power Corporation of India Limited (NPCIL)	Public sector reactor operator.	Will collaborate in joint ventures with private firms under government supervision.
Atomic Energy Regulatory Board (AERB)	Now an independent statutory regulator reporting directly to Parliament.	Guarantees safety, licensing, and environmental compliance.
Atomic Energy Redressal Advisory Council	New grievance and dispute resolution body.	Handles operational and safety issues transparently.
Nuclear Liability Fund	Insurance-backed compensation mechanism.	Ensures victim protection beyond operator liability limits.

- This framework is backed by mandatory insurance and a Nuclear Liability Fund to provide additional compensation when damages exceed operator limits.
- By aligning with the Vienna and Paris Conventions on Nuclear Liability, the system reduces financial uncertainty for investors while maintaining victim safeguards.

➲ **Statutory Independence for the Atomic Energy Regulatory Board (AERB):**

- The AERB, previously under the DAE, now functions as an independent statutory body accountable to Parliament.
- This reform aligns Indian nuclear oversight with International Atomic Energy Agency (IAEA) standards, ensuring transparent and credible safety regulation.
- It also prevents potential conflicts of interest between operators and regulators, thereby enhancing public confidence in nuclear governance.

➲ **Expansion of the Nuclear Value Chain:**

- Private and international firms can now participate in atomic mineral exploration, nuclear fuel fabrication, reactor component manufacturing, and waste management.
- This supports Atmanirbhar Bharat (Self-Reliant India) by promoting domestic innovation in nuclear technologies and reducing reliance on uranium imports from Russia and Kazakhstan.
- For instance, Indian Rare Earths Limited may collaborate with Vedanta Limited to process thorium—a resource in which India holds nearly 25% of global reserves.

➲ **Promotion of Small Modular Reactors (SMRs):**

- The Act encourages the development of Small Modular Reactors (SMRs)—compact, factory-built reactors ranging from 50 to 300 megawatts (MW).
- SMRs are safer, quicker to deploy, and suitable for smaller grids or remote areas.
- Indian companies such as Tata Power and Reliance New Energy Limited are exploring SMR deployment under the ₹20,000 crore national mission launched in 2024.
- This approach could lower capital costs, decentralise clean power generation, and strengthen India's industrial energy infrastructure.

Strategic Rationale – Why the Act Matters		
Dimension	**Explanation**	**Impact / Data**
Energy Security	Diversifies India's energy mix and reduces dependence on imported fossil fuels (84% of oil and 46% of coal are imported).	Enhances strategic autonomy and stabilises energy prices.
Climate Goals	Nuclear emits <15 grams of carbon dioxide per kilowatt-hour, compared to ~800 grams for coal (IEA, 2024).	Supports India's Net Zero by 2070 target.
Economic Growth	Every ₹1 invested in nuclear energy generates ₹3.2 in downstream economic activity (National Council of Applied Economic Research – NCAER, 2024)	₹10 lakh crore investment could create nearly 200,000 skilled jobs.
Industrial Decarbonisation	Provides stable, clean power for high-emission sectors such as steel, cement, and fertilisers.	Could cut industrial emissions by 18–22% (Food and Agriculture Organization – FAO, and Indian Council of Agricultural Research – ICAR, 2023).
Strategic Leverage	Expands India's role in global nuclear supply chains and civil nuclear diplomacy.	Strengthens India's influence in clean energy partnerships.

Challenges and Concerns

- **Safety Oversight:**
  - Private entry raises concerns over profit-driven compromises on safety.
  - Expanding the AERB's technical and human capacity is critical; current staffing (~350 technical personnel, DAE, 2024) is insufficient for sectoral expansion.
  - Collaborative audits with the International Atomic Energy Agency (IAEA) and public safety dashboards could reinforce transparency.
- **Accountability Gaps:**
  - Critics argue that relaxing supplier liability may reduce accountability in the event of accidents.
  - Strong enforcement of insurance mechanisms and transparent fund management under the Nuclear Liability Fund will be essential to maintain trust.
- **Transparency and Right to Information (RTI) Limitations:**
  - Certain nuclear information is exempt from the Right to Information (RTI) Act, 2005, due to national security.
  - However, limited disclosures risk eroding public confidence. Regular publication of safety and audit reports to Parliamentary Standing Committees can balance secrecy with accountability.
- **Public Acceptance and Communication:**
  - Post-Fukushima scepticism persists in rural and coastal regions.
  - Creating Nuclear Communication Cells for citizen outreach and awareness will be key to building informed public support.

Way Forward – Balancing Innovation and Safety

- Strengthen the Atomic Energy Regulatory Board (AERB) with greater autonomy, funding, and recruitment of domain specialists.
- Pilot Small Modular Reactor (SMR) projects first to test regulatory frameworks and private participation.
- Establish a National Nuclear Insurance Pool under the General Insurance Corporation of India (GIC Re) for risk management.
- Integrate nuclear power into the National Energy Transition Roadmap (2025–2047) for energy security and grid stability.
- Build public trust through Nuclear Communication Cells and local stakeholder consultations around project sites.

India's Nuclear Energy Landscape

Category	Status / Data (as of 2025)
Operational Reactors	24 reactors generating 8,180 MW
Under Construction	10 reactors adding 8,000 MW
Target (2047)	100 GW – a twelvefold increase
Fuel Source	Indigenous uranium + imports from Russia, Canada, and Kazakhstan
Key Operators	NPCIL and BHAVINI under the Department of Atomic Energy (DAE)
Recent Development	Life extension of Tarapur Units 3 & 4 approved in 2024
International Collaboration	6×1,208 MW project with the United States in Andhra Pradesh (Westinghouse–NPCIL)

Global Comparisons – Learning from Others

Country	Model	Lesson for India
France	70% of electricity from nuclear; public–private Électricité de France (EDF) model.	Demonstrates efficiency through public oversight and private management.
United States	Private-led innovation under federal regulation (NuScale Small Modular Reactors).	Shows how modular design and private R&D can cut costs and enhance safety.
United Kingdom	Public–Private Partnership model (Hinkley Point C Project).	Emphasises transparent risk-sharing and contract stability.

India's SHANTI framework blends these models—retaining state control over sensitive domains while leveraging private innovation, financing, and global collaboration.

EVOLUTION OF GOOD GOVERNANCE IN INDIA

India observed Good Governance Day on December 25, reaffirming its commitment to transparent, accountable, and citizen-centric governance.

Background

- Governance in India has undergone a profound structural and philosophical evolution—from a colonial apparatus of control to a welfare-oriented state, then a reform-driven bureaucracy, and now toward a digital, participatory, and data-empowered ecosystem.
- Governance 4.0 represents the fourth phase of this trajectory: a convergence of technology, transparency, and trust where state–citizen interaction is redefined through digital tools, evidence-based decision-making, and participatory engagement.
- It reflects a decisive transition from hierarchical rule to networked governance, where citizens are stakeholders rather than subjects.

Evolution of Governance in India

Phase	Nature	Core Objective
Governance 1.0	Colonial administration	Order and extraction
Governance 2.0	Post-independence welfare model	Development and inclusion
Governance 3.0	Liberalisation and reform era	Efficiency and performance
Governance 4.0	Digital India phase	Transparency, participation, empowerment

Understanding Governance and Good Governance

- **Governance** refers to the process and structure through which decisions are made and implemented to manage a nation's political, economic, and social resources. It includes the interaction between the government, private sector, and civil society in shaping public policy and delivering services.
- **Good Governance**, as defined by the United Nations, embodies the principles of participation, transparency, accountability, effectiveness, equity, and adherence to the rule of law. It ensures that public institutions function efficiently, respond to citizens' needs, and use resources responsibly.
- In essence, good governance transforms administration from a system of control into a mechanism of service and empowerment — forming the foundation of Governance 4.0 in India.

Digital Governance – The Technological Backbone of Reform

- Digital governance forms the operational core of Governance 4.0. It transforms public administration through speed, efficiency, and transparency, enabling data-driven decision-making.
- **Major digital initiatives exemplify this transformation:**
  - **Government e-Marketplace (GeM)** has revolutionised procurement, handling ₹4.4 lakh crore in transactions and saving the exchequer over ₹30,000 crore annually through transparent bidding.
  - **CPGRAMS,** the Centralised Public Grievance Redress and Monitoring System, resolves 96% of grievances within 45 days, increasing citizens' trust in the administration.
  - **Direct Benefit Transfer (DBT)** has saved ₹1.78 lakh crore by eliminating ghost beneficiaries and delivering subsidies directly to verified citizens.
  - **UMANG App** integrates over 1,600 government services, enabling access through a single digital platform.
  - **e-Office** has digitised government workflows, reducing file processing time by nearly 50%.
- For example, through DBT, welfare schemes like PM-KISAN and Ujjwala now transfer money directly to beneficiaries' bank accounts, ending middlemen corruption and ensuring dignity in welfare access.

Good Governance Day

- Celebrated on December 25, Good Governance Day honours ***Atal Bihari Vajpayee,*** whose philosophy of governance was "pro-people, proactive, and participatory."
- It symbolises the fusion of ethical governance and administrative efficiency, emphasising that state power derives legitimacy not merely from authority, but from justice, accountability, and empathy.
- Vajpayee's Pradhan Mantri Gram Sadak Yojana (PMGSY) exemplifies this ethos. By linking India's rural hinterland through all-weather roads, it advanced not only infrastructure but social mobility and economic opportunity—demonstrating that governance, when inclusive, becomes a moral act of nation-building.

Structural Challenges in Governance

- Despite digital advances, India faces deep-rooted structural challenges that affect governance quality and inclusiveness:
  - **Bureaucratic Inertia:** Delays in decision-making and complex hierarchies reduce policy agility. This leads to inefficiency and loss of public confidence.
  - **Corruption in Procurement**: Manual, non-transparent systems promote rent-seeking. Result: wastage of public funds and reduced investor trust.

- **Welfare Leakages:** Ghost beneficiaries and poor data integration inflate fiscal costs, weakening welfare outcomes.
- **Weak Local Governance:** Panchayats lack trained personnel and digital tools, limiting grassroots planning.
- **Land Record Ambiguities:** Unclear ownership restricts access to formal credit and fuels litigation.
- **Digital Divide:** Only 58% of Indians have internet access, with women's access just 33% (NFHS-5). This perpetuates inequality in digital service delivery.
- **Cybersecurity Risks:** India ranked sixth globally in cyberattacks (CERT-IN, 2024), threatening data security and public trust.
- **Institutional Resistance to Change:** Some departments resist reform due to fear of scrutiny, weakening implementation.
- **Dehumanisation through Over-Digitisation:** Technology without empathy alienates citizens, particularly those unfamiliar with digital systems.

➲ For *example*, in tribal regions, weak internet and low literacy often prevent people from accessing welfare benefits—showing that technological reach must be matched with social readiness.

Reform Architecture – Addressing Challenges and Their Impact

➲ India's reform architecture represents a coherent alignment between governance challenges, policy interventions, and measurable outcomes.

➲ Each reform targets a specific structural weakness, using technology and institutional redesign to make governance efficient, transparent, and citizen-centric.

- **Reducing Bureaucratic Delays:** The e-Office platform and UMANG App have digitised file movement and approval processes, reducing red tape and enabling faster decision-making. This has created a more efficient and accountable administrative culture.
- **Curbing Corruption in Procurement:** The Government e-Marketplace (GeM) portal has made public procurement transparent and competitive, eliminating middlemen and saving thousands of crores while enhancing MSME participation.
- **Eliminating Welfare Leakages:** The Aadhaar-linked Direct Benefit Transfer (DBT) ensures benefits reach genuine recipients directly, saving ₹1.78 lakh crore and preventing duplication. This has improved fiscal efficiency and strengthened public trust.
- **Strengthening Local Governance:** eGramSwaraj and Gram Manchitra have brought transparency and accountability to Panchayat-level planning and fund utilisation, ensuring evidence-based and participatory local development.
- **Resolving Land Disputes:** The SVAMITVA Scheme has used drone-based mapping to issue ownership cards to over 1.5 crore rural households, reducing conflicts and enabling access to formal credit.
- **Bridging the Digital Divide:** BharatNet and Common Service Centres (CSCs) have connected over 2.5 lakh Gram Panchayats, allowing rural citizens to access digital services and participate in governance.
- **Promoting Linguistic Inclusivity:** The BHASHINI initiative provides AI-driven translation in 22 Indian languages, ensuring equitable access to government services across linguistic groups.
- **Building Bureaucratic Capacity:** Mission Karmayogi has trained 1.26 crore officials in leadership, ethics, and service delivery, transforming the bureaucracy from rule-bound to citizen-oriented.
- **Enhancing Cybersecurity:** The National Cyber Coordination Centre (NCCC) strengthens cyber defence and data protection, ensuring public confidence in e-governance systems.

➲ Collectively, these reforms mark India's transition from procedural governance to performance-based governance, where technology strengthens trust, transparency, and citizen empowerment.

State-Level Innovation

➲ Several Indian states have emerged as innovation laboratories for good governance, translating digital policy into real-world impact:

- **Andhra Pradesh – Real-Time Governance (RTG):** Uses IoT and satellite data to monitor projects and respond to disasters; improved flood response time by 30%.
- **Tamil Nadu – e-Sevai Centres:** Provides 200+ public services through digital kiosks; over 90% citizen satisfaction.
- **Rajasthan – Jan Soochna Portal:** Real-time public access to welfare data; reduced RTI applications, enhanced accountability.
- **Kerala–K-SMART Platform:** Integrates property tax, waste management, and civic services, cutting delays by 35%.

➲ These models underscore that technology succeeds only when paired with local participation and administrative ownership.

Conclusion

➲ Governance 4.0 symbolises India's evolution from a command-driven bureaucracy to a citizen-partnered digital democracy. It merges technology with ethics, efficiency with empathy, and transparency with accountability.

➲ As Atal Bihari Vajpayee stated, ***"The test of good governance lies in how it touches the lives of the poorest."***

➲ If India continues to blend innovation with inclusion and data with dignity, Governance 4.0 will not merely modernise administration—it will redefine democracy itself by making governance intelligent in design, just in purpose, and humane in practice.

INDIA-RUSSIA RELATIONS

The 23rd India-Russia Annual Summit was recently held during the two-day state visit of Russian President Vladimir Putin to India.

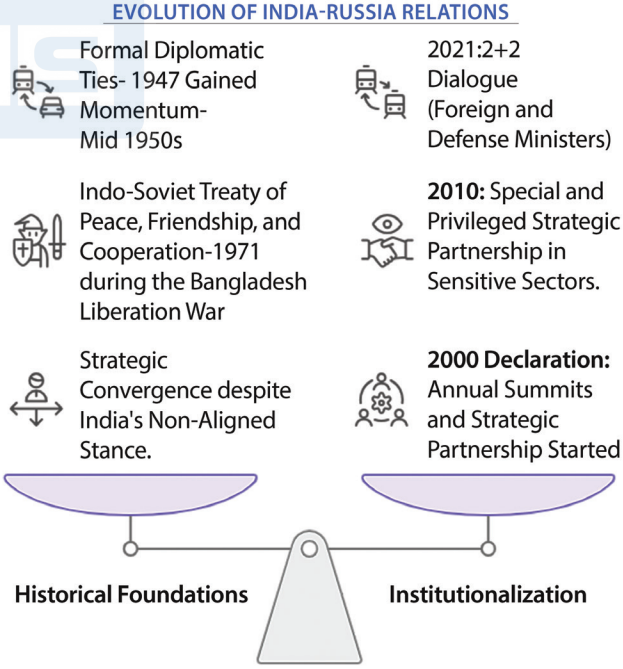
Key Outcomes of the Summit

The joint statement issued after the summit highlighted the enduring cooperation across various sectors, underscoring the resilience of this time-tested relationship.

- **Economic Diplomacy & Trade Architecture:**
  - **Trade Expansion:** The leaders set an ambitious bilateral trade target of USD 100 billion by 2030, supported by the newly adopted **"Programme 2030."**
  - **Institutional Frameworks:** Agreed to fast-track the **India–Eurasian Economic Union (EAEU) FTA** and finalized an **Investment Protection Agreement** to mitigate commercial risks.
  - **Financial Autonomy:** Committed to deepening integrated payment systems and national currency settlements to ensure "sanction-proof" economic stability.
- **Strategic Connectivity & Arctic Cooperation:**
  - **Strategic Corridors:** Prioritized the operationalization of the **International North–South Transport Corridor (INSTC)** and the **Chennai–Vladivostok Maritime Route** to bypass traditional bottlenecks.
  - **Arctic Engagement:** Formalized a framework for the **Northern Sea Route (NSR),** with Russia training Indian specialists in polar navigation; India signaled its intent for a proactive role as an **Observer** in the **Arctic Council.**
  - **Far East Development:** Leveraged the 2024–2029 framework to expand Indian investments in the **Russian Far East** across mining, agriculture, and energy.
- **Advanced Technology, Nuclear & Space Synergy:**
  - **Nuclear Roadmap:** Reaffirmed support for the Kudankulam NPP and expanded cooperation to the **full fuel cycle**, supporting India's vision of 100 GW nuclear capacity by 2047.
  - **Space Frontiers:** Strengthened the **ISRO–Roscosmos partnership**, specifically focusing on **human spaceflight (Gaganyaan)**, satellite navigation, and planetary exploration.
- **Defense Cooperation: From "Buyer" to "Co-Developer"**
  - **Atmanirbhar Integration:** Shifted the focus **from procurement to joint R&D** and **co-production** of high-tech military systems under the **Make in India** initiative.
  - **Global Supply Hub:** Agreed to manufacture spare parts for Russian-origin platforms in India, intended for domestic use and export to mutually **friendly third countries.**
- **Multilateralism & Global Governance:**
  - **UNSC Reform:** Russia explicitly reaffirmed its support for India's **permanent seat** in an **expanded UN Security Council.**
  - **Climate & Conservation:** Russia joined the **International Big Cat Alliance (IBCA)** and expressed interest in the India-led International Solar Alliance (ISA) and CDRI.
  - **BRICS Leadership:** Russia pledged full support for India's 2026 BRICS Chairship, emphasizing a shared vision for a multipolar world.
- **Internal Security & Counter-Terrorism:**
  - **Unified Front:** Jointly condemned global terror incidents (Crocus City Hall and Pahalgam), advocating for a "zero-tolerance" approach.
  - **Global Legal Framework:** Reaffirmed commitment to finalizing the **Comprehensive Convention on International Terrorism (CCIT)** at the UN.

Significance

- The bilateral relationship, rooted in the Soviet era, has transitioned into a "Special and Privileged Strategic Partnership," remaining a fundamental pillar of India's "Strategic Autonomy" in an increasingly fragmented global order.



- **Geo-Strategic Relations:**
  - **Multilateral Alignment:** Both nations emphasize a multipolar world order, collaborating through platforms like BRICS, SCO, and the G20 to give a stronger voice to the Global South.

- **Stance on Ukraine:** India maintains a nuanced position, advocating for **Dialogue and Diplomacy** and an immediate cessation of hostilities while resisting Western pressure to join unilateral sanctions.
- **Energy Security:** Russia remains India's top oil supplier. Discussions included long-term contracts for discounted oil and expanding nuclear energy projects beyond the Kudankulam plant.
- **Strategic Corridors:** A major push was given to three transport routes to speed up trade:
  - **International North–South Transport Corridor (INSTC):** The land-sea route through Iran.
  - **Chennai-Vladivostok:** A direct sea link connecting the East.
  - **Northern Sea Route:** A shortcut through the Arctic.

➲ **Geo-Economic Relations:**

- **Targeted Growth:** Bilateral trade reached a historic $65.70 billion (FY 2023-24). Both nations have pledged to reach $100 billion by 2030, utilizing the India-Russia Intergovernmental Commission (IRIGC-TEC) to streamline cooperation.
- **Trade Dynamics & Imbalance:** Russia is now India's primary oil supplier. However, a significant trade deficit exists necessitating a shift toward exporting Indian pharmaceuticals, electronics, and agricultural products.
- **'Third-Country-Proof' Payments:** To bypass Western sanctions, they are working on a payment system that uses national currencies and avoids the US Dollar.
  - **De-dollarization:** To bypass Western financial sanctions, both nations are increasingly adopting National Currency Settlement mechanisms for bilateral transactions.

➲ **Defense and Security Cooperation:** Transitioning from a buyer-seller dynamic to **joint R&D and co-production (e.g., BrahMos, Su-30MKI)**, ensuring India's operational readiness while supporting **Atmanirbhar Bharat.**

- **Nuclear Technology:** The **Kudankulam Nuclear Power Plant (KKNPP)** remains the centerpiece of civil nuclear ties. Plans are underway for six additional Russian-designed units at a new Indian site.
- **Operational Readiness:** Since roughly 60-70% of India's military hardware is of Russian origin, this summit ensured the continued delivery of systems like the S-400 and aircraft engines.
- **Strategic Assets:** India maintains critical Russian hardware, including the S-400 Triumf air defense system and T-90S Bhishma tanks.
- **Diversification Trends:** While Russia remains a major supplier (approx. 36% of imports), its share is declining as India pursues Atmanirbhar Bharat (indigenization) and broadens its defense procurement from Western partners.
- **Interoperability:** Regular joint exercises like INDRA and Vostok enhance tactical coordination across the Army, Navy, and Air Force.

➲ **Science, Technology, and Digital Cooperation**

- **Space Co-operation:** Russia is currently providing critical training and technical support for India's Gaganyaan (Human Spaceflight) mission.
- **STI Roadmap:** A new five-year Roadmap for Bilateral Science, Technology, and Innovation (STI) focuses on **nanotechnology, quantum computing, and co-innovation, replacing** older collaborative programs.
- **Health Security:** Successful collaboration during the pandemic led to the manufacturing and emergency approval of the **Sputnik-V** vaccine in India.

➲ **Education, Cultural and Diaspora Connect:**

- **Historical Ties:** The influence of Russian thinkers like **Leo Tolstoy** on Mahatma Gandhi and the legacy of artist **Nicholas Roerich** provide deep-rooted cultural foundations.
- **Modern Engagement:** Through the Jawaharlal Nehru Cultural Centre (JNCC) in Moscow and the growing popularity of Yoga and Indian Cinema in Russia, people-to-people ties remain resilient.
  - Russian admiration for Indian films, dance, and yoga remains strong; Yoga is widely practised across Russian cities.
- **Diaspora and Recognition:** Enhanced tourism via e-visas and the conferment of Russia's highest civilian honor, the **Order of St. Andrew the Apostle**, on the Indian Prime Minister, signifies the high level of mutual respect.

Challenges in the Relationship

India balances historic ties with Russia (energy and defense) against its vital US partnership (technology and Indo-Pacific security). While the QUAD/AUKUS target Beijing's dominance in the Indo-Pacific, India's refusal to condemn Russia's Ukraine invasion tests its strategic autonomy amid rising US pressure.

➲ **The U.S. Factor:**

- India's deepening **'Comprehensive Global Strategic Partnership'** with the United States, creates friction with Moscow.
- U.S. domestic laws like **CAATSA (Countering America's Adversaries Through Sanctions Act)** threaten India's high-value defense acquisitions from Russia (e.g., S-400).

➲ **The Indo-Pacific vs. Eurasia:** Russia views India's participation in the **QUAD** and the **Indo-Pacific** construct as a Western-led containment strategy against China, whereas India views it as essential for a rules-based maritime order.

➲ **The Russia-China Strategic 'Limitless' Partnership:**

- **Strategic Constraint:** Moscow's growing economic

and military dependence on Beijing reduces India's geopolitical leverage.

- **Security Risk:** Amid Line of Actual Control (LAC) tensions, Russia's neutrality and the reliability of defense supply chains during an India-China conflict remain a concern.

- **Structural Imbalances in Economic Ties:**
  - **Trade Deficit:** Bilateral trade is heavily skewed in favor of Russian hydrocarbons.
  - **Transaction Barriers:** SWIFT exclusions have stalled the Rupee-Ruble mechanism, leading to a 'trapped rupee' crisis for Russia.
- **Defense Decoupling and Diversification:**
  - Russia's share in Indian arms imports fell from 70% to ~36% as India shifted to the U.S., France, and Israel.
  - The Ukraine conflict and the 'Make in India' mandate have caused delays in Russian technology transfers and equipment delivery.
- **The Ukraine Conflict:** India maintains neutrality via 'Dialogue and Diplomacy' despite Western pressure to condemn Russia or join price caps.
- **Human and Connectivity Barriers:** Instability in West Asia hinders the INSTC; meanwhile, ties remain predominantly government-to-government (G2G), **lacking robust private-sector and diaspora engagement.**

Way Forward

- **Diversification:** Move beyond just 'oil and guns' into technology, mining, and healthcare.
- **Logistics:** Finalize the Free Trade Agreement (FTA) with the Eurasian Economic Union to lower shipping costs.
- **Balancing China:** Promoting mutually beneficial trilateral collaboration between Russia, China, and India could help lessen mistrust and suspicion between them.
- **Investments:** India and Russia need to increase diplomatic and financial investments to complete pending projects in the International North-South Transport Corridor.
- **Resource Access:** Deepening presence in the **Russian Far East** and the **Northern Sea Route** for energy and mineral security.

Conclusion

For 78 years, the India-Russia partnership has remained a cornerstone of global stability, driven by a mutual commitment to a multipolar world. While historically anchored in defense, nuclear, and space sectors, the relationship is rapidly diversifying into broader economic spheres.

- **Economic Growth and Diversification:** Recent years have seen a surge in bilateral trade, leading to new cooperative models and efforts to increase Indian exports.
- **Strategic Connectivity and Infrastructure:** Both nations are prioritizing major corridors, specifically the International North-South Transport Corridor, the Chennai-Vladivostok Eastern Maritime Corridor, and the Northern Sea Route, while focusing on the Russian Far East.
- **Alignment of National Interests:** Russia's Eastern pivot synergizes with India's Atmanirbhar Bharat and Make in India initiatives, merging Russian resources with Indian industrial growth.

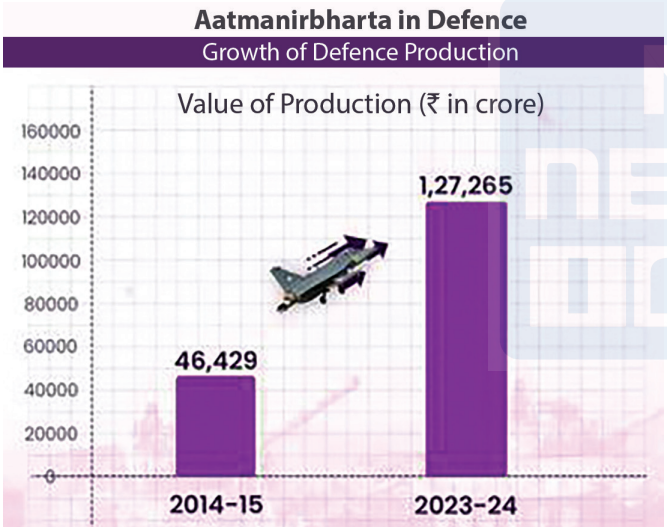
MAKE IN INDIA IN THE DEFENCE SECTOR

Expected big-ticket defence announcements during the Russian President's visit did not materialise as India is increasingly prioritising self-reliance and indigenisation in defence manufacturing over fresh import-heavy deals.

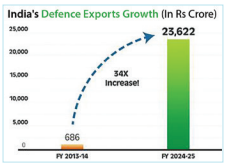
India's Shift in Defence Sector

Budget, Production & Exports

- **Rising Outlay:** Defence budget has expanded from about ₹2.53 lakh crore (2013–14) to nearly ₹6.81 lakh crore (2025–26), signalling sustained modernisation.
- **Production Boost:** Defence production grew from roughly ₹46,000 crore (2014) to about ₹1.51 lakh crore, with around 65% of equipment now sourced domestically, reversing the earlier 65–70% import dependence.
  - **Defence Production Corridors:** Two dedicated corridors — in Uttar Pradesh and Tamil Nadu — have attracted ₹8,658 crore in investment; over 160 industrial units are operational or under development.



- **Industrial Base:** India's defence ecosystem now includes 16 DPSUs, 430+ licensed companies and ~16,000 MSMEs, with a target of ₹3 lakh crore annual defence production by 2029.
- **Private Sector Role:** More than 110 firms have been granted Defence Industrial Licenses since 2020, increasing diversity of suppliers.

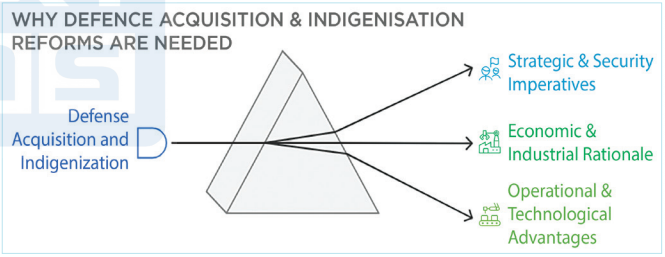


- **Export Surge:** Exports climbed from ₹686 crore (2013–14) to about ₹23,622 crore (2024–25), covering items such as bulletproof jackets, Do-228 aircraft, Chetak helicopters, fast interceptor boats and lightweight torpedoes; key buyers include the USA, France and Armenia.
  - **Symbolic Gains:** Indian products such as **'Made in Bihar' combat boots** now form part of foreign forces' gear, reflecting rising confidence in Indian manufacturing standards.
  - **Emerging Export Markets:** New destinations include Argentina, Egypt, Kenya, and Vietnam, beyond the traditional buyers like the USA and France.
- **Positive Indigenisation Lists (PILs):** Over 5,500 items now **banned for import across 4 lists (till 2029)**, creating assured ₹1.75 lakh crore demand pipeline for domestic industry.
- **Self-Reliance Index (SRI):** Improved from 0.3 (1992) to current levels; target 0.7+ through higher indigenous content mandates.
- **HAL's Role: Nashik facility** shifted from Russian MiGs/Sukhois to indigenous LCA Tejas, HTT-40 with GE/Honeywell engines.

Need of Defence Acquisition & Indigenisation Reforms

Strategic & Security Imperatives

- **Strategic Autonomy:** Reduced dependence on foreign suppliers during crises or sanctions helps preserve **independent foreign policy choices.**
- **Capability Gaps:** India faces a two-front challenge (China–Pakistan) and complex threats in the Indian Ocean Region; ageing fleets in Army, Navy and Air Force require rapid modernisation.



Economic & Industrial Rationale

- **Import Bill & Forex Saving:** As one of the world's largest arms importers, shifting to domestic production lowers long-term life-cycle costs and conserves foreign exchange.
- **Industrial Deepening:** Indigenisation drives innovation and scale in DPSUs, MSMEs and private sector, creating skilled jobs and spin-offs for civilian high-tech manufacturing.

Operational & Technological Advantages

- **Faster Procurement:** Local manufacturing shortens procurement cycles and improves availability during high-tempo operations.
- **Customisation:** Indigenous systems can be tailored to Indian conditions i.e. Himalayan high-altitudes, deserts, maritime zones, and upgraded incrementally as threats evolve.
- **Technology Sovereignty:** Owning design and IP reduces vulnerability to technology denial regimes, supply-chain disruptions and political leverage by suppliers.

Defence Acquisition & Indigenisation Reforms

Policy Framework & Procurement

- **Defence Acquisition Procedure 2020 (Indian-IDDM Focus):** Prioritises 'Buy (Indian–Indigenously Designed, Developed and Manufactured)' category to promote home-grown platforms.
- **Negative Import List:** Over 200 systems/sub-systems now embargoed for import, ensuring dedicated orders for Indian industry.

Institutional Reforms

- **Chief of Defence Staff (CDS) & Department of Military Affairs (DMA):** Enable tri-service jointness; Operation Sindoor demonstrated integrated ops success.
- **Vijayaraghavan Committee:** Recommends PMO-led Defence Technology Council, DRDO refocus on R&D, private/academia partnerships.

'Make' Procedure Simplification

- **Make-I:** Govt funds up to 70% of prototype costs; MSME-friendly for complex systems.
- **Make-II:** Industry-funded, minimal paperwork; open to firms and individuals with dozens of approved service projects.

FDI & Strategic Partnerships

- **FDI Liberalisation:** Up to 74% automatic and 100% with approval for advanced tech—attracting global OEMs.
- **Strategic Partnership (SP) Model:** Long-term tie-ups between Indian firms and foreign OEMs for platforms like submarines, helicopters, armoured vehicles with genuine tech transfer.

Testing, Innovation & Digital Tools

- **DTIS:** Builds Greenfield test facilities in EW, UAS, electro-optics, reducing foreign lab dependence.
- **iDEX (Innovations for Defence Excellence) & Technology Development Fund (TDF):** Support startups/MSMEs in frontier R&D; TDF funds up to ₹10 crore per project.
- **SRIJAN Portal:** Lists import-substitution items, linking demand to domestic suppliers.
- **iDEX Prime & ADITI:** Funds cyber, space, quantum, AI innovations; 350+ startups supported across 250+ projects.
- **3D Printing/Additive Manufacturing:** DRDO's Shakti Electronic Warfare (EW) system, rapid prototyping for complex components like missile parts.

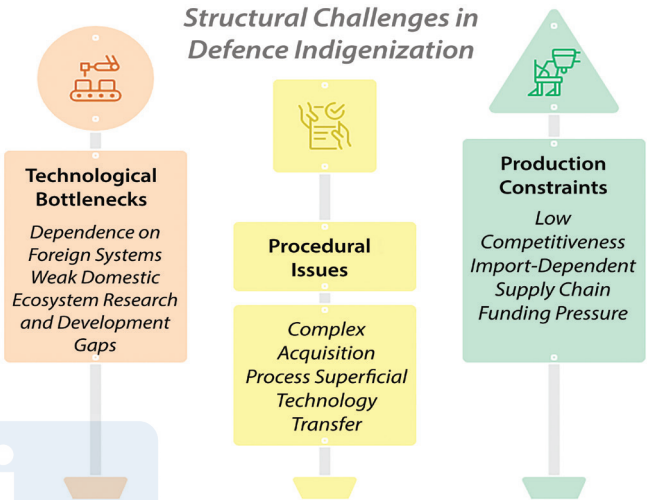
International Cooperation & Ease of Doing Business

- **Joint Production:** Indo-Russian pact for local manufacture of spares for Russian-origin platforms.
- **Regulatory Reforms:** Industrial licence validity extended 15 + 3 years; fewer items under licence, enabling long-term investment stability.

Structural Challenges in Defence Indigenisation

Technological and Industrial Bottlenecks

- **Dependence on Foreign Systems:** Continued dependence on external suppliers for key technologies like jet engines, GAE (gas turbine engines), AIP submarines, quantum sensors, advanced radars, and emerging areas such as artificial intelligence, hypersonics, and cyber warfare, limiting strategic autonomy.
- **Weak Domestic Ecosystem:** Public sector dominance leaves private firms with uncertain orders and funding constraints, hindering scale, innovation, and competition.



- **Research and Development Gaps:** Defence research spending remains low; projects often face delays and limited collaboration among laboratories, industry, and the armed forces; 75% R&D still DRDO-centric.

Procedural and Governance Issues

- **Complex Acquisition Process:** Overlapping mandates, frequent changes in **qualitative requirements (QRs)**, and procedural delays discourage timely procurement and private investment.

Production, Supply Chain, and Financial Constraints

- **Low Competitiveness:** Indian systems struggle in global markets due to cost and reliability concerns.
- **Import-Dependent Supply Chain:** Heavy reliance on imported components makes production vulnerable during crises (e.g., delays in Russian systems after the Ukraine war).
- **Funding Pressure:** Defence spending remains below 3% of GDP, with high personnel costs limiting resources for modernisation and innovation.

Way Forward

- **Raise defence R&D** via mission-mode programmes in critical technologies (jet engines, AI, cyber, space, unmanned systems).
- **Streamline procurement** through a single-window, time-bound system with realistic QRs and assured orders.
- **Deepen tri-service integration** and **theatre commands** to align capability development with indigenisation and budgets.
- **Promote export-oriented niches** (missiles, artillery, drones, naval platforms) to scale global value-chain integration.
- **Support MSMEs** with mandated Tier-2/3 procurement, faster payments, and single-window clearances.

FINANCIAL INCLUSION IN INDIA

The Reserve Bank of India launched NSFI 2025–30 to deepen equitable, technology-led financial inclusion across India.

> *Financial inclusion is not just about opening bank accounts. It is about opening the doors of opportunity.*
> **Narendra Modi,** Prime Minister

Background – From Financial Access to Financial Empowerment

- Financial inclusion has been central to India's inclusive growth strategy since 2014. The Jan Dhan–Aadhaar–Mobile (JAM) Trinity redefined financial access by integrating digital identity, banking, and mobile connectivity.
- Over 50 crore Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts have been opened, and more than ₹34 lakh crore transferred through Direct Benefit Transfers (DBT) (Ministry of Finance, 2024), reducing leakages and improving governance.
- Yet, access alone doesn't equal empowerment. As per RBI (2023), 18% of Jan Dhan accounts are inactive, and 40% of rural credit still comes from informal moneylenders (World Bank, 2022).
- India is thus shifting from Financial Inclusion 1.0 (access) to Financial Inclusion 2.0 (usage and empowerment)—focusing on quality, depth, and resilience.
- To drive this transition, the RBI, under the Sub-Committee of the Financial Stability and Development Council (FSDC), launched the National Strategy for Financial Inclusion (NSFI) 2025–30, a roadmap toward a digitally empowered and financially resilient Bharat aligned with Viksit Bharat @2047.

Understanding Financial Inclusion

- According to the World Bank, financial inclusion ensures individuals and businesses can access affordable and responsible financial products — savings, credit, insurance, and payments — that meet their needs sustainably.
- In India, it means enabling every citizen to save securely, borrow productively, insure against risks, and transact digitally and safely.
- Financial inclusion is thus a bridge between economic opportunity and social equity, empowering citizens to participate meaningfully in national growth.

Significance – Why Financial Inclusion Matters

- **Empowering Households and Local Enterprises:**
  - Financial inclusion connects small entrepreneurs, farmers, and workers to formal credit and savings.The Pradhan Mantri MUDRA Yojana (PMMY) has disbursed ₹25 lakh crore to microenterprises (RBI, 2024).
  - **Impact**: Reduces informal borrowing, stabilises incomes, and fosters entrepreneurship in rural and urban areas.
- **Advancing Women's Empowerment:**
  - Under National Rural Livelihood Mission (NRLM), 14 crore women are linked with formal banking through SHGs (NABARD, 2022).
  - **Impact:** Improves women's control over household finances and increases community participation in decision-making.
- **Improving Governance and Reducing Leakages:**
  - Integration of DBT with JAM saved ₹1.7 lakh crore in leakages (DBT Mission, 2023).
  - **Impact:** Ensures welfare transparency and strengthens citizens' trust in institutions.
- **Supporting Vulnerable Groups During Crises:**
  - During COVID-19, ₹68,000 crore was credited into Jan Dhan accounts (MoF, 2021).
  - **Impact**: Acts as an automatic stabiliser, cushioning low-income groups against shocks.
- **Enhancing Long-Term Financial Security:**
  - Insurance and pension schemes like PMJJBY, PMSBY, and Atal Pension Yojana (APY) cover over 53 crore people.
  - **Impact:** Expands the safety net, promoting long-term social and economic security.

Institutional Architecture for Financial Inclusion

Institution	Core Function
RBI	Regulates banks, credit, and payments systems
NABARD	Supports rural credit, cooperatives, SHGs
SEBI	Expands retail investor participation and education
IRDAI	Strengthens microinsurance and health protection
PFRDA	Expands pension inclusion via NPS and APY
FSDC	Coordinates financial regulators, ensuring systemic stability and synergy

- This multi-layered framework ensures that inclusion spans banking, insurance, pensions, and investments, not just bank accounts.

NSFI 2025–30 – The Panch-Jyoti Framework

The RBI's NSFI 2025–30 builds on five strategic pillars—called the Panch-Jyoti—with 47 actionable steps for inclusive and resilient financial growth.

- **Expanding Financial Access:**
  - **Objective:** Universal and equitable access to credit, banking, and insurance. ***Example,*** The PM Street Vendor's AtmaNirbhar Nidhi (PM-SVANidhi) scheme provided microloans to 60 lakh vendors.
  - **Impact:** Formalises informal workers and builds sustainable urban livelihoods.
- **Promoting Gender-Sensitive Inclusion:**
  - **Objective:** Increase women's financial participation through tailored products and policies. ***Example,*** the Mahila Samman Savings Certificate (2023) attracted deposits exceeding ₹10,000 crore.
  - **Impact:** Promotes women's savings culture and financial independence.
- **Linking Livelihoods and Finance:**
  - **Objective:** Integrate financial access with livelihood missions like NRLM and PMEGP. ***Example,*** NRLM-linked SHGs maintain 96% repayment rates (MoRD, 2024).
  - **Impact:** Aligns credit with productive activities, improving incomes and resilience.
- **Strengthening Financial Literacy and Awareness:**
  - **Objective:** Improve financial capability and consumer behaviour. ***Example,*** The National Centre for Financial Education (NCFE) trained 1.2 crore students and 40 lakh adults (RBI, 2023).
  - **Impact:** Promotes responsible savings, debt management, and digital safety.
- **Enhancing Consumer Protection and Cybersecurity:**
  - **Objective:** Strengthen grievance redressal and digital safeguards. ***Example,*** the Integrated Ombudsman Scheme (2021) resolved 2.3 lakh complaints; Digital Payments Security Directions (2023) mandated regular cyber audits.
  - **Impact:** Boosts user trust, a foundation for sustainable financial digitisation.

Financial Stability and Development Council (FSDC)

- The FSDC, established in 2010, is India's apex institution for maintaining financial stability and coordinated regulation.
- Chaired by the Union Finance Minister, it includes the RBI Governor, and heads of SEBI, IRDAI, PFRDA, and the Finance Secretary.
- Its Sub-Committee, chaired by the RBI Governor, directly supervises NSFI implementation.
- **Core Functions:** Ensuring inter-regulatory coordination and preventing policy overlaps. Strengthening inclusion, literacy, and consumer protection.
  - Managing systemic risks and ensuring financial stability.
- By integrating banking, insurance, pensions, and capital market reforms, the FSDC ensures that India's financial inclusion efforts remain coherent and future-ready.

Persistent Challenges and their Impacts

- **Digital Divide:** Only 40% of rural households have broadband access (TRAI, 2024), limiting digital inclusion.
- **Low Financial Literacy:** Only 62.6% of adults understand basic finance (RBI, 2023).
- **Cybersecurity Risks:** Digital frauds rose 24.4% in 2022 (NCRB, 2023), eroding trust.
- **MSME Credit Gap:** Formal credit meets just 40% of MSME needs (World Bank, 2022), limiting job creation.
- **Regional Inequality:** NE and central states average 18 ATMs/lakh adults, versus 40 globally.
- **Institutional Capacity Deficit:** Low pay and connectivity challenges weaken Banking Correspondent (BC) networks.
- **Impact:** These gaps slow inclusion, risk digital exclusion, and restrict financial deepening in poorer regions.

Complementary Government and RBI Initiatives

- **Digital Public Infrastructure (DPI):** Integration of UPI, Aadhaar, and Jan Dhan has made payments near-instant and costless. UPI now handles 14 billion monthly transactions (NPCI, 2025).
- **Financial Awareness Campaigns:** Initiatives like Financial Literacy Week and Gram Samriddhi Campaign build community-level awareness.
- **Credit and MSME Empowerment:** Schemes like CGTMSE and PMEGP provide collateral-free loans to first-time entrepreneurs.
- **Women's Economic Inclusion:** Stand-Up India and SHG–Bank Linkage support women and marginalised entrepreneurs.
- **Infrastructure Expansion:** The BC model and PM-KUSUM deploy solar-powered ATMs and rural banking points.
- **Impact:** These initiatives collectively convert financial access into meaningful financial capability and resilience.

CASE STUDY: Digital Empowerment in Rural Bihar

- In Gaya and Purnea districts, integration of Jan Dhan accounts, DBT, and UPI under Deendayal Antyodaya Yojana empowered women-led SHGs.
- Within two years, reliance on informal lenders dropped 40%, and QR-based digital payments became the norm among rural microenterprises.
- **Impact:** Demonstrates how digital inclusion, literacy, and formal finance together transform rural livelihoods.

Conclusion

- A deep and durable inclusion ecosystem demands not just digital access but equitable participation.
- By combining technology, literacy, security, and gender-sensitive finance, India can build a resilient financial architecture that empowers every citizen, strengthens local economies, and ensures that growth is both inclusive and sustainable across all regions.

INSOLVENCY AND BANKRUPTCY CODE

A Parliamentary Committee highlights structural inefficiencies and procedural delays weakening the Insolvency and Bankruptcy Code's (IBC) effectiveness.

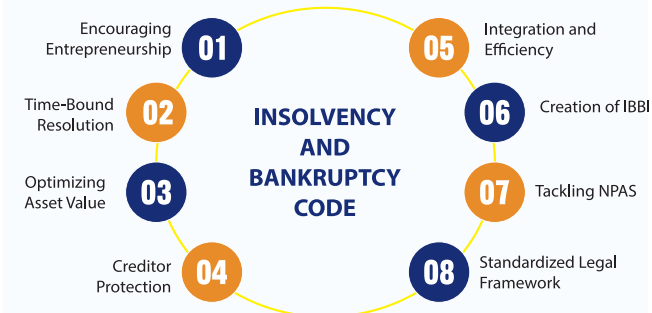
Background

- Before 2016, India's financial system was mired in rising Non-Performing Assets (NPAs), with over ₹10 lakh crore locked in defaulted loans. Existing recovery mechanisms — like SARFAESI (2002), Lok Adalats, and Debt Recovery Tribunals (DRTs) — were fragmented and painfully slow.
- To address this, the Insolvency and Bankruptcy Code (IBC) was enacted in 2016, creating a single, time-bound process to resolve corporate distress.
- It marked a shift from the debtor-in-possession model, where promoters retained control, to a creditor-in-control framework empowering lenders to steer revival or liquidation.
- The IBC thus emerged not just as a debt recovery law, but as a comprehensive economic reform to restore financial discipline, promote entrepreneurship, and strengthen India's investment climate.

Understanding the IBC: Concepts and Mechanism

- **Insolvency:** A state when an individual or firm cannot meet debt obligations on time.
- **Bankruptcy:** The legal process of resolving insolvency through asset sale or restructuring.
- **Corporate Insolvency Resolution Process (CIRP):** A time-bound (330-day) process under which control shifts to a Resolution Professional (RP) while creditors decide the firm's future.
- **National Company Law Tribunal (NCLT):** Judicial authority handling corporate insolvency.
- **Committee of Creditors (CoC):** A body of financial creditors that approves or rejects resolution plans.
- **Insolvency and Bankruptcy Board of India (IBBI):** The regulator ensuring transparency, compliance, and discipline among insolvency professionals.
- Together, these institutions aim to ensure timely, fair, and predictable resolution of distressed assets — vital for maintaining confidence in the credit system.

Key Objectives of IBC Rules



Key Challenges Hindering IBC's Effectiveness

- **Delayed Resolutions and Procedural Inefficiency:**
  - The IBC mandates resolution within 330 days, but the average duration exceeds 700 days.
  - **Delays arise due to:** Insufficient NCLT benches and vacancies,Frequent adjournments, andFrivolous litigation by promoters or unsuccessful bidders.Delayed processes erode asset value and discourage investors.
- **Declining Recovery Rates:** Average recoveries have dropped from 43% (2019) to 32% (2024).Most cases are referred late — after significant value erosion — making revival difficult.
- **Excessive Haircuts:**
  - A "haircut" means the reduction creditors accept on their claims.
  - Example: In the Videocon case, banks recovered less than 5% of dues — a 95% haircut — reflecting valuation and governance gaps.
- **Institutional and Capacity Constraints:**
  - NCLTs face a shortage of trained judges and case management staff.
  - IBBI lacks real-time data systems to track resolution delays and compliance.
- **Litigation and Governance Issues:**
  - Overlapping appeals delay resolution.
  - Resolution Professionals (RPs) face conflicts of interest and inconsistent accountability standards.
  - Decision-making by Committees of Creditors (CoCs) often lacks transparency.
- These systemic challenges threaten the IBC's credibility as a time-bound resolution law.

Key Achievements Since Enactment

- **Resolution Success:** Over 1,190 companies have been resolved under the IBC framework.
- **Improved Recovery:** Creditors have recovered 170% of liquidation value and 93% of fair value, better than legacy mechanisms.
- **Cultural Shift:** The IBC has instilled financial discipline, deterring wilful defaults.
- **Pre-Packaged Insolvency (PIRP):** Introduced in 2021 for MSMEs, it allows out-of-court settlements while keeping operations running — a key innovation for smaller firms.
- Collectively, these outcomes show that the IBC has improved efficiency and accountability, although major bottlenecks persist.

Government Efforts: Responding to Structural Challenges

- **Reducing Delays and Strengthening NCLT Capacity:**
  - The government is expanding NCLT benches, filling judicial vacancies, and introducing the Integrated Process and Information Exchange (iPIE) platform for digital case management.
  - A 30-day admission deadline for insolvency applications and penalties for frivolous appeals are proposed to prevent delays.
- **Improving Recovery Efficiency:**
  - The Pre-Packaged Resolution Mechanism, initially for MSMEs, is being considered for larger firms to allow pre-negotiated settlements and avoid litigation.
  - Revised Haircut Calculation based on asset value at insolvency entry (not loan value) gives a realistic picture of recoveries.
- **Strengthening Institutional Governance:**
  - Specialised IBC benches with sectoral expertise (e.g., real estate, aviation) are being created for complex cases.
  - The IBBI has tightened norms for Resolution Professionals (RPs), introducing peer reviews, audits, and certification standards.
- **Enhancing Transparency and Accountability:**
  - Data dashboards now track NCLT pendency, recovery rates, and resolution outcomes.
  - Mandatory disclosures by CoCs and RPs ensure fair valuation and bidding transparency.
- Each initiative corresponds to specific structural weaknesses identified by the Parliamentary Committee — creating a synchronised reform roadmap.

Way Forward

- **Legislative and Structural Strengthening:**
  - Amend IBC to ensure time-bound case processing, standardise valuation methods, and reduce judicial overreach.
  - Create a National Insolvency Grid linking NCLT, IBBI, and RBI databases for real-time performance monitoring.
- **Expanding Institutional Capacity:**
  - Establish a National Institute of Insolvency Studies for training judges, RPs, and regulators.
  - Increase NCLT infrastructure in high-case-load states to reduce pendency.
- **Strengthening Early Detection and Pre-emptive Action:**
  - Integrate IBC with RBI's Early Warning Systems (EWS) for proactive stress detection.
  - Encourage pre-packaged resolutions for large corporates to reduce litigation and protect value.
- **Building Public Trust and Investor Confidence:**
  - Develop public dashboards displaying recovery performance and resolution timelines.
  - Use AI-driven analytics to detect procedural irregularities and enhance regulatory supervision.
- These reforms directly complement the government's ongoing efforts — ensuring that IBC evolves from a reactive recovery tool into a proactive economic stabiliser.

CASE STUDY: Insights from Practice

- **Essar Steel (2019): A Model of Efficiency:**
  - Resolution achieved within 865 days recovered 92% (₹42,000 crore) of creditor claims.
  - It demonstrated that empowered CoCs and judicial clarity could ensure high recoveries and quick revival.
- **Videocon Group (2021): The Haircut Crisis:**
  - Creditors recovered less than 5%, revealing valuation opacity and a lack of bidder competition.
  - This led to tighter IBBI disclosure rules on asset valuation and information sharing.
- **Jet Airways (2022): Sectoral Complexity**
  - The airline's prolonged case highlighted the absence of sector-specific expertise and coordination between regulators (DGCA, MoCA), leading to operational and valuation challenges.
  - These examples reveal how institutional efficiency, sectoral understanding, and governance directly affect IBC's outcomes.

EXPORT PROMOTION MISSION

India launched a ₹25,060-crore Export Promotion Mission to enhance global competitiveness and strengthen MSME-led export growth.

Background

- India's export potential has expanded with economic growth, yet its export-to-GDP ratio (≈21%) lags behind export-driven nations such as Vietnam (93%) or South Korea (43%).
- Micro, Small and Medium Enterprises (MSMEs), which contribute nearly 45% of India's total exports, face persistent bottlenecks — limited access to affordable credit, fragmented policy support, and inadequate global market linkages.
- Recognising these challenges, the government launched the Export Promotion Mission (EPM) in Union Budget 2025–26 as a mission-mode framework that unifies finance, logistics, market access, and policy coordination to create an inclusive export ecosystem.

About the Export Promotion Mission (EPM)

- EPM is a six-year initiative (FY 2025–31) aimed at strengthening India's export competitiveness through financial and non-financial interventions, especially for MSMEs and labour-intensive sectors such as textiles, leather, engineering, and marine products.
- **Implementing Agency:** Directorate General of Foreign Trade (DGFT) through an integrated digital export facilitation platform.
- **Key Ministries:** Commerce, MSME, Finance, and State Governments in collaboration with Export Promotion Councils and financial institutions.
- **Objective:** To build a single-window export ecosystem ensuring easy credit, compliance support, logistics efficiency, and market diversification.
- Conceptually, EPM represents a shift from fragmented export schemes to a unified mission approach, where government, industry, and finance work in tandem.

Core Components of EPM

- **Niryat Protsahan – Financial Empowerment:**
  - Focuses on enhancing access to affordable trade credit and mitigating financial risk.
  - **Credit Guarantee Scheme for Exporters (CGSE):** 100% guarantee coverage via National Credit Guarantee Trustee Company Ltd (NCGTC), enabling collateral-free loans for MSMEs.
  - **₹20,000 crore additional credit facility:** Expands liquidity to meet working capital needs and reduce dependence on informal borrowing.
  - **Interest and Insurance Support:** Interest equalisation and export credit insurance protect exporters from delayed payments and currency risks.
  - **Concept:** A credit guarantee ensures that banks are compensated in case of borrower default, encouraging wider credit access to smaller exporters.
- **Niryat Disha – Non-Financial and Market Support:** Addresses structural challenges such as compliance, logistics, and branding.
  - **Addressing Non-Tariff Barriers (NTBs):** Funding for international certifications, product testing, and quality assurance to meet global import standards.
  - **Market Development & Branding:** Support for trade fairs, packaging innovation, and brand promotion to enhance India's visibility abroad.
  - **Reducing Logistics Costs:** Digital logistics systems, multimodal transport, and cold-chain infrastructure aim to bring logistics costs (currently 13–14% of GDP) closer to the global average of 8–9%.
  - **Concept**: NTBs (Non-Tariff Barriers) are regulations like safety or environmental standards that can restrict trade even without tariffs; meeting them enhances market access.

Overview of India's Export Sector

- 21% contribution in overall GDP (FY 2024-25).
- Over 45 million people are directly and indirectly employed in Export-oriented industries.
- 45% of India's total exports are contributed by the MSMEs.
- India's share in global exports of goods and services is at around 2.5%.

Significance of EPM

- **Empowers MSMEs:** Integrates them into global supply chains through finance and compliance support.
- **Improves Competitiveness:** Reduces procedural delays, costs, and credit constraints.
- **Promotes Sustainability:** Encourages exports compliant with global Environmental, Social and Governance (ESG) norms.
- **Enhances Market Diversification:** Expands India's reach beyond traditional Western markets into Africa, ASEAN, and Latin America.
- **Boosts Employment Generation:** Aims to create 10–12 million new jobs through export-linked industrial clusters and value-added manufacturing.

- **Fosters Technological Upgradation:** Encourages adoption of Industry 4.0 tools—AI, IoT, and automation—within export-oriented industries to meet global quality standards.
- **Strengthens Trade Infrastructure:** Integrates port modernisation, multimodal logistics, and digital customs clearance under the PM Gati Shakti framework for seamless trade flow.
- **Improves Foreign Exchange Stability:** A broader and more diversified export basket enhances India's current account balance and reduces vulnerability to global shocks.
- **Encourages Regional Inclusion:** Promotes state-level export hubs, linking rural artisans, agri-producers, and handloom sectors to global e-commerce platforms.
- **Aligns with National Missions:** Complements initiatives like Make in India, Districts as Export Hubs, and Atmanirbhar Bharat to build a self-reliant yet globally competitive economy.

Challenges in India's Export Ecosystem

Despite positive reforms, structural challenges persist:

- **Credit Accessibility**: MSMEs often lack collateral or formal credit histories, limiting their access to affordable finance.
- **High Logistics Costs:** Inadequate transport and warehousing infrastructure inflate export prices, reducing competitiveness.
- **Limited Awareness:** Many exporters are unaware of schemes or unable to meet compliance requirements.
- **Complex Documentation:** Lengthy procedures and multiple agencies delay shipments.
- **Global Volatility:** Trade wars, protectionism, and disrupted supply chains impact India's export stability.
- These challenges demonstrate that export growth requires not just policy intent but institutional efficiency, financial innovation, and capacity building.

India's Efforts to Address the Challenges

The EPM strategically aligns reforms to each of the above challenges, ensuring synchronous policy action:

- **To Improve Credit Access:** The Credit Guarantee Scheme for Exporters (CGSE) and interest equalisation ensure risk-free, affordable financing for MSMEs.
- **To Reduce Logistics Costs:** The PM Gati Shakti Master Plan and National Logistics Policy (NLP) focus on multimodal connectivity and digitised supply chains.
- **To Raise Awareness and Compliance:** DGFT's digital single-window portal integrates customs, banks, and exporters — reducing red tape and promoting transparency.
- **To Simplify Documentation:** The Electronic Certificate of Origin and Trade Facilitation Portal standardise export procedures.
- **To Counter Global Volatility:** The government promotes market diversification and Free Trade Agreements (FTAs) with UAE, Australia, and the EU to secure stable export markets.
- This alignment of efforts ensures that every identified challenge is matched with a corresponding reform, reinforcing systemic resilience.

CASE STUDY: Tiruppur Textile Cluster (Tamil Nadu)

- The Tiruppur knitwear cluster, accounting for over 50% of India's garment exports, exemplifies EPM's goals in practice.
- Through improved credit facilities, export certification, and branding support, Tiruppur's MSMEs expanded into over 100 international markets.
- This success highlights how policy support, when coupled with digital access and market awareness, can transform local industries into global champions.

Way Forward: Building a Resilient Export Ecosystem

To build on EPM's foundation, India must ensure:

- **Green Export Incentives:** Encourage sustainable manufacturing through fiscal and regulatory incentives.
- **Inclusive Outreach:** Extend EPM benefits to rural, women-led, and artisan-based enterprises.
- **Capacity Building:** Enhance financial literacy and digital training for MSMEs.
- **FTA Optimisation:** Use existing trade agreements effectively through export promotion cells in embassies.
- **Continuous Monitoring:** Annual DGFT-led reviews to identify bottlenecks and update interventions dynamically.
- By focusing on inclusivity, innovation, and sustainability, EPM can evolve from an export mission to a national competitiveness framework.

Conclusion

- **The Export Promotion Mission (EPM)** marks a transformative shift from fragmented export policies to a unified, mission-driven framework that integrates finance, logistics, and market access.
- By **empowering MSMEs**, promoting sustainable and diversified exports, and institutionalising digital transparency, EPM positions India to become a resilient, globally competitive trading economy.
- If effectively implemented through inclusive participation, green innovation, and robust monitoring, the mission can significantly strengthen India's export base, reduce regional imbalances, and accelerate progress toward the $2 trillion export target by 2030 — making exports a true engine of Viksit Bharat 2047.

AMENDMENT OF INSURANCE LAWS ACT, 2025

The Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Act, 2025, passed by Parliament in December 2025, represents the most comprehensive structural overhaul of the Indian insurance sector since its liberalization in 2000.

About

- Designed to achieve the national goal of **"Insurance for All by 2047,"** the Act amends three legacy statutes: the **Insurance Act (1938),** the **Life Insurance Corporation (LIC) Act (1956),** and the **IRDAI Act (1999)**.
- **Aim:** Modernisation, wider coverage and stronger regulatory oversight.

Major Features

- **100% FDI:** The amendment raises the Foreign Direct Investment (FDI) limit in Indian insurance companies **from 74% to 100%.** This allows **full foreign ownership of Indian insurers**, aiming to attract global capital, advanced underwriting technology, and international best practices.
- **Foreign reinsurers:** The requirement of **Net Owned Funds** (includes equity capital, free reserves, balance in share premium account and capital reserves representing surplus) for **foreign reinsurers** is **reduced from Rs 5,000 cr to Rs 1,000 cr**.
  - It has been done to **facilitate entry of more re-insurers,** building greater reinsurance capacities in the country.
  - This easing of norms is intended to draw competition in the segment currently dominated by the public sector General Insurance Corporation of India (GIC Re).
- **Enhanced Powers for IRDAI:**
  - **Disgorgement Powers:** The regulator now has **"disgorgement" powers,** similar to SEBI, allowing it to recover wrongful gains from insurers or intermediaries.
  - **Regulatory Autonomy:** IRDAI can now specify detailed conditions for investments and intermediary commissions via regulations rather than rigid statutory sections.
  - **Search and Seizure:** IRDAI's enforcement capabilities now include search and seizure operations where records are suspected of being tampered with or withheld.
- **Ease of Doing Business (EoDB):**
  - **Perpetual Licensing:** Intermediaries (brokers, agents) receive a one-time perpetual registration, removing the need for renewals every three years.
  - **Share Transfer Threshold:** The threshold for requiring prior IRDAI approval for equity transfers has been raised from **1% to 5%**.
- **More powers for LIC:** Life Insurance Corporation of India (LIC) is being given greater operational freedom.
  - It empowered LIC to set up new zonal offices without requiring prior government approvals, enabling faster expansion, improved administrative efficiency, and better regional oversight.
- **Policyholder Protection and Transparency:**
  - **Policyholders' Education and Protection Fund (PEPF):** A dedicated fund will be established to enhance insurance literacy and awareness across the country.
  - **Data Security:** New mandates align policyholder data protection with the **Digital Personal Data Protection (DPDP) Act, 2023**, prohibiting unauthorized sharing of personal information.
  - **Claims Discipline:** The Act introduces a legal principle of proportionality for penalties and mandates that insurers provide written reasons for claim rejections.

Key Omissions in the Insurance Amendment Act

- **No Composite Licensing:** The Act does **not** allow a single insurer to offer life, health, and general insurance under one license. This maintains structural silos and prevents the **"one-roof" service model** common in global markets like the UK or Singapore.
- **High Entry Barriers:** The minimum capital requirement remains at **₹100 crore** for new insurers. Critics argue this deters niche, regional, or micro-insurers who could better serve rural and underserved populations.
- **Lack of Captive Insurance Framework:** The Act is silent on **"captive insurers"**—subsidiaries established by large corporations to insure their own risks—delaying the modernization of corporate risk management.
- **Distribution Constraints:** Proposals to allow individual agents to sell policies for multiple companies (beyond the "one-life, one-general" limit) were dropped, which may limit consumer choice at the grassroots level.

Significance of the Act

- **FDI limit raised to 100% as a major reform:** Allowing 100% FDI is expected to attract substantial foreign capital into the insurance sector.
- **Access to global best practices and technology:** Full foreign ownership will enable Indian insurers to adopt advanced underwriting models, digital claims platforms, and sophisticated risk-assessment tools.
- **Closing the Protection Gap:** With India's insurance penetration at only **3.7%–4% of GDP** (vs. a global average of 7%), the Act seeks to mobilize long-term savings for infrastructure and social security.
- **Boost to innovation and competition:** Increased foreign participation is likely to intensify competition, spur product innovation, and encourage the development of more customer-centric and technology-driven insurance solutions.

POLICE SYSTEM IN INDIA

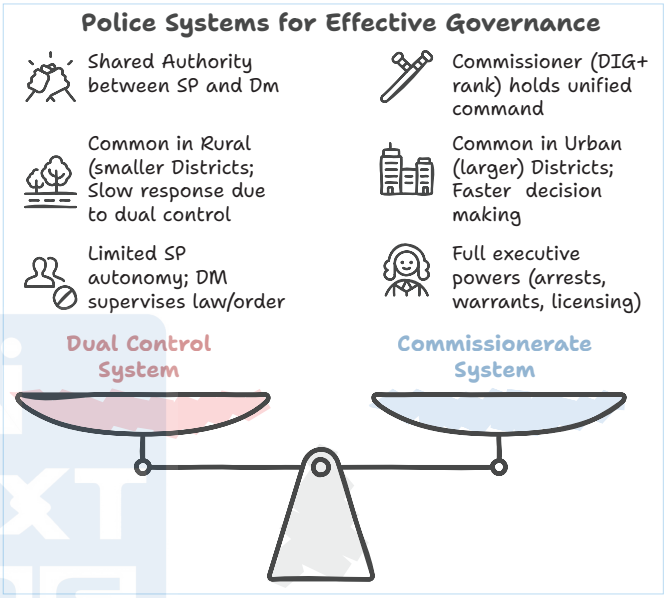
PM Narendra Modi chaired the 60th All India Conference of Directors General and Inspectors General of Police in Chhattisgarh emphasising internal security, modern policing, cybercrime challenges, and technology integration.

All India Conference of Directors General and Inspectors General of Police

- **History:** It was initiated by the Intelligence Bureau in 1920 as the first post-independence conference and was inaugurated by Sardar Vallabhbhai Patel on January 12, 1950.
- **Organising Body:** The DGP–IGP Conference is an annual national-level forum convened by the Intelligence Bureau under the Union Ministry of Home Affairs.
- **Theme of the 2025 Conference:** The theme of this year's conference was ***"Viksit Bharat: Security Dimensions"***.
- **Level and Composition:** It gathers Directors General and Inspectors General from all States and Union Territories, making it the apex platform for internal security deliberations in India.
- **Participation of Central Agencies:** Senior representatives from key central security and intelligence agencies such as RAW, NIA, NTRO, NCB and Central Armed Police Forces (CRPF, BSF, ITBP, CISF, SSB) attended the conference.
- **Core Security Agenda:** Discussions emphasized Left-Wing Extremism, counter-terrorism and intelligence sharing, drug-trafficking networks, cyber security, digital forensics, border management, and coordination between Central and State police forces.
- **Key Outcome of the 2025 Conference:** Recent conference emphasised:
  - Strengthen monitoring of banned outfits and radicalization.
  - Enhance coastal security and disaster response.
  - Integrate AI, data analytics, and modern forensics.
  - Prioritize women's safety, urban policing, and community engagement.

Indian Police System

- Police and law and order are **State subjects under the Seventh Schedule of the Constitution**, making State Governments primarily responsible for them.
- With 28 state forces and 8 UT police, central forces like CAPFs assist.
- **Hierarchical Structure:** Director General of Police **(DGP)** → Additional Director General of Police **(ADGP)** → Inspector General of Police **(IG)** → Deputy Inspector General of Police **(DIG)** → Senior Superintendent of Police **(SSP)** → Superintendent of Police **(SP)** → Additional Superintendent of Police **(ASP)** → Deputy Superintendent of Police **(DSP)** / Assistant Commissioner of Police **(ACP)** → Inspector of Police → Sub-Inspector of Police **(SI)** → Assistant Sub-Inspector of Police **(ASI)** → Head Constable → Constable.



Historical Evolution

- **Pre-colonial Arrangements:** Ancient and medieval India saw officials like kotwals for town order, Mauryan gopa-sthanikas for village supervision, and Mughal faujdars and thanedars handling district and local security under subedars.
- **Colonial foundation (Police Act, 1861):** After the 1857 Revolt, the Police Act of 1861 created a centralised, semi-militarised provincial force focused on maintaining colonial order, with a strict hierarchy (Superintendent → Inspector → Constable).
  - **Police Commission of 1860:** Set up after the 1857 revolt to review existing arrangements and recommend a uniform, more "efficient" provincial police; its work led to the Police Act, 1861.
  - **Indian Police Commission, 1902–03 (Fraser Commission):** Appointed under Lord Curzon to examine the working of the 1861 system, improve efficiency and integrity, and strengthen crime-detection and intelligence; it recommended the creation of the **Criminal Investigation Department (CID)** in provinces.
- **Post-Independence Continuity:** After 1947, policing remained a State subject and the 1861 structure was largely retained, even as the Indian Police Service replaced the Imperial Police.

- **Reform Commissions and Reports:** The National Police Commission (1977–81), Ribeiro Committee (late 1990s), and Malimath Committee (early 2000s) all criticised the colonial legacy and proposed modernisation and accountability measures.
- **Judicial Push for Change:** In the Prakash Singh judgment (2006), the Supreme Court ordered reforms such as fixed DGP tenure, police boards, and separation of investigation from law-and-order, but implementation has been only partial across states.

Significance of the Police System

- **Guardian of Law and Security:** Maintains rule of law, prevents crime, protects public safety, and supports internal security in the face of terrorism, cyber threats, and Left Wing Extremism.
- **Critical for Federal Structure:** Enables states to effectively enforce the Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagarik Suraksha Sanhita (BNSS), and Bharatiya Sakshya Adhiniyam within India's federal framework.

Issues Faced by the Indian Police System

- India's police system is still largely governed by **colonial-era structures (the Police Act of 1861 remains the basis in many states)**, often ill-equipped to deal with cybercrime, terrorism, organised crime, and urban policing challenges.
- **Growing population, rapid urbanisation**, and **complex law-and-order situations** demand efficient, technology-enabled policing.
- **Understaffing: Police-population ratio** stands at 152 per lakh (vs. UN ideal 222), with 24% vacancies (2024 Bureau of Police Research and Development (BPR&D) report).
- **Public trust and perception of the police remain low,** requiring reforms in training, accountability, and community engagement.
- **Need for Modernisation:** Modernisation is needed to tackle cybercrime, terrorism, and organised crime, improve response time, ensure citizen-friendly, accountable policing, and integrate advanced forensics, data analytics, and technology-driven surveillance.

Efforts at Police Modernisation

- **Financial limitations in states** have consistently delayed police modernization efforts. To support the States, the Ministry of Home Affairs has been supplementing resources through **"Assistance to State & UTs for Modernization of Police" (ASUMP)** *[erstwhile scheme of Modernization of State Police Forces (MPF)]*.
- The Supreme Court in **Prakash Singh v. Union of India (2006)** mandated reforms like fixed tenures for DGPs (minimum 2 years), state security commissions, and separation of investigation/prosecution function but the implementation still remains uneven across states.
- **MPF Scheme Evolution:** Modernisation of Police Forces (MPF) initiated 1969-70; current MPF Scheme (2017-20) allocated ₹25,842 crore, with MPF-IV (2021-26) at ₹26,275 crore focusing on forensics, CCTVs (3.21 lakh cameras), drones, and cyber labs.
  - **Key Components:** 50% Central Assistance for weapons (AK rifles, non-lethal), forensic vans, forensic training institutes; CCTNS digitized 12,528 police stations.

- **Challenges Persist:** Only 27% modernization funds utilized (2018-20); infrastructure gaps in rural stations; tech integration uneven across states.

- **Micro Missions of Modernisation:** There are eight working groups that are working in mission mode to evolve solutions to policing problems.

Emerging Issues

- **Cybercrime Explosion:** 1.1 million cases (2024), up 63% YoY; deepfakes, crypto scams, and AI-driven sextortion challenge outdated cyber cells.
- **Hybrid Threats:** Drone smuggling (LWE areas), narco-terrorism (Punjab), radicalisation via social media; requires AI predictive policing.
- **Urban Security:** Migration strains resources; women's safety (Nirbhaya Fund underutilized); climate-induced disasters demand specialized response units.
- **Tech-driven Security Threats:** Drone threats, deepfakes in elections, radicalization via social media, cybercrimes, and digital frauds are rising sharply, requiring specialised units and advanced forensic tools.
- **Persistent Internal and Border Challenges:** Left Wing Extremism (LWE), coastal security, and drug trafficking remain pressing concerns.

Important Committees Related to Police Reforms

- **National Police Commission (1978-82):** Limit political interference to policy; SP exclusive for investigations; sensitivity to marginalization.
- **Padmanabhaiah Committee (2000):** SP solely for crime probe; delete Evidence Act Sections 25-26 for SP+ confessions; investigation kits per station.
- **Malimath Committee (2003):** Victim rights, timelines for probes; admissible confessions to senior officers.
- **Second ARC (2007):** Fixed tenures for DGPs/IGs; an independent complaints authority; separate investigation/law-order wings.

Steps taken by India

- **SMART Policing:** During the 49th annual DsGP/IsGP Conference, 2014, Prime Minister introduced a concept of 'SMART' Policing.
  - **It implies: S-** Sensitive and Strict; **M-** Modern and Mobility; **A-** Alert and Accountable; **R-** Reliable and Responsive and **T-** Trained and Techno-savvy.
  - The Ministry of Home Affairs (MHA) and BPR&D drive the initiative through knowledge sharing, financial support and a defined roadmap.
- **Central Modernisation Funding:** The Ministry of Home Affairs (MHA) runs the **Assistance to States for Modernisation of Police Scheme**, funding weapons, communication systems, forensic labs, and mobility solutions.
- **Research-led Policing Reforms:** The **Bureau of Police Research & Development (BPR&D)** drives innovation, training, and technology adoption, acting as a bridge between police and scientific institutions.
- **Nationwide Crime-data Integration: Crime and Criminal Tracking Network and Systems (CCTNS) project**, started in the year 2009, interlinks almost all police stations under a common application software.
- **New Criminal Laws:** Implementation of Bharatiya Nyaya Sanhita, Bharatiya Nagarik Suraksha Sanhita, and Bharatiya Sakshya Adhiniyam—replacing IPC, CrPC and the Evidence Act—modernises policing via technology-driven investigation, forensics, digital evidence, and victim-centric justice.
- **Emerging Areas of Focus:** Prime Minister Narendra Modi recently emphasised monitoring **banned outfits, strengthening coastal security, and holistic disaster management** at the DGP/IGP conference.

Global Case Studies

- **Singapore:** Singapore Police Force (SPF) under the Home Affairs Ministry achieves near-zero crime via **community policing, tech-driven policing with AI surveillance (e.g., Predictive Policing via data analytics)**. Police-population ratio: 300+; low crime via community trust.
- **Scandinavian Countries:** Community-oriented (e.g., Norway's proximity policing); high trust (90%+ public confidence); **de-escalation focus over militarisation,** emphasis on mental health training over force.
- **New York:** Since the 1990s, New York's **Broken Windows Policing** and CompStat data systems helped cut crime by about 70–80%. After 2020, reforms emphasized community policing and bias reduction, while data-driven deployments now integrate body-worn cameras to enhance oversight and transparency.

Way Forward

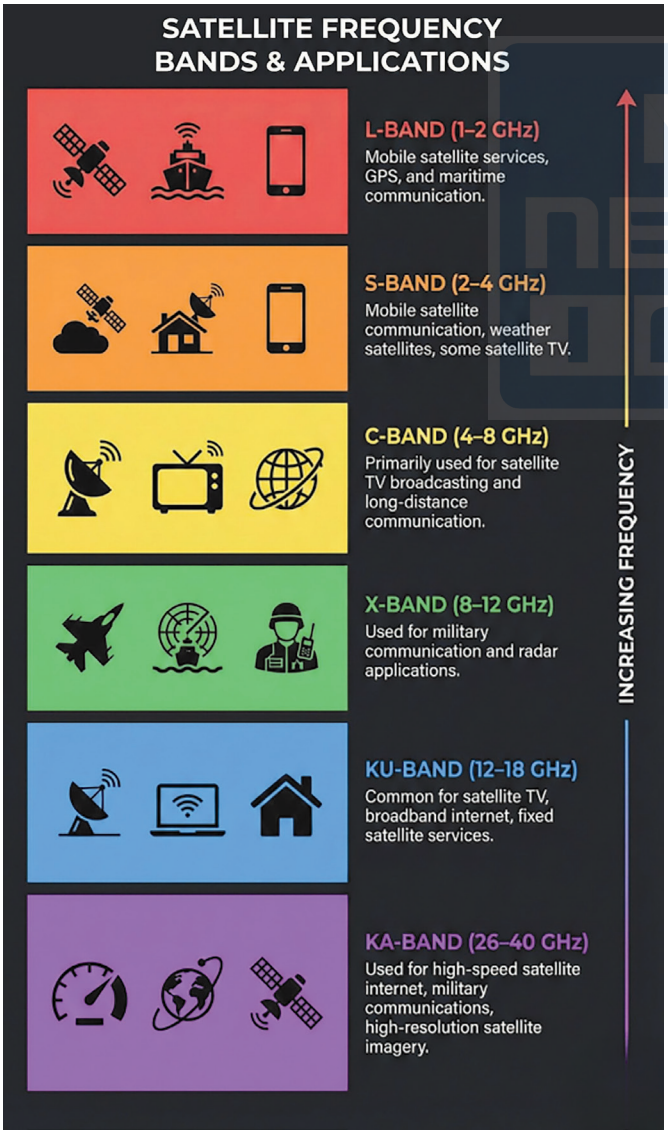
- **Reform Framework and Governance:** Uniformly implement the Model Police Act, 2006, with incentive-linked funding and fully enforce the Supreme Court's Prakash Singh directives on tenure security and independent oversight bodies.
- **Manpower and Technology:** Improve the police–population ratio through faster recruitment, while investing in AI tools, drones, and upgraded CCTNS for faster, evidence-based policing.
- **Urban, Specialised and Tech-driven Policing:** Expand the commissionerate system in major cities and build specialised cyber and technology wings using predictive analytics, blockchain-aided forensic, and drone squads.
- **Community Focus and Funding:** Promote neighbourhood watch, social-media-based engagement, higher modernisation funding, and public–private partnerships to create a trusted, professional, modern police force.

FIGHT FOR SPECTRUM IN SPACE

The rapid expansion of satellite megaconstellations, driven by soaring demand for high-speed connectivity, has intensified the global race for limited spectrum and orbital slots.

What is Satellite Spectrum?

- **Satellite Spectrum:**
  - It refers to the **radio frequencies** used for satellite communications.
  - These frequencies enable satellite-based systems to **transmit data and signals between satellites** in orbit and ground stations.
- **Difference:** Unlike terrestrial spectrum, satellite spectrum operates **without national territorial limits** and is managed globally by the **International Telecommunications Union (ITU).**
- **Bands:** Satellite spectrum is divided into different frequency bands, each suited for specific types of communication.



Why Spectrum Matters in Space

- In space communication, spectrum is akin to "the oxygen of operations." Without it, space systems cannot transmit telemetry, navigation, Earth observation data, broadband, or scientific measurements.

Spectrum Allocation in India

- **Spectrum for satcom** is part of the first schedule of **The Telecommunications Act, 2023** ("Assignment of spectrum through administrative process").
- **Under Section 4(4) of the Act**, telecom spectrum shall be assigned through auction "except for entries listed in the **First Schedule** for which assignment shall be done by administrative process".
- **Administrative process** under the Act means assignment of spectrum without holding an auction (a bid process for assignment of spectrum).

Fight for Spectrum in Space

- **Spectrum Congestion: Ku, Ka, and L bands** are in extremely high demand. Overlapping frequencies **risk interference,** reducing service quality and threatening critical functions such as GPS.
- **Key Frequency Bands:**
  - **L-band (1–2 GHz):** Used for GPS, navigation, and mobile satellite services.
  - **Ku-band (12–18 GHz):** Widely used for satellite broadband.
  - **Ka-band (26–40 GHz):** Supports high-speed, high-capacity communications
- **Orbital Crowding and Debris:** Over 40,000 tracked objects already orbit Earth, including 27,000+ pieces of debris larger than 10 cm.
  - Projections show 50,000+ satellites may orbit by 2030, increasing collision risks **(Kessler syndrome)** and complicating scientific observations.
- **The ITU's first-come, first-served system** favours well-resourced spacefaring nations and companies that can file early and manage complex coordination, leaving late entrants with fewer and less valuable spectrum–orbit options.
- **Digital Divide and Affordability:**
  - LEO satellites offer **low latency (20–40 ms),** enabling telemedicine and online education.
  - But affordability remains a challenge as Starlink terminal costs **$600,** unaffordable for most rural populations.
  - The ITU estimates that bridging global digital gaps will require **$2.6–2.8 trillion by 2030.**

Consequences of the Unregulated Spectrum Race

- **Technological Consequences:**
  - Increased interference reduces reliability of services such as remote sensing, GPS, and climate observation.
  - Scientific astronomy faces disruptions due to bright satellite trails and radio noise.
- **Economic Consequences:**
  - Early movers may establish monopolies in satellite broadband markets.
  - **Spectrum scarcity** raises the cost of deployment for late entrants.
- **Geopolitical Consequences:** Unequal access to spectrum deepens the strategic divide between advanced and developing nations.
- **Social Consequences:**
  - Without affordability reforms, satellite Internet may become premium infrastructure serving wealthy users, not underserved communities.
  - This undermines its potential to reduce the global digital gap.

International Telecommunications Union (ITU)

- The ITU is a specialised agency of the **United Nations with 194** member states.
- **Founded in 1865** to facilitate international connectivity in communications networks, it serves as the **sole global coordinator for satellite spectrum** and **orbital slots.**
  - India has been a member of ITU since 1869.
- **Functions:**
  - It allocates global radio spectrum and satellite orbits.
  - It develops the **technical standards** that ensure networks and technologies seamlessly interconnect, and strive to improve access to ICTs to underserved communities worldwide.

Global Governance and Coordination Efforts

- **ITU-ESA Collaboration:** Recognizing the growing complexity in space spectrum management, the **International Telecommunication Union (ITU) and European Space Agency (ESA)** agreed to cooperate on:
  - Spectrum interference mitigation
  - Sustainable and efficient spectrum use
  - Sharing expertise and information to support global standards
- This joint effort reflects a broader objective of ensuring space communications remain **reliable and interference-free**, supporting global digital connectivity goals.
- **National and Regional Roles:** India, through industry and regulatory advisories, is advocating for **administrative allocation of satellite spectrum** — to expedite deployment and bridge digital divide challenges.
- Events like the **India Spectrum Management Conference** emphasize the strategic importance of spectrum governance in national planning.

Reforms under World Radiocommunication Conference

- The World Radiocommunication Conference 2023 introduced key reforms through **Resolution 8,** requiring operators to report any deviation between planned and actual orbital deployments to **prevent misuse of filings.**
- It also set **phased deployment benchmarks** for megaconstellations, **10% within two years, 50% within five years, and full deployment within seven years**, to ensure timely and accountable use of spectrum and orbital resources.

Way Forward

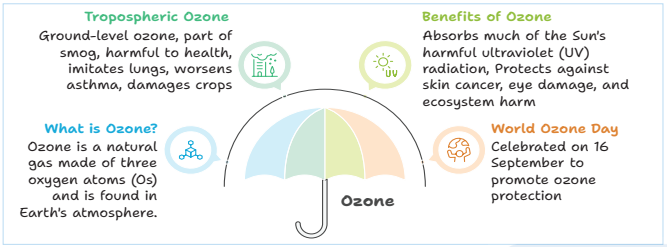
- **Allocation Reform:** A shift from the current **first-come, first-served model** towards a **"use-it-or-lose-it"** and **need-based allocation framework** is required to prevent spectrum hoarding and ensure equitable access for late-entry and developing countries.
- **Strengthening Enforcement:** The ITU should be empowered with stronger monitoring and enforcement tools, including penalties for non-deployment, misreporting, and harmful interference.
- **Promoting Spectrum-Efficient Technologies:**
  - Governments and space agencies must incentivise advanced technologies such as **Dynamic spectrum sharing, AI-driven interference detection, Beamforming and frequency reuse, Optical (laser) satellite communication**.
  - These innovations can significantly reduce pressure on congested frequency bands.
- **Strengthening Multilateral Space Governance:**
  - Greater coordination among **space agencies, regulators, and private operators** is essential to treat outer space as a global commons.
  - **Regional and multilateral platforms** should be used to harmonise standards and resolve disputes collaboratively.

ANTARCTIC OZONE HOLE

The Antarctic ozone hole that formed in mid-August 2025 closed earlier than usual. It was the smallest/weakest in about five years and is indeed being highlighted during a record-heat year.

About the Closure

- NASA and European Space Agency (ESA) satellite data, including Ozone Watch and Sentinel-5P, confirm ozone levels exceeding 220 Dobson Units (DU) across regions outside the Antarctic ozone hole, signaling recovery amid Montreal Protocol successes.

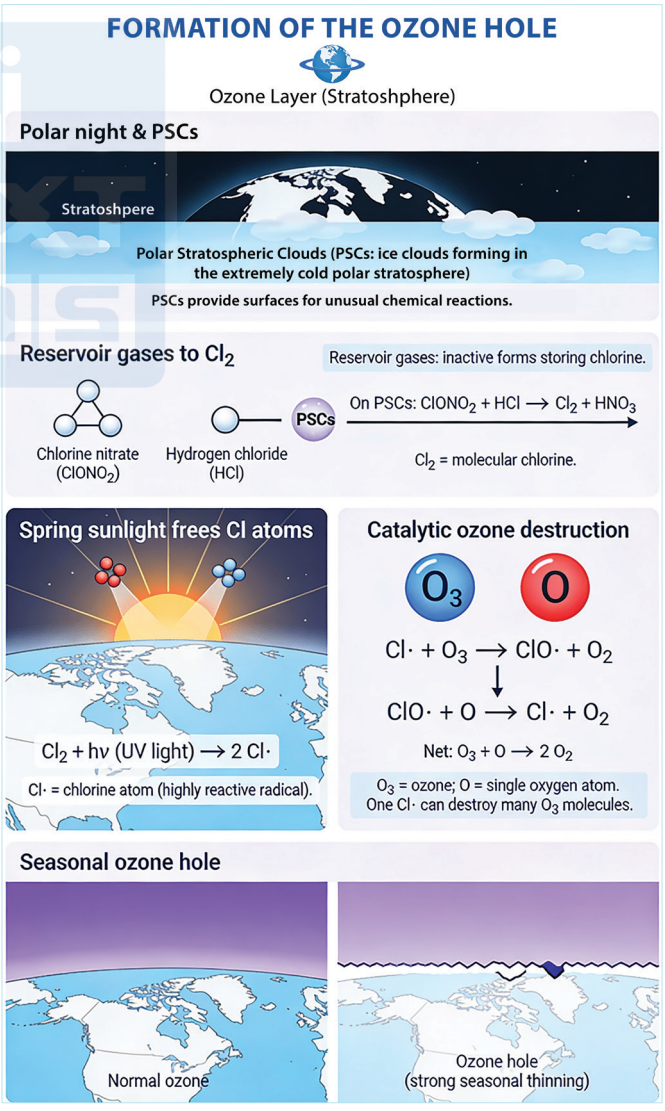


What is the Ozone Hole?

- The Antarctic Ozone Hole is a **seasonal thinning of the stratospheric ozone layer,** particularly in the southern polar region.
- Scientists refer to a region as an "ozone hole" when the ozone concentration in the region **drops below 220 Dobson Units (DU)**, meaning the gas is severely depleted but not completely absent.
- This pattern was first noticed in the early 1980s, when observations from both surface stations and satellites revealed striking reductions in ozone above the South Pole.
- It happens at the beginning of the **Southern Hemisphere spring or austral spring** (September–November).

Causes and Formation of the Ozone Hole

- Ozone hole formation is **most pronounced over Antarctica** because of a unique combination of very cold temperatures, strong atmospheric isolation, and returning sunlight in spring.
- **Polar Vortex:** During the Antarctic winter, a strong, stable polar vortex develops, trapping air and producing **extremely low stratospheric temperatures (stratospheric temperatures fall below about –78°C).**
  - This isolated circulation blocks the inflow of warmer air, creating ideal conditions for ozone-destructive chemistry.
- **Chlorofluorocarbons (CFCs), halons, and other ozone-depleting substances (ODS):** These chemicals, once widely used in refrigeration, aerosols, and solvents, break down ozone molecules in the stratosphere.
- **Polar Stratospheric Clouds (PSCs)** formed in extreme cold, and they accelerate chemical reactions that destroy ozone.
  - On their surfaces, reactions convert **chlorine and bromine,** which are derived mainly from chlorofluorocarbons (CFCs) and other human-made compounds, **into highly reactive forms**. Roughly 80% of these halogens over Antarctica come from anthropogenic sources.
- **Climate Change Interactions:**
  - Warming at the surface and cooling in the stratosphere can influence ozone depletion cycles.
  - **Sunlight in Spring:** When sunlight returns in the Antarctic spring, **UV radiation activates accumulated chlorine and bromine**, triggering fast catalytic destruction of ozone.
  - This chain of reactions produces a vast area with significantly reduced ozone concentrations over Antarctica, commonly termed as the **"ozone hole."**



Impacts of Ozone Layer Depletion

Ozone layer depletion increases harmful UV-B at Earth's surface, impacting health, ecosystems, climate, agriculture, aquatic life, materials, and biogeochemical cycles.

- **Human Health:** Increased UV-B raises risks of skin cancer, cataracts, eye damage, and weakens immune responses.
- **Ecosystems and Biodiversity:** UV damages phytoplankton and reduces plant growth, altering species composition and food webs.
- **Agriculture and Food Security:** Staple crops may show lower yields, reduced photosynthesis, and greater vulnerability to pests and climate stresses.
- **Aquatic Environments:** UV-B harms phytoplankton, fish eggs, larvae, and zooplankton, changing productivity and species mix in waters.
- **Climate and Atmospheric Processes:** Ozone loss modifies stratospheric temperatures, circulation, jet streams, and precipitation patterns.
- **Materials and Infrastructure:** Higher UV-B speeds degradation of plastics, rubber, textiles, paints, and wood, increasing maintenance costs.
- **Biogeochemical Cycles:** UV-B alters carbon and nitrogen cycling, influencing greenhouse-gas emissions and ecosystem functioning.

Steps Taken

- **Montreal Protocol (1987):** The Montreal Protocol, adopted in 1987, is a landmark global agreement that mandates the phase-out of ozone-depleting substances (ODS) and has been credited with shrinking the Antarctic ozone hole; it also became the first UN environmental treaty to achieve universal ratification in 2009.
- **Kigali Amendment (2016):** The 2016 Kigali Amendment broadens this framework by targeting hydrofluorocarbons (HFCs), which do not harm ozone but are powerful greenhouse gases, for a gradual global phasedown.
  - By eliminating ODS and curbing HFCs, these measures together are expected to significantly aid climate mitigation, avoiding an estimated 0.5°C–1°C of additional warming by mid-century.
- **National Efforts:** India has achieved full CFC phase-out by 2010 and targets HCFC elimination by 2030 under Montreal Protocol commitments, eliminating 100% of ODS production for foams and refrigeration.
  - **Phase-Out Achievements:** CFCs were completely phased out ahead of schedule, with HCFC consumption cut by 35% from baseline by 2024, focusing on air conditioners and chillers via destruction facilities in Chennai and Durgapur.
  - **National Clean Air Programme:** NCAP (2019 onward) integrates ODS monitoring through 132 cities' air quality networks, tracking stratospheric ozone alongside PM2.5/NOx, with Himalayan stations alerting UV spikes in Ladakh.
  - **ISRO/NASA Collaborations:** ISRO's MOSDAC portal fuses Ozone Monitoring Instrument (OMI) data from NASA's Aura satellite with INSAT-3D/3DR for real-time total ozone mapping, validating 220+ DU recovery over India.
  - **UNEP Verification:** UNEP's 2025 Antarctic ozone hole assessment—5th smallest since 1992—credits Montreal Protocol success, noting India's compliance as key to global trends despite CFC-11 challenges.

Challenges

- **CFC-11 Emission Violations:** Illegal CFC-11 releases from China and Vietnam (2018-2022) delayed ozone recovery by up to a year, violating Montreal Protocol amid detected spikes of 11,000 tons annually.
- **Climate-Ozone Feedback Loops:** Warming promotes stratospheric clouds that activate chlorine, worsening depletion; recovery-induced cooling extends cycles, complicating Himalayan UV threats to Ladakh crops and health.
- **VSLS Emerging Risks:** Very short-lived substances like dichloromethane surged 40%, contributing 12% to future ozone loss by rapidly reaching the stratosphere unchecked.

Way Ahead

- **Proof of Successful Action:** The earlier closure of the ozone hole demonstrates that strong global agreements and coordinated action can meaningfully reverse human-driven atmospheric damage.
- **Need for Vigilance:** Because recovery remains fragile, continuous monitoring, strict compliance, and quick action against any illegal emissions are essential.
  - **TEAP Strengthening:** Enhance the Technology & Economic Assessment Panel with satellite monitoring and penalties for compliance gaps in global phaseouts.
- **Implementation of Treaties:** Full implementation of the Montreal Protocol and its Kigali Amendment, including phasing down climate-warming HFCs, must proceed in parallel with wider climate policies.
  - **Paris Integration:** Link Kigali Amendment HFC reductions to the Paris Agreement for co-benefits in UV protection and agricultural resilience.
- **Clean Technology Transition:** Countries should promote clean, energy-efficient, ozone-friendly technologies in cooling, refrigeration, aerosols, and related sectors so substitutes do not intensify global warming.
  - **India's Refrigerant Shift:** Adopt R-290 propane in ACs for 20% market share by 2030 and CO2-based EV cooling to cut ozone/GWP risks.
- **Long-term Outlook:** With sustained cooperation and strong policies, the ozone layer is expected to approach pre-1980 levels over most regions by mid-century and later over Antarctica, supporting long-term climate stability.

COMMUNIST PARTY OF INDIA

The Communist Party of India (CPI) has completed its 100 years, marking a century of influence on India's socio-political fabric, from the anti-imperialist struggle to post-independence land reforms.

Foundation

- The Communist Party of India (CPI) was founded in December, 1925 during the **Kanpur Conference**.

Background of Communism

- **Political Origins:** The French Revolution established the Right–Left political binary, pitting monarchists against republicans amid rising industrial inequality.
- **Marx's Theory:** Karl Marx predicted that **advanced Western industrial nations** would naturally revolt against capitalism to achieve socialism.
- **The Russian Shift:** Contradicting Marx, the 1917 Bolshevik Revolution proved socialism could thrive in agrarian, colonized nations.
- **Lenin's Blueprint:** Communism evolved into a **National Liberation tool**, offering colonized countries, like India, a radical path to fight imperialism and monarchy.

Tashkent vs. Kanpur Debate over Formation of CPI

- **Tashkent Chapter (1920):** Formed in the USSR by M.N. Roy with **Comintern** approval; it represents the '**Internationalist**' aspect. The **CPI (M)** recognizes this as the founding moment.
  - It was aimed at **overthrowing British imperialism** and establishing **socialism** and lacked links with the masses.
- **Kanpur Conference (1925):** The first national conference on Indian soil, marking the formal "indigenization" of the movement. The CPI recognizes this as its true foundation.
  - **Objectives:** Mission was to terminate British colonial sovereignty and establish a sovereign republic governed by the working class and peasantry.
  - **Inclusive Stance:** The Kanpur conference was chaired by **M. Singaravelu Chettiar** who strongly **opposed untouchability**. The CPI was the first group to ban members from communal organizations, highlighting its commitment to **secularism and inclusivity.**

AITUC FORMATION

EARLY UNIONS
B.P. Wadia founded the Madras Labour Union in 1918, followed by Gandhi's Majdoor Mahajan in 1920.

AITUC FORMATION
The establishment of International Labour Organisation expedited the All India Trade Union Congress' establishment in 1920, Bombay. Lala

- **Significance:** While Tashkent provided the ideological framework, Kanpur integrated the movement with Indian mass politics.

British Repression: The Bolshevik Conspiracy Cases

- The colonial government utilized the judiciary to suppress the movement through landmark trials:
- **Peshawar (1922):** Targeted **mujahirs** (Muslim activists, students, and revolutionaries) returning from the USSR.
- **Kanpur (1924):** Convicted leaders like S.A. Dange and Muzaffar Ahmed for subversion.
- **Meerut (1929):** The most significant trial involving 33 leaders (including three Britishers). It turned the accused into national heroes.

Influence on the Freedom Struggle and Relations with INC

- **Meerut Conspiracy (1929):** In 1929, communist leaders faced arrests in the Meerut Conspiracy Case for allegedly leading railway strikes, resulting in jail terms or deportations for many.
- **United Front Era (1930s):**
  - During the 1930s, communists partnered with the Congress Socialist Party to form a united front against imperialism.
  - **Front Collapse (1939):** The alliance broke down in 1939 over ideological and political disagreements.
- **Post-War Struggles (After 1945):** After 1945, communists spearheaded significant peasant uprisings, notably in Bengal and Telangana.

Associated Literature

- **Proletarian Literature:** M.N. Roy published The Vanguard of Indian Independence; S.A. Dange launched The Socialist (India's first Marxist journal)
- **IPTA (1943):** The Indian People's Theatre Association used art and drama (e.g., the play Nabanna) to mobilize the masses against the Bengal Famine and social injustices.

Key Achievements and Evolution

- **Peasant Uprisings:** Led historic struggles like the **Tebhaga Movement** (Bengal, 1946-49) and the **Telangana Armed Struggle** (Hyderabad, 1946-1951) against feudalism.
- **Electoral Milestone (1957):** Under **E.M.S. Namboodiripad** in Kerala, India witnessed one of the world's first **democratically elected Communist governments.** It also achieved electoral success in states like West Bengal and Tripura.
- **The 1964 Split:** Ideological differences regarding the Sino-Soviet rift and attitudes toward the Congress led to the formation of the **CPI (Marxist).**

CHILD TRAFFICKING AND COMMERCIAL SEXUAL EXPLOITATION

Calling child trafficking and commercial sexual exploitation a "deeply disturbing reality" in India, the Supreme Court laid down guidelines on how courts must sensitively appreciate the evidence of minor victims of trafficking and prostitution.

Guidelines on Appreciation of Evidence

- **Victim's Testimony as Credible Evidence:**
  - Sole testimony of a minor victim is sufficient for conviction if credible.
  - Medical or eyewitness corroboration is **desirable, not mandatory**
- **Sensitivity in Appreciating Testimony:**
  - Courts must not disbelieve a trafficked child's testimony due to minor inconsistencies, especially given the trauma involved.
  - The sole testimony of the victim is sufficient if it is credible and convincing.
- **No Adverse Inference from Delay:** Delay in reporting trafficking or sexual exploitation is natural, not suspicious due to fear of stigma, retaliation, or social rejection. Thus delay cannot be a ground for acquittal.
  - Judicial scrutiny must avoid rejecting a victim's account as **"against normal human conduct,"** especially where delayed resistance or protest is involved.
- **Victim's Character Is Irrelevant:** Previous sexual history or association with prostitution cannot be used to discredit the child, thus **reinforced POCSO Act, 2012.**
- **Prevents secondary victimisation:** Courts must ensure in-camera proceedings, non-confrontational questioning, avoidance of aggressive cross-examination and use of intermediaries or support persons where required

Significance of the Guidelines

- Shifts focus from technicalities to truth
- Promotes victim-centric justice
- Aligns Indian jurisprudence with UNCRC and international norms
- Strengthens conviction rates without compromising fairness
- The Supreme Court has repeatedly stressed- *"Courts must not add to the trauma of a child who has already suffered grave violations of dignity."*

Background and Judicial Concern

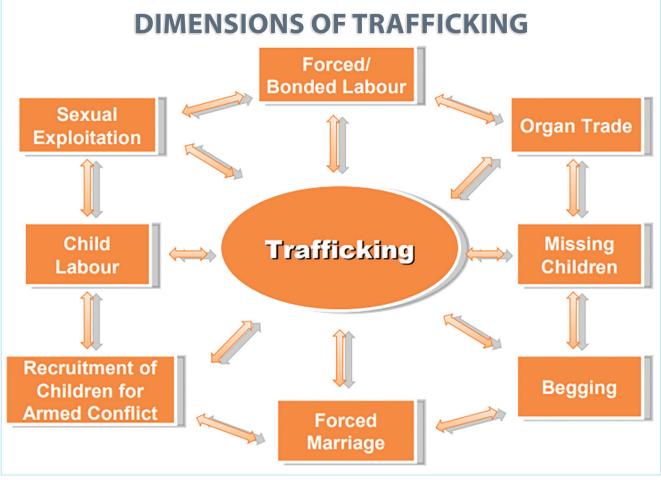
- The Supreme Court has consistently recognised that **minor victims of trafficking and prostitution** are among the **most vulnerable witnesses**, often suffering from trauma, social stigma, coercion and fear and psychological manipulation by traffickers.
- Accordingly, the Court has laid down special evidentiary and procedural safeguards to ensure justice without re-victimisation.

Key Supreme Court Judgments

- **State of Punjab v. Gurmit Singh (1996):** Though related to rape trials, principles apply to minor victims of sexual exploitation
  - The Court mandated in-camera trials and avoidance of hostile courtroom environments
- **Budhadev Karmaskar v. State of West Bengal (2011):** Addressed prostitution and trafficking victims' rehabilitation and dignity
  - The Court emphasised that victims are not offenders thus judicial sensitivity is essential in assessing testimony.
- **Aparna Bhat v. State of Madhya Pradesh (2021):** Reinforced gender- and victim-sensitive judicial conduct
  - Though broader, it reaffirmed principles applicable to minor trafficking victims.

Reasons for Human/Sex Trafficking

- **Poverty:** Individuals and families living in poverty are more susceptible to the false promises of traffickers who offer better opportunities and livelihoods.
- **Lack of Awareness:** Low literacy levels and limited awareness make people, especially in rural areas, more vulnerable to deception and exploitation.
- **Migration:** Unregulated migration, both domestic and international, creates opportunities for traffickers to target individuals who are disconnected from their support networks.
- **Inadequate training of law enforcement agencies**, and corruption exacerbate the challenges of effectively addressing trafficking.



Implications of Sex Trafficking

- **Human Rights Violations:** Victims of sex trafficking suffer severe violations of their fundamental human rights, including freedom, dignity, and bodily autonomy.

- **Perpetuation of Inequality:** Sex trafficking reinforces existing social inequalities, especially against women and marginalized groups, perpetuating cycles of poverty and discrimination.
- **Economic Costs:** Trafficking undermines workforce potential and economic growth.

Constitutional Safeguards in India

- **Article 23:** Prohibits trafficking in human beings and forced labor.
- **Article 21:** Ensures the right to life and personal liberty, which has been interpreted to include the right to live with dignity.
- **Article 39(e):** The state should ensure that the health and strength of workers and children are not abused, and that citizens are not forced to take jobs that are not suitable for their age or strength.

Laws Governing Anti-Trafficking Crimes

- **The Immoral Traffic (Prevention) Act, 1956** is targeted at stopping immoral trafficking and sex work. It went through two amendments, in 1978 and 1986.
- **The Child Labour (Prohibition and Regulation) Act, 1986,** prevents children from partaking in certain employments and regulates the conditions of work for children in other fields.
- **The Bonded Labour System (Abolition) Act, 1976,** prohibits systems of labour where people, including children, work under conditions of servitude to pay off debt, and also provides a framework for rehabilitating released labourers.
- **The Juvenile Justice (Care and Protection of Children) Act 2015**, which governs laws relating to children alleged and found to be in conflict with law.
- **Protection of Children from Sexual Offences (POCSO) Act, 2012,** which seeks to prevent commercial sexual exploitation of children.
- India set up **Anti-Human Trafficking Units (AHTUs)** in 2007. AHTUs are tasked with;
  - Addressing the existing gaps in the law enforcement response,
  - Ensuring a victim-centric approach which ensures the 'best interest of the victim/ survivor,
  - Prevents secondary victimization/ re-victimisation of the victim, and developing databases on traffickers.
- **The Criminal Law (Amendment) Act, 2013,** revised Section 370 of the Indian Penal Code, which deals with buying and selling of any person as a slave, to include the concept of human trafficking.

Government Schemes and Initiatives

- **Ujjawala Scheme:** Prevention, rescue, rehabilitation, and reintegration of trafficked women and children
- **Mission Vatsalya:** Umbrella child protection scheme, focus on care institutions, adoption, foster care
- **Operation Smile / Operation Muskaan:** Recovery of missing and trafficked children

International Commitments

- **UN Convention on the Rights of the Child (UNCRC):** A legally binding international treaty recognising children as rights-holders and obligating States to protect them from abuse, exploitation, trafficking, and neglect.
- **Optional Protocol on Sale of Children, Child Prostitution & Child Pornography:** Strengthens UNCRC by requiring States to criminalise sale of children, child prostitution, and child pornography, including online sexual abuse.
- **Palermo Protocol (UNTOC):** Defines human trafficking and mandates prevention, prosecution of traffickers, and protection and rehabilitation of victims, with special safeguards for children.
- **ILO Conventions 138:** Sets minimum age standards for employment to prevent child labour and ensure children's education and healthy development.
- **ILO Conventions 182 (Worst Forms of Child Labour):** Calls for immediate elimination of worst forms of child labour, including child trafficking, forced labour, sexual exploitation, and use in illicit activities.

Way Ahead

- **Economic Empowerment:** Providing sustainable livelihood opportunities and skill development programs for vulnerable populations reduce the economic pressures that lead to trafficking.
- **Victim Rehabilitation and Support:** Developing comprehensive rehabilitation schemes that provide physical, psychological, and economic support is essential for survivors.
- **International Cooperation:** Strengthening **cross-border partnerships** and **sharing intelligence** can help dismantle trafficking networks that operate transnationally.
- **Stronger Legal Frameworks:** Enacting and effectively enforcing strict anti-trafficking laws ensures accountability, deters offenders, and protects victims' rights.
- **Law Enforcement Capacity Building:** Training police, border officials, and judicial authorities improves identification of trafficking cases and strengthens prosecution efforts.
- **Community Participation:** Engaging local leaders, NGOs, and civil society organizations fosters early detection, reporting, and prevention of trafficking activities.
- **Data Collection and Research:** Strengthening data systems and research initiatives helps identify trends, high-risk areas, and effective intervention strategies.
- **Technology-Driven Solutions:** Utilizing digital tools, surveillance systems, and online monitoring can help track trafficking networks and prevent online recruitment.

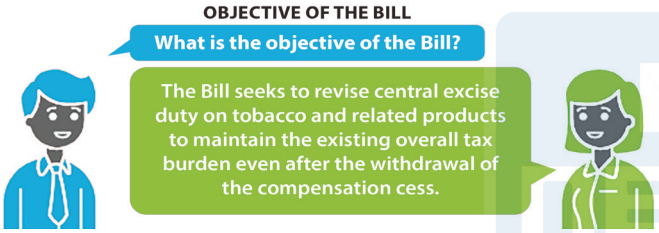
1 POLITY & GOVERNANCE

THE CENTRAL EXCISE (AMENDMENT) BILL, 2025

Recently, the Central Excise (Amendment) Bill, 2025 was passed by the parliament.

Background

- Central excise duty was largely withdrawn after the introduction of the Goods and Services Tax (GST) in 2017.
- Tobacco and tobacco products continued to attract three levies: GST, GST Compensation Cess, and central excise duty.
- With the compensation cess proposed to be discontinued, changes in excise duty have become necessary.



Key Provisions

- **Increase in Duty on Unmanufactured Tobacco:** Excise duty on unmanufactured tobacco such as sun-cured tobacco leaves is increased from 64% to 70%.
- **Increase in Duty on Cigarettes:** Earlier, excise duty ranged from ₹200 to ₹735 per 1,000 cigarettes. The Bill proposes a significantly higher duty ranging from ₹2,700 to ₹11,000 per 1,000 cigarettes, depending on the category.
- **Increase in Duty on Manufactured Tobacco Products:**
  - Duty on chewing tobacco is increased from 25% to 100%.
  - Duty on hookah or gudaku tobacco is increased from 25% to 40%.
  - Duty on smoking mixtures used in pipes and cigarettes is proposed to rise from 60% to 325%.

ONLINE MESSAGING PLATFORMS

The Department of Telecommunications (DoT) has directed online messaging platforms to bar users from accessing their services without the SIM card used to register for the application.

About

- **The new norms mean** that apps like WhatsApp, Telegram, Signal, Arattai, Snapchat, ShareChat and JioChat **must continuously verify** if the smartphones running them have the same SIM card active on them or not.
  - If the registered SIM is not found on the phones, **the apps must stop functioning.**
  - **For web versions of these apps,** the service must automatically log out users periodically, no later than every six hours.
- This regulation aims to prevent cyber fraud and enhance security.
- **It also warned that failure to comply** with the new norms will lead to action being taken under the Telecommunications Act, 2023, the Telecom Cyber Security Rules and other applicable laws.

SANCHAR SAATHI APP

Department of Telecommunications (DoT) has directed phone makers to pre-install the Sanchar Saathi app on devices sold from March 2026 onwards.

About

- In 2025, the **Department of Telecommunications** launched the **Sanchar Saathi Mobile App** for both Android and iOS to help users report and protect against mobile related fraud and theft.
- **Key Features:**
  - **Chakshu:** Users report suspected fraud via calls, SMS, or WhatsApp, targeting scams like fake KYC updates.
  - **IMEI Tracking and Blocking:** Tracks and blocks lost/stolen phones nationwide across all telecom networks.
  - **Verify Mobile Handset Genuineness:** Checks if a device is authentic using IMEI or barcode scan.
  - **Report Masked International Calls:** Flags calls from abroad disguised as local (+91 followed by 10 digits).
  - **Know Your Internet Service Provider:** Searches wireline ISPs by PIN code, address, or name.

PRADHAN MANTRI VIRASAT KA SAMVARDHAN (PM VIKAS)

PM VIKAS is uplifting minority communities through skill development and promoting entrepreneurship.

About PM VIKAS

- It is a **Central Sector Scheme** of the Ministry of Minority Affairs which converges five erstwhile schemes viz. 'Seekho Aur Kamao', 'Nai Manzil', 'Nai Roshni' and 'USTTAD' & 'Hamari Dharohar'.

- It focuses on **upliftment of six notified minority communities** through skill development; entrepreneurship and leadership of minority women; and education support for school dropouts.
- It also provisions to facilitate credit linkages by connecting beneficiaries with loan programs offered by the National Minorities Development & Finance Corporation (NMDFC).
  - 3 percent of the total seats are reserved for Persons with Disability (PwDs) across all the scheme components.

'YOUR MONEY, YOUR RIGHT' MOVEMENT

Prime Minister Narendra Modi urged citizens to participate in the 'Your Money, Your Right' movement.

About

- It is an initiative, launched in October 2025, was designed to ensure citizens can reclaim their rightful assets.
- It aimed at helping people recover unclaimed deposits, insurance proceeds, dividends and other financial assets.
- It offers individuals a chance to convert forgotten financial assets into usable funds.

Various Steps

- Dedicated online portals have been created to enable easy **tracking and claiming of funds:**
  - RBI UDGAM Portal for unclaimed bank deposits
  - IRDAI Bima Bharosa Portal for unclaimed insurance proceeds
  - SEBI MITRA Portal for unclaimed mutual fund amounts; and
  - IEPFA Portal for unpaid dividends and unclaimed shares.
- Facilitation camps have been held in 477 districts across the country, with a focus on rural and remote areas.

Additional Information

Indian banks currently hold about ₹78,000 crore in unclaimed deposits. Insurance companies have nearly ₹14,000 crore lying unclaimed, mutual fund companies around ₹3,000 crore, and unclaimed dividends amount to roughly ₹9,000 crore.

GIRG FRAMEWORK

The Government of India has undertaken the Global Indices for Reforms and Growth (GIRG) initiative to benchmark national performance against international indices and guide evidence-based policy reforms.

About

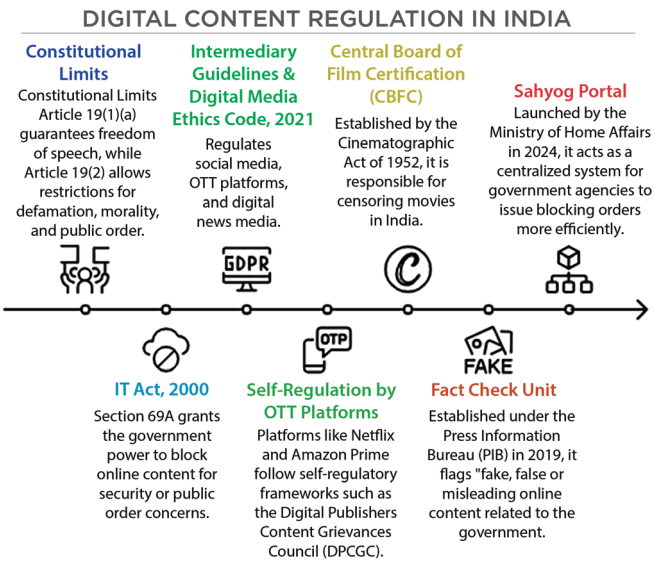
- **The Global Indices for Reforms and Growth (GIRG)** is an inter-ministerial mechanism for monitoring progress across **26 global indices** published by **16 international agencies.**
  - These Indices are spanning **four broad themes:** economy, development, governance, and industry.
- **Each index** has been assigned to a **specific nodal ministry,** responsible for reviewing methodologies, engaging with publishing organisations and ensuring that India's latest official data is used in the computations.
- **The Development Monitoring and Evaluation Office (DMEO) at NITI Aayog** will serve as the central coordinating body for this exercise.

'FAKE NEWS' SAID PARLIAMENTARY PANEL

A Parliamentary Standing Committee on Communications and IT, released a report titled "Review of Mechanism to Curb Fake News."

Major Highlights

- **Define Fake News:** It has asked the government to define the term 'fake news' and incorporate suitable clauses in the existing regulatory framework to combat misinformation and protect freedom of speech.
- **Amendments:** There is a need to amend the penal provisions for publishing/telecasting fake news in relevant Acts/Rules/ Guidelines for each form of media (print, electronic, digital).
- **Fact Checking Mechanism:** Having a fact-checking mechanism and internal ombudsman in media organisations will strengthen the role of self-regulatory mechanism.
- It also urged the government to incorporate clauses while maintaining the balance between combating misinformation and protecting freedom of speech and individual rights.



Recommended Measures to Combat Disinformation in India (Global Risks Report 2025)

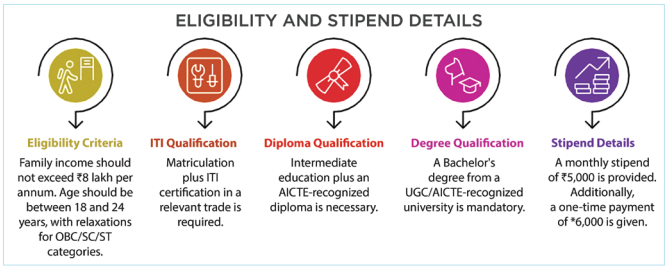
- **Strengthening Technical Capacity & Oversight:** Upskill algorithm developers to **reduce bias** and manipulation in AI systems.
  - Establish AI supervisory boards and councils to monitor and regulate generative AI practices.
  - Mandate regular risk assessments by digital platforms, especially those using AI.
- **Boosting Public Awareness & Digital Literacy:** Expand digital literacy campaigns to help citizens identify and resist disinformation.
  - Promote critical thinking through educational reforms and public outreach.
- **Regulating Big Tech Platforms:** Leverage India's status as the largest market for platforms like Facebook and WhatsApp to demand accountability.

PM INTERNSHIP SCHEME

The PM Internship Scheme's pilot project has exceeded its target of providing 1.25 lakh internship opportunities in a year but only one in five candidates accepted PM Internship Scheme offers, and 20% of them quit early. Candidates cited locations, roles, and duration as reasons for declining offers.

About

- **Announced in:** Union Budget 2024-25.
- **Aim:** To provide 12-month internships for one crore candidates in the age group of 21 to 24 years, for five years.
  - To provide real-life work experience to job seekers in top companies.
- **Implementing Agency:** Ministry of Corporate Affairs.
- **Vacancies:** 1,25,000 positions in 500 top companies for FY - 2024-25.
- **The top companies** have been identified based on the average Corporate Social Responsibility expenditure of the last three years.
  - Participation of the companies in the scheme is **voluntary.**



DHRUVA FRAMEWORK

The Department of Posts (DoP) under the Ministry of Communications has proposed Digital Hub for Reference and Unique Virtual Address (DHRUVA), an interoperable, standardized and user-centric Digital Address System for India.

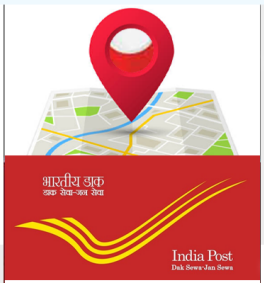
About DHRUVA

- A national framework to create virtual, **UPI-like address labels** such as "name@entity" that serve as proxies for physical locations.
- The system is built as a part of its **Digital Public Infrastructure** initiatives and will allow private firms to participate.
- At its core is the concept of **Address-as-a-Service (AaaS)** — the array of services associated with address data management to support secure, consent-driven sharing of location information.

SMART ADDRESSES

A draft amendment seeks to enable an interoperable system replacing physical addresses with smart labels like ***"name@entity"*** powered by DIGIPIN for precise geolocationa

- Labels will be provided by address service providers, while consent architecture will be managed by address information agents
- It will be based on the DIGIPIN system, which is a 10-character alphanumeric expression of latitude and longitude coordinates



- The technology was developed to provide more precise locations in rural areas or in cases where the textual expression of a physical address does not
- The draft amendment is under consultation; Section 8 entity proposed (like NPCI for UPI)
- The system will be built as part of government's digital public infrastructure initiatives, and will allow private firms to participate

RIGHT TO DISCONNECT

A private member bill "Right to Disconnect Bill, 2025", reintroduced in the Lok Sabha.

About

- The Right to Disconnect refers to an employee's right to not engage in work-related communications—such as calls, emails, or messages—outside official working hours.
- It aims to protect workers from excessive digital connectivity and ensure a healthy work–life balance.

Key Features of the Bill

- The draft legislation proposes **giving workers the legal right to ignore official communication** outside designated working hours without facing disciplinary action.
- **The Bill mandates following Rights:** Right to refuse after-hours calls, messages and emails without repercussions.
  - Setting up an **Employees' Welfare Authority** to implement and monitor the right to disconnect.
  - **A national baseline study** to assess digital communication burdens on employees outside work hours.
  - **Mandatory negotiations** between companies with **more than 10 workers** and employees/unions to frame work rules performed beyond office hours, which would qualify for overtime at normal wages.
  - **Counselling services and digital detox centres** to be established in coordination with the government.
  - **Penalties for companies** that violate the provisions, up to 1% of their total employee remuneration.

Public Bill	Private Bill
It is introduced in the Parliament by a minister.	It is introduced by any member of Parliament other than a minister.
It reflects of the policies of the government (ruling party).	It reflects the stand of opposition party on public matter.
It has greater chance to be approved by the Parliament.	It has lesser chance to be approved by the Parliament.
Its rejection by the House amounts to the expression of want of parliamentary confidence in the government and may lead to its resignation.	Its rejection by the House has no implication on the parliamentary confidence in the government or its resignation.
Its introduction in the House requires seven days' notice.	Its introduction in the House requires one month's notice.
It is drafted by the concerned department in consultation with the law department.	Its drafting is the responsibility of the member concerned.

Countries Having the Law

- **Australia** recently enacted the laws for the right to disconnect in **2024.**
  - By enacting this law, Australia joined about two dozen other countries, **mainly in Europe and Latin America,** that have similar regulations.
- **France** was one of the pioneers in implementing its right to disconnect in **2017**.

Status in India

- **India does not have specific laws** recognising the right to disconnect from work.
- **Article 38 of the Constitution** mandates that "the State shall strive to promote the welfare of the people".
- **Article 39(e) of the Directive Principles of State Policy** directs the state to direct its policy towards securing the strength and health of its workers.

FDTL RULES

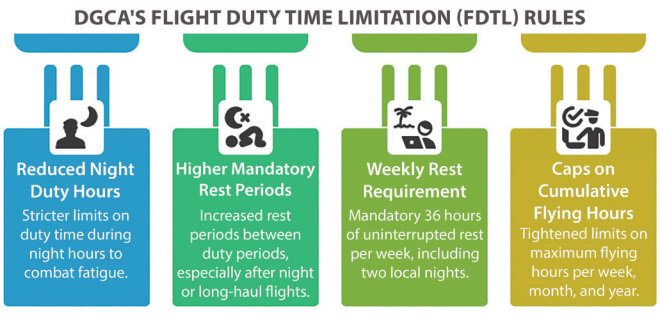
A large-scale cancellation of flights by a major Indian airline Indigo recently led the Directorate General of Civil Aviation (DGCA) to grant a one-time exemption from the newly implemented Flight Duty Time Limitations (FDTL) rules.

Background:

- IndiGo, India's largest airline, faced a severe operational crisis on early December 2025:
  - Over 1,000 flights were cancelled on a single day, with more than 800 additional cancellations the following day.
  - Passengers across major airports were left stranded, leading to widespread public outrage.

Root Causes

- It is pointed to poor **resource mapping**, inadequate **predictive rostering**, and the **DGCA's reactive oversight** as deeper causes, while the IndiGo attributed the disruptions to **'crew unavailability' and 'mismanagement'.**
- IndiGo failed to adequately plan for the implementation of **new Flight Duty Time Limitations (FDTL)** for pilots, despite having prior notice.



Compulsory Resource Mapping

- Every airline in India, under DGCA regulations, **submits manpower data annually.** But these filings are **neither standardized nor publicly audited.**
  - **Compulsory resource mapping** became a **regulatory requirement** rather than a compliance formality to prevent future crises.
  - **Such mapping would involve:**
    - Dynamic tracking of crew availability, certifications, and fatigue data integrated into DGCA's central systems.
    - AI-based predictive algorithms that forecast shortages weeks ahead.
    - Mandatory third-party audits of airline rostering and scheduling mechanisms.
  - It would enhance transparency and allow regulators to intervene before a breakdown occurs.

Directorate General of Civil Aviation (DGCA)

- It is India's apex regulatory body for civil aviation, operating under the Ministry of Civil Aviation.
- It was created in 1927 and became a statutory body in 2020 after amendments to the Aircraft Act.
- **Organizational Structure:**
  - **Headquarters:** Located in New Delhi.
  - **Regional Offices:** Spread across major cities to manage local aviation oversight.
- **Legal Framework:**
  - The Aircraft Act, 1934
  - The Aircraft Rules, 1937
  - The Aircraft (Investigation of Accidents and Incidents) Rules, 2021 and 2025
  - Various Civil Aviation Requirements (CARs) and Air Safety Circulars

Key Functions of the DGCA:

- **Safety Oversight:** DGCA is primarily responsible for enforcing civil air regulations, airworthiness standards, and air safety norms across all Indian civil aviation operations.
- **Licensing and Certification:**
  - Issues licenses to pilots, aircraft maintenance engineers, and air traffic controllers.
  - Certifies aircraft and aviation training organizations.
- **Regulation of Air Transport Services:** Oversees scheduled and non-scheduled air transport services to, from, and within India.
- **Accident Investigation:** Coordinates and monitors investigations into aviation accidents and incidents.
- **International Coordination:** Represents India in the **International Civil Aviation Organization (ICAO)** and ensures compliance with global aviation standards.

TENTH SCHEDULE

A private member's bill titled "The Constitution (Amendment) Bill, 2025 (Amendment of the Tenth Schedule)" has been introduced in Lok Sabha.

Major Highlights of the Bill

- **The Tenth Schedule to the Constitution**, popularly known as the **Anti-Defection Law**, was added to the Constitution by the Constitution **(Fifty-second Amendment) Act, 1985.**
- **The Bill** prescribes that a member **will lose their seat only** if they vote, or abstain from voting, in violation of their party's direction on a Confidence Motion, No-confidence Motion, Adjournment Motion, Money Bill, or other financial matters — **and not for any other type of vote.**
- **It allows parliamentarians** to take an independent line in voting on bills and motions.

Anti Defection Law

- The **Tenth Schedule of the Constitution,** also known as the anti-defection law, was added to **prevent political defections.**
- **Disqualification on ground of defection:** A legislator belonging to a political party will be disqualified if he/she:
  - **voluntarily** gives up his party membership, or
  - votes/abstains to vote in the House **contrary to the direction** issued by his political party.
  - **Independent members** will be disqualified if they **join a political party** after getting elected to the House.
  - **Nominated members** will be disqualified if they join any political party **six months after getting nominated.**
  - A member is not disqualified if he has taken **prior permission** of his party, or if the voting or abstention is condoned by the party within 15 days.
- **Exemptions in cases of merger:** Members are exempted from such disqualification when **at least two thirds** of the original political party merges with another political party.
  - the **members must have become members of the party** they have merged with/into,
  - or they should have not accepted the merger and choose to **function as a separate group.**
- **Decision making authority:** The decision to disqualify a member from the House rests with the **Chairman/Speaker of the House.**

About Whip

- A **whip** is an official directive issued by a political party to its legislators, instructing them to vote in the legislature in accordance with the party's decision.
- Political parties issue whips to their MPs to either vote for or against the bill, depending on their party line.
  - Once the whip is issued, the MPs from each party will **necessarily have to obey the whip** or else risk losing their seat in Parliament.

- The term is derived from the old **British practice of "whipping in"** lawmakers to follow the party line.
- **It is not mentioned in the constitution** but is considered a parliamentary convention.
- Parties appoint a senior member from among their House contingents to issue whips — this member is called a **chief whip,** and he/she is assisted by **additional whips.**

Types of Whip

There are three kinds:

- **A one-line whip** just informs members about a vote but permits them to abstain.
- **A two-line whip** asks them to be present but does not tell them how to vote.
- **The three-line whip,** largely the norm these days, directs members to be present and vote as per the party line.

Importance of a Whip

- The whip maintains discipline, secure attendance of, and gives necessary information to, members of the party.
- It is a **channel of communication** between the political party and the members of the party in the legislature.
- They also serve the **function of gauging the opinion** of the members, and communicating it to party leaders.

AUTONOMOUS BODIES

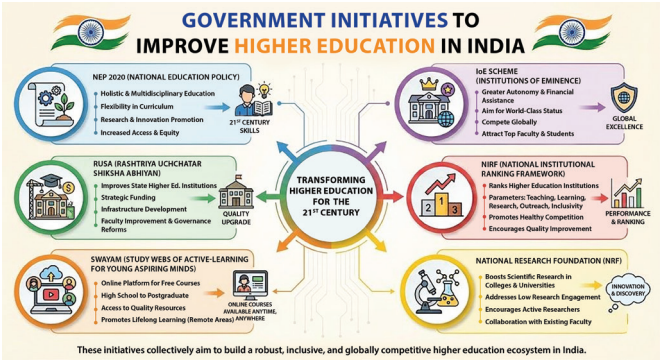
The Parliamentary Standing Committee on Education, Women, Children, Youth and Sports tabled its 371st report on the autonomous bodies under the Department of Higher Education.

Major Highlights of the Report

- **Performance of NTA:** It highlighted the performance of the **National Testing Agency (NTA),** noting recent irregularities in examinations.
  - **Repeated delays and errors in major examinations**, including NEET-UG, UGC-NET, CUET, and JEE (Main).
  - It urged that such avoidable errors must not recur.
- **Infrastructure Gaps:** Persistent gaps in faculty recruitment and infrastructure, including lack of seed grants for new faculty in central universities and UGC-funded institutions, and constraints in implementing Multiple Entry Multiple Exit programs.
- **Delays in Online Education:** It flagged delays in online and distance education approvals for institutions with lower NAAC accreditation scores, urging the UGC to reconsider these restrictions.
- **On Accreditation**: It highlighted concerns with the **National Assessment and Accreditation Council (NAAC),** which evaluates higher education institutions.
  - It called for detailing the extent of irregularities uncovered and the corrective steps taken.
  - **Reforms needed** such as the Basic Accreditation Framework (BAF) and Maturity Based Graded Levels (MBGL) to ensure a more objective, transparent process with limited scope for discretion.
- **On Draft UGC Regulations:**
  - It recommends that the draft UGC regulations of January 2025 be referred to the Central Advisory Board of Education (CABE) for wider stakeholder consultation.
  - The Committee emphasised that these regulations should uphold both national standards and state autonomy.

Recommendations

- **Digital Examinations Held by NTA:** It recommended NTA to build greater in-house capacity and place renewed emphasis on pen-and-paper testing to reduce the vulnerabilities associated with digital and outsourced exams.
  - It also recommended a nationwide list of blacklisted firms involved in paper-setting and administration to prevent recurrence of lapses.
- **Remunerations:** It recommends extending the Unified Pension Scheme (UPS) to faculty and non-teaching staff in centrally funded institutions, increasing Junior Research Fellowship (JRF) amounts, and implementing the 7th Pay Commission in ICSSR research institutes.
- **Fill Vacancies:** It also called for immediate filling of vacancies, implementation of promotions, and appointment of leadership positions across ICSSR research institutions.
- **On Governance**: The Committee urged greater participatory decision-making in bodies to preserve its autonomous character.
- **Accreditation:** Highlighting the challenges of implementing NEP 2020, the Committee stressed the need for faster, streamlined accreditation and evaluation processes.
- It also recommended **measures to regulate the proliferation of private coaching centres** and ensure that examination papers reinforce school curricula rather than parallel coaching syllabi.



HUMAN RIGHTS DAY 2025

Human Rights Day is observed annually around the world on 10th December.

About

- The day marks the adoption of the **Universal Declaration of Human Rights (UDHR)** by the United Nations General Assembly in **1948.** Human Rights Day has been observed every year since **1950.**
- **Theme for 2025:** "Human Rights, Our Everyday Essentials".

About Universal Declaration of Human Rights (UDHR)

- The document, consisting of a **preamble and 30 articles** setting out fundamental rights and freedoms.
- This landmark document enshrines the inalienable rights that everyone is entitled to as a human being - regardless of **race, color, religion, sex, language, political or other opinion**, **national or social origin, property, birth** or other status.
- The declaration **is not a treaty** and **is not legally binding** in itself, but the principles it sets out have been incorporated into many countries' laws and is viewed as the **basis for international human rights law.**

Human Rights

- **Human rights** are *rights* and *freedoms* that are inherent to all human beings, regardless of nationality, ethnicity, gender, religion, or any other status.
- These rights are considered **universal, inalienable, and indivisible,** forming the foundation for **human dignity, equality, and justice.**
- **Human rights are different from the Civil rights** that are created and defined by laws within a specific nation.
  - **Civil rights** are legal rights granted and protected by a government, and they may change over time as laws are amended or updated.

Significance of Human Rights

- **Inherent Dignity:** Human rights affirm the inherent dignity of every individual.
- **Equality and Non-Discrimination:** They strive to ensure that all individuals have equal opportunities and are treated with fairness and without prejudice.
- **Protection from Abuse:** Human rights provide a framework for holding governments, institutions, and individuals accountable for actions that violate these rights, promoting justice and accountability.

National Human Rights Commission (NHRC) in India

- It is a **statutory body established in 1993** under the **Protection of Human Rights Act** for promoting and protecting human rights in India.
- It consists of a Chairperson (a former CJI or Supreme Court judge), judicial members, human rights experts, and ex-officio members from national commissions.

Functions of NHRC

- Inquire into human rights violation on its own or a petition by a victim
- Intervene in proceeding involving human right violation pending before a court with approval of such court
- Visit any jail or institution under control of State Government to study living
- Review law and procedure for protection of human rights
- Review factors, including acts of terrorism that inhibit human rights

INDIA'S GLOBAL EDUCATION VISION 2047

NITI Aayog unveiled a roadmap to transform India into a global hub for education and research by 2047.

Internationalisation of Higher Education

- Internationalisation means integrating a global and intercultural dimension into Indian universities — not just sending students abroad but bringing the world into Indian campuses.
- **It involves:**
  - Student and faculty exchange across countries,
  - Joint research and dual-degree programs,
  - Global university campuses in India, and
  - Recognition of degrees and credits across borders.
- This vision aligns with NEP 2020, which calls for making Indian education globally relevant while preserving Indian values and knowledge traditions.
- **Examples:** IIT Madras in Zanzibar, IIT Delhi in Abu Dhabi, and University of Southampton in Gurugram.

Why Internationalisation Matters for India

- **Reducing the Brain Drain:**
  - Over 13 lakh Indian students studied abroad in 2024, while India hosted only 50,000 foreign students.

- Each year, students spend around ₹6.2 lakh crore overseas — a huge outflow of talent and capital.

- **Improving Domestic Education Quality:** 97% of Indian students study at home. International collaborations can raise the teaching, research, and innovation standards of Indian universities.
- **Boosting Research and Global Reputation:** Global tie-ups lead to joint patents, citations, and research funding, positioning India as a knowledge economy.
- **Soft Power and Economic Benefits:** Education is a major export — the US and UK earn billions from international students. India can do the same, especially with the Global South.
- **Meeting Global Skill Demand:** With its young population, India can supply trained professionals in AI, climate science, and healthcare if education aligns with global standards.

Challenges in Implementation

- **Regulatory Overlap:** Confusing rules across UGC, AICTE, and NAAC deter foreign partnerships.
- **Inequality Risk:** Top universities attract collaborations; rural colleges may lag.
- **Cultural Identity Loss:** Western curricula could overshadow Indian Knowledge Systems (IKS).
- **Brain Drain:** For every foreign student coming in, 28 Indians go abroad.

NITI Aayog's Key Recommendations

- **National Task Force:** Coordinate reforms through an inter-ministerial body.
- **Global Education Hubs:** Build research clusters linked to Digital India, Make in India, and Startup India.
- **Ease of Collaboration:** Create a Foreign Degree Equivalence Portal and simplify visas and documentation.
- **Foreign University Campuses:** Allow "Campus within a Campus" with single-window approval.
- **Research & Financing:** Launch a $10 billion Bharat Vidya Kosh to fund joint research and innovation.
- **Talent Attraction:** Start a Vishwa Bandhu Fellowship to bring top global faculty to India.
- **Branding India:** Expand the Study in India portal and use the Indian diaspora as global ambassadors.

Analytical Perspective

- NITI Aayog's plan views education as both a national investment and a tool of diplomacy.
- By turning India from a "talent exporter" to a knowledge destination, it bridges the gap between economic growth and educational excellence.
- However, balancing global integration with local inclusion — ensuring rural institutions, regional languages, and traditional knowledge thrive — will define India's success.

ELECTORAL TRUSTS IN INDIA

After the Supreme Court struck down electoral bonds, companies have turned to electoral trusts for donations.

Understanding Electoral Trusts

- Electoral trusts are non-profit organizations set up by Indian companies to collect and distribute political donations to registered political parties.
- They were introduced under the Electoral Trust Scheme, 2013 by the Central Board of Direct Taxes (CBDT) to make political funding transparent and accountable.
- Their main goal is to replace opaque, cash-based donations with traceable, bank-based transfers, ensuring both donors and political beneficiaries are publicly identifiable.

What Was the Electoral Bond Scheme

- The Electoral Bond Scheme (2018) allowed individuals and companies to donate to political parties anonymously through special bonds purchased from the State Bank of India (SBI).
- While it aimed to curb cash donations, the Supreme Court struck it down in 2024, ruling that it violated the Right to Information (Article 19(1)(a)) and undermined transparency in elections.
- Following this verdict, electoral trusts became the only legal and transparent channel for corporate political funding in India.

How do Electoral Trusts Function

- **Formation:** Any company registered under the Companies Act can form an electoral trust.
- **Donors:** Indian citizens, companies, firms, or Hindu Undivided Families (HUFs) can donate through cheques or electronic transfers.
- **Beneficiaries:** Only political parties registered under Section 29A of the Representation of the People Act, 1951.
- **Mandatory Rule:** 95% of all funds collected each year must go to political parties; only 5% may cover administrative expenses.
- **Transparency:** Trusts must submit audited records of donors and disbursements to the CBDT and Election Commission of India (ECI) annually.
- **Renewal:** Registration must be renewed every three years.

Why Electoral Trusts Matter

- **Transparency in Political Finance:** Electoral trusts promote public accountability while allowing legitimate corporate participation.
- **Corporate Influence:** Their growing dominance by a few big donors raises ethical concerns about policymaking bias.

- **Electoral Equality:** Transparency empowers voters to know who funds whom, strengthening informed democratic choice.
- **Fiscal Legitimacy:** Donations qualify for tax deductions, promoting legal and traceable funding.
- **Post-Bond Transition:** With the electoral bonds ban, electoral trusts now represent a constitutionally compliant and transparent alternative.

MATERNAL MORTALITY RATE (MMR)

India's institutional delivery rate has reached 89%, driving a sharp decline in the Maternal Mortality Rate (MMR).

Understanding Maternal Mortality

- Maternal mortality reflects the health of women, quality of healthcare, and equity in access.
- It measures maternal deaths per 1,00,000 live births — caused by pregnancy or childbirth-related complications.
- It differs from the maternal mortality rate, which measures deaths per lakh women aged 15–49.
- The Sustainable Development Goal (SDG) 3.1 aims to reduce global MMR to below 70 by 2030 — a target closely tied to gender justice and healthcare access.

India's Progress – A Public Health Success Story

- India's MMR fell from 130 (2014–16) to 97 (2018–20), achieving the National Health Policy (NHP 2017) goal of MMR below 100 well before 2020.
- Institutional births rose to 89% nationally, ensuring safer deliveries and better emergency care.
- States like Kerala, Tamil Nadu, and Goa report near-zero maternal deaths, proving that strong health systems, literacy, and women's empowerment yield results.

Reasons behind MMR

- **Economic Barriers:** Despite public schemes, out-of-pocket spending on medicines and diagnostics remains high.
- **Socio-Cultural Constraints:** Women's limited decision-making, low education, and stigma delay care-seeking.
- **Rising High-Risk Pregnancies:** Late motherhood, malnutrition, and lifestyle diseases (like hypertension and diabetes) increase complications.
- **Infrastructure Gaps:** Remote and tribal regions lack emergency obstetric services, blood banks, and transport for critical care.
- These issues reveal that maternal mortality is not just medical—but deeply structural, shaped by inequality, gender, and governance.

Government Interventions – From Access to Quality

- **Janani Suraksha Yojana (JSY):** Incentivises institutional delivery for poor women — the single biggest driver of MMR decline.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY):** Offers maternity benefits to compensate for wage loss during childbirth.
- **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA):** Provides free quality antenatal care on the 9th of every month.
- **LaQshya Programme:** Focuses on delivery-room safety and reducing intrapartum deaths.
- **Maternal Death Surveillance Review (MDSR):** Tracks and analyses every maternal death to prevent recurrence.
- Together, these initiatives represent a shift from reactive care to preventive and accountable healthcare systems.

Best Practices and Case Studies

- **Tamil Nadu Model:** Integrates emergency transport, referral networks, and skilled birth attendants — cutting MMR to 58.
- **Madhya Pradesh's Dastak Abhiyan:** Uses village-level volunteers to detect and refer high-risk pregnancies early.
- **Kerala's Kudumbashree Model:** Links women's empowerment with health literacy and maternal care.
- These models show that governance, decentralization, and community participation are as vital as hospitals or doctors.

SC WIDENS AMBIT OF POSH

The Supreme Court has expanded the jurisdiction of Internal Complaints Committees (ICCs) under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act).

Key Observations of the Supreme Court

- SC said that the complaints should be filed not just at the accused's workplace but also at the complainant's workplace or any employment-related site.
- **Expanded Meaning of 'Workplace':**
  - Workplace is not limited to physical office spaces it Includes virtual/online platforms, off-site work locations, places visited during the course of employment
  - Reflects evolving nature of work-from-home and digital workspaces.
- **Wider Interpretation of 'Aggrieved Woman':** Protection extends beyond formal employees includes **contractual workers, Interns and trainees, domestic workers,** Visitors and clients, where power imbalance exists.
- **Emphasis on Substantive Justice:** Technical or procedural gaps cannot defeat the object of the law.
  - POSH Act must be interpreted to uphold dignity, equality and safe working conditions.

About POSH

- **Origin:** Enacted following the Supreme Court's Vishaka v. State of Rajasthan judgment (1997), which laid down binding guidelines to fill the legislative vacuum on workplace sexual harassment.

- **Objective:** Prevention, prohibition and redressal of sexual harassment of women at the workplace.
- **Scope and Coverage:** The Act applies to all workplaces, including government offices, private sectors, NGOs, educational institutions, hospitals, sports bodies, and unorganized sectors, extending protection even to domestic workers in residences used for employment.
- **Institutional Framework:** Every organization with 10 or more employees must constitute an Internal Complaints Committee (ICC), with the presiding officer and at least half the members being women, including an external NGO expert.
  - For workplaces with **fewer than 10 employees**, District Officers form **Local Complaints Committees (LCCs)** at the district level to ensure accessibility.
- **Complaint and Inquiry Process:** Complaints must be filed within 3 months of the incident (extendable by another 3 months for sufficient cause) to the ICC or LCC, which conducts a time-bound **inquiry within 90 days**, maintaining confidentiality and natural justice principles.
  - Outcomes include conciliation, disciplinary action up to termination, or compensation, with appeals to courts within 90 days; false complaints also attract penalties.

COLLIERY CONTROL (AMENDMENT) RULES, 2025

India amended coal mining rules to decentralise approvals and speed up operations while maintaining regulatory oversight.

Background

- Coal and lignite are vital to India's energy security, meeting nearly 50% of power demand. However, mining approvals have traditionally been slow due to multiple layers of permission.
- Under Rule 9 of the Colliery Control Rules, 2004, mine owners had to seek prior approval from the Coal Controller's Organisation (CCO) before opening or reopening any mine or individual seam (a coal layer).
- If a mine remained closed for over 180 days, fresh approval from CCO was mandatory — causing procedural delays and project backlogs.

Amendment Provisions (2025)

- The authority to approve mine or seam openings is now delegated to the company's board.
- The board must ensure compliance with all Central/State and statutory approvals before granting permission.
- Companies must notify the CCO for record-keeping and audit.
- For non-company entities, CCO approval remains mandatory.

Key Bodies and Concepts

- **Coal Controller's Organisation (CCO):**
  - A statutory body under the Ministry of Coal.
  - Oversees mine operations, coal quality, production records, and safety compliance.
  - Acts as the nodal regulator ensuring fair distribution and environmental standards.
- **Board of Directors (Coal Companies):**
  - The corporate governing body responsible for approving mine operations under the amended rules.
  - Must ensure all statutory clearances (environmental, safety, and land use) are obtained before mine opening.
- **Seam:** A geological layer of coal within the earth's crust that can be mined commercially.

SUPREME COURT'S RULING ON NARCO TESTS

The Supreme Court ruled that forced or involuntary narco tests are unconstitutional and invalid.

About Narco Test

- It is a **forensic interrogation technique** in which it is expected that the accused, undergoing such a test, would express the concealed facts.
- In this test the accused is sedated by administering a certain class of substances, such as **barbiturates**, for instance, **Sodium Pentothal**, to reduce a subject's inhibitions and reasoning ability.
- It is a non-violent method similar to those called **polygraphs or brain mapping.**

Legality of Narco Test

- The Supreme Court, referencing the Selvi v. State of Karnataka (2010) **guidelines**, ruled that any test conducted **without free consent is unconstitutional** and its results cannot be used as evidence.
  - This upholds **Article 20(3)'s** protections against ex-post facto laws, double jeopardy, and self-incrimination.
  - Such tests also violate the **Right to Privacy under Article 21**, which, along with **Articles 14 and 19—the "Golden Triangle"—safeguards personal liberty and democratic principles.**
- In **Manoj Kumar Saini v. State of MP (2023) and Vinobhai v. State of Kerala (2025)**, courts held that narco test results alone do not prove guilt and must be corroborated with other evidence.
- The Supreme Court emphasized that consent must be **informed, recorded before a magistrate**, and conducted with medical, legal, and procedural safeguards.

Significance of the Ruling

- **Strengthens Individual Liberties:** Reaffirms the protection against self-incrimination and personal liberty.
- **Limits Intrusive Practices:** Modern investigative tools cannot override **constitutional guarantees.**
- **Judicial Oversight:** Emphasises the need for **informed consent and judicial scrutiny**, preventing arbitrary use of scientific interrogation techniques.
- **Evidentiary Clarity:** Narco test results have **limited legal value** and cannot be directly used to convict an accused.

PRADHAN MANTRI GARIB KALYAN PACKAGE

The Supreme court extends Rs 50 Lakh Pradhan Mantri Garib Kalyan Package (PMGKY) insurance to all doctors, including private practitioners,irrespective of formal government requisition who died performing COVID duties.

About

- **Overview:** The PMGKP Insurance Scheme is a specific component under the larger **Pradhan Mantri Garib Kalyan Package**, launched in March 2020.
- **Coverage:** Personal accident insurance cover of Rs 50 lakh per eligible health worker.
- **Risks Covered:** Death due to COVID-19 infection.
  - Accidental death while performing COVID-related duty.

Significance of the Judgment

- Families of eligible doctors entitled to **₹50 lakh insurance** compensation.
- **Reinforced state responsibility** towards frontline workers.
- **Strengthens trust** in government welfare schemes.
- Sets precedent for **humanitarian interpretation** of relief policies.
- Recognises contributions of the private **healthcare sector.**

BRIDGE SUMMIT 2025

Bridge Summit 2025, the world's largest debut media event, concluded at the Abu Dhabi National Exhibition Centre after a three-day programme.

About

- **BRIDGE Summit** is a first-of-its-kind event that **acts as both a conference and exhibition** for the entire scope of media and entertainment related industries.
- It gathers 1000s of creators, communicators, brands, leaders, and decision-makers in one space to collectively align towards a more valuable, connected, and prosperous future.

Aim of BRIDGE Summit

- Unite **global creators and industry stakeholders** for collaboration, innovation, and investment.
- Explore major themes like **AI in media**, content monetization, distribution strategies, and creator-led ecosystems.
- Build **global partnerships**, shape media governance discussions, and foster cross-sector cooperation.
- Introduce initiatives like sessions on **information integrity** with organisations such as **UNESCO**, reflecting the event's strategic depth.

MAHACRIMEOS AI

Microsoft Chairman Satya Nadella announced the statewide rollout of its AI-powered investigation platform for the Maharashtra Police "MahaCrimeOS AI".

MahaCrimeOS

- The platform MahaCrimeOS AI, was developed jointly with the Maharashtra Government and its specialised AI policing initiative, MARVEL (Maharashtra Research and Vigilance for Enhanced Law Enforcement).
- **MahaCrimeOS AI** ingests complaints in any format, such as PDFs, audio, handwritten notes or images and then uses multimodal intelligence to extract critical information in any language.
  - The system adapts investigation paths, automates analysis and profiles persons of interest with unparalleled speed and efficiency.

MARVEL

- MARVEL is a **special-purpose vehicle (SPV) government entity** created in **2024** to introduce AI-based solutions in policing.
- MARVEL was set up to strengthen police intelligence, improve crime prediction and modernise investigation methods, making **Maharashtra the first state** in India to create an independent AI body for law enforcement.

NATIONAL BLOOD TRANSFUSION BILL 2025

The National Blood Transfusion Bill, 2025 was introduced in Parliament to establish a dedicated legal and institutional framework for blood transfusion services in India.

About

- Blood transfusion services are regulated under the **Drugs and Cosmetics Act, 1940**, which is considered inadequate for managing blood as a life-saving public resource.
- The Bill seeks to move blood transfusion services out of **regulatory grey zones** into a clear, safety-first national framework.

Key Provisions of the National Blood Transfusion Bill, 2025

- Establishment of a National Blood Transfusion Authority (NBTA) as a statutory body.

- NBTA to prescribe uniform national standards for:
  - Collection, testing and processing of blood
  - Storage, distribution, issuance and transfusion of blood and blood components.
- **Mandatory registration** of all blood centres across the country.
- Introduction of **strict penalties** for unsafe, unethical or non-compliant practices.
- **Promotion of voluntary blood donation** through coordinated national programmes.
- Creation of a **national haemovigilance system** to monitor transfusion-related adverse events.

Penalties for Non-Compliance

- **Operating without registration:** Up to 3 years imprisonment and/or ₹10 lakh fine.
- **Transfusing contaminated/unsafe blood:** Minimum 2 years imprisonment (extendable to 5 years) and a minimum fine of ₹5 lakh.
- **General contraventions:** Fines starting from ₹10,000.

GLOBAL SUMMIT ON TRADITIONAL MEDICINE

India hosted the 2nd WHO Global Summit on Traditional Medicine in New Delhi. The theme of the summit is "Restoring Balance for People and Planet: The Science and Practice of Well-Being."

Key Outcomes of the Summit

- **Initiatives Launched:**
  - **My Ayush Integrated Services Portal (MAISP):** A master digital portal for services, research and governance in the Ayush sector.
  - **Ayush Mark:** Envisioned as a global quality benchmark for Ayush products and services.
  - **Traditional Medicine Global Library (TMGL),** the world's largest digital repository on traditional, complementary and integrative medicine.
  - The initiative is grounded in the Gujarat Declaration (2023) and aligned with WHO's Global Traditional Medicine Strategy 2025–2034.
- Announcement of international collaborations, including a Centre of Excellence for BIMSTEC countries and an India–Japan partnership in traditional medicine.
- The summit stressed the use of digital health tools and AI for research, data generation and wider access to traditional medicine.

What are Traditional Medicines?

- Traditional medicine refers to **codified or non-codified systems** for health care and well-being, comprising **practices, skills, knowledge and philosophies** originating in different historical and cultural contexts, which are distinct from and pre-date biomedicine, evolving with science for current use from an experience-based origin.
  - Traditional medicine emphasizes **nature-based remedies** and holistic, personalized approaches to restore balance of mind, body and environment.
  - The WHO Global Traditional Medicine Centre (GTMC) in **Jamnagar, Gujarat.**

Traditional Medicine System in India	
Ayurveda	Ayurveda is the time tested traditional system of medicine of India. The term 'Ayurveda' meaning 'the knowledge of life'.
Yoga & Naturopathy	The word 'Yoga' comes from the Sanskrit word 'yuj' which means 'to unite or integrate'. Yoga is about the union of a person's own consciousness and the universal consciousness. Naturopathy is a cost effective drugless, non-invasive therapy involving the use of natural materials for health care and healthy living.
Unani	Unani System of medicine is a comprehensive medical system, which provides preventive, promotive, curative and rehabilitative health care.
Siddha	The word 'Siddha' is derived from the root word "Citti" meaning attainment of perfection, eternal bliss and accomplishment.
Sowa Rigpa	Sowa-Rigpa" is the traditional medicine of many parts of the Himalayan region used mainly by the Tribal and bhot people. Sowa-Rigpa (Bodh-Kyi) means 'science of healing' and the practitioners of this medicine are known as Amchi.
Homeopathy	'Homoeopathy' was introduced as a scientific system of drug therapeutics by a German Physician, Dr. Christian Frederick Samuel Hahnemann in 1805. The principle of Homoeopathy is Similia Similibus Curentur i.e. let likes be treated by likes.

1st WHO Global Summit on Traditional Medicine

- India hosted the 1st WHO Global Summit on Traditional Medicine in 2023 in Gandhinagar, Gujarat.
- It adopted the Gujarat Declaration, which; Reaffirmed global commitment to evidence-based traditional, complementary and integrative medicine (TCIM),
  - Called for improved data and regulatory frameworks, and
  - Acknowledged India's leadership in shaping a holistic, culturally rooted and scientifically aligned global health agenda.

ASPIRE SCHEME

The Ministry of Micro, Small and Medium Enterprises (MSME) is implementing the ASPIRE scheme to promote entrepreneurship and livelihood opportunities in rural areas.

About

- **Launch:** In 2015 by the Ministry of Micro, Small and Medium Enterprises.
- **Aim:** To create an enabling ecosystem for job creation through skill development, incubation and support to micro-enterprises.
  - As of now, 109 Livelihood Business Incubators (LBIs) have been approved across the country.
- **Key Components:**
  - **Livelihood Business Incubators (LBIs):** Support agro-based ventures with grants up to ₹75 lakh (private) or ₹1 crore (government institutions) for training in food processing, handicrafts, and rural trades.
  - **Technology Business Incubators (TBIs):** Focus on tech-driven rural innovation with similar funding.
  - **Fund of Funds:** Managed by SIDBI with ₹200 crore corpus to back startups in agro-rural sectors.

Do You Know?

- **Vendor Development Programmes** for SC/ST and women entrepreneurs are being organised under the Public Procurement Policy for MSMEs.
- The **'Yashasvini Campaign'** was launched in June 2024 to empower women entrepreneurs through awareness on formalisation, access to credit, capacity building and mentorship.
- The ministry is also implementing the **Prime Minister's Employment Generation Programme (PMEGP)**, a credit-linked subsidy scheme to generate self-employment opportunities through micro-enterprises.

APPOINTMENT TO CHIEF INFORMATION COMMISSIONER

The President of India administered the oath of office to Raj Kumar Goyal as the Chief Information Commissioner of the Central Information Commission.

About

- The Central Information Commission (CIC) is a statutory body in India, established under the provisions of the Right to Information Act (2005).
- The Central Information Commission consists of a Chief Information Commissioner (CIC) and not more than ten Information Commissioners (IC).
- The members are **appointed by the President** on the recommendation of a Committee consisting of:
  - The Prime Minister as the Chairperson,
  - The Leader of Opposition in the Lok Sabha, and
  - A Union Cabinet Minister nominated by the Prime Minister.
- **Term of office:** The Chief Information Commissioner, or Information Commissioners, as the case may be, shall hold office for a period of **three years** from the date on which he enters upon his office.
- **Jurisdiction:** It extends over all Central Public Authorities.

Eligibility Criteria

- **Section 12(5) of the RTI Act 2005** provides that the CIC and IC shall be
  - **Persons of eminence** in public life with wide knowledge and experience in law, science and technology, social service, management, journalism, mass media or administration and governance.
  - **Shall not be a Member of Parliament or Member of the Legislature** of any State or Union Territory as the case may be , or hold any other office of profit or connected with any political party or carrying on any business or pursuing any profession.

Powers and Functions

- While inquiring, the Commission has the **powers of a civil court** in respect of the following matters:
  - **Summoning** and enforcing attendance of persons and compelling them to give oral or written evidence on oath and to produce documents or things;
  - Requiring the discovery and inspection of documents;
  - **Receiving evidence** on affidavit;
  - **Requisitioning** any public record from any court or office;
  - Issuing summons for examination of witnesses or documents; and
  - Any other matter which may be prescribed.
- During the inquiry of a complaint, the Commission may **examine any record which is under the control of the public authority** and no such record may be withheld from it on any grounds.
- The decisions of the Commission are **final and binding.**

Significance

- The appointment process is designed to ensure independence and credibility of the CIC, which is crucial for enforcing the Right to Information and enhancing transparency and accountability in governance.
- Independent selection by a multi-member committee helps reduce political bias and maintain the institutional autonomy of the CIC.
- By enforcing disclosure norms, the Commission curtails arbitrariness in administration, enhances accountability of public officials and promotes ethical governance.
- The Commission ensures transparency while respecting national security, privacy and commercial confidence under Section 8 of the RTI Act.

2 INTERNATIONAL RELATIONS

BIOLOGICAL WEAPONS CONVENTION (BWC)

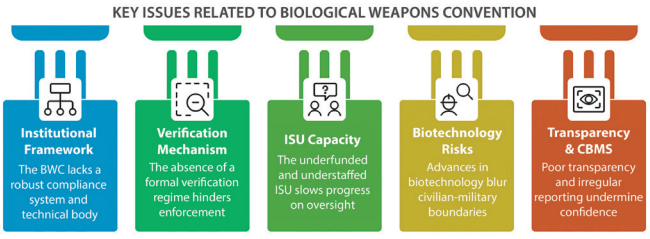
Recently, India's External Affairs Minister, at a conference marking 50 Years of Biological Weapons Convention (BWC), has cautioned that the world remains 'not yet adequately prepared' to tackle the threat of 'Bioterrorism', highlighting serious institutional and structural gaps.

About

- It refers to the **deliberate release of biological agents** — such as ***bacteria, viruses, or toxins*** — to cause illness or death among humans, animals, or plants.
- According to the **National Disaster Management Authority (NDMA)**, bioterrorism is classified as a **biological disaster**, distinct from natural outbreaks because of its deliberate intent.
  - **Potential bioterror agents** include pathogens such as *Bacillus anthracis* (anthrax), *Variola major* (smallpox), and toxins like **botulinum.**
- The **threat of bioterrorism** has grown with advances in biotechnology and synthetic biology, which, while offering enormous benefits, pose risks of misuse.
- The **Biological Weapons Convention (BWC)** serves as the **key international treaty** prohibiting the development, production, and possession of biological weapons.

Biological Weapons Convention (BWC)

- BWC was established and entered into force on March 26, 1975, becoming the first multilateral disarmament treaty to ban an entire category of weapons of mass destruction.
  - It prohibits the development, production, acquisition, transfer, stockpiling, and use of biological and toxin weapons.
- The United Nations Office for Disarmament Affairs (UNODA) acts as the treaty's depositary and administrative support body.
- **Membership:** Total 189 states, **including India,** with several others as signatories.
- **Review Conferences** held every five years to assess implementation and address emerging biosecurity threats.



INDIAN STATISTICAL INSTITUTE

Academicians held demonstrations in Kolkata to protest a Central government plan to repeal the Indian Statistical Institute (ISI) Act, 1959.

About

- The Indian Statistical Institute was founded by Professor P.C. Mahalanobis in Kolkata on 17th December, 1931.
- The institute gained the status of an Institution of National Importance by an act of the Indian Parliament in 1959.
- It is headquartered in Kolkata with centres in Delhi, Bangalore, Chennai, and Tezpur.
  - The institute offers courses including those in statistics and math, and has several research divisions.
- **Its highest decision-making body is the 33-member council** — including an elected chairman, six representatives of the Centre, scientists not employed at the institute, a representative of the University Grants Commission, and ex-officio members including the director and heads of academic divisions and centres.
- Some of India's leading **statisticians, mathematicians, and economists** have been on its faculty, and its training programs enjoy worldwide repute.

THAILAND-CAMBODIA CONFLICT

Recently, Thailand launched airstrikes on Cambodian military targets.

About

- The conflict centers on a long-standing territorial dispute dating back to colonial-era border demarcations made by France in 1907.

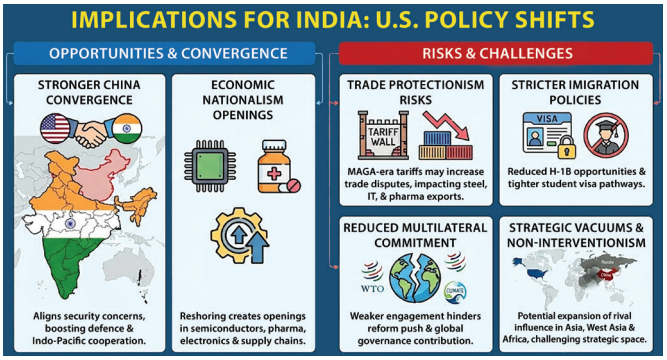
- At the heart of the dispute is the Preah Vihear temple, a culturally significant 11th–12th century Khmer shrine claimed by both countries.
- Though the International Court of Justice affirmed Cambodian sovereignty in 1962 and again in 2013, Thailand has rejected the rulings, and the area remains heavily militarized.

US NATIONAL SECURITY STRATEGY, 2025

The US has released the National Security Strategy (NSS) 2025, marking a decisive departure from post-Cold War American foreign policy frameworks to the "Make America Great Again (MAGA)" agenda at the heart of U.S. global strategy.

How does MAGA shape the new NSS?

- **Focused national interest:** Only issues directly affecting core US security and prosperity are treated as strategic; the document explicitly criticises earlier "global domination" ambitions.
- **Regional Priorities:**
  - It puts the Western Hemisphere at the top, announcing a "Trump Corollary" to the **Monroe Doctrine** to re-assert US pre-eminence in the Americas, curb Chinese and other extra-regional influence.
  - The **Monroe Doctrine** was a foreign policy principle declared by US President James Monroe in 1823, asserting that the Western Hemisphere was closed to future European colonization, the US would oppose any European intervention in independent American states.
- **Primacy of nations and sovereignty:** It asserts the nation-state as the fundamental unit, defends US sovereignty against international institutions and "transnationalism", and encourages all states to put their own interests first.
- **Predisposition to non-interventionism:** It sets a high bar for interventions abroad, criticising "forever wars", while still insisting the US maintain overwhelming military strength ("peace through strength").
- **Economic nationalism:** It elevates reindustrialisation, reshoring, tariffs, balanced trade, and "energy dominance" (including rejection of Net Zero/climate agendas) to central security objectives, aligning directly with MAGA economic themes.
- **End of mass migration:** It declares that "the era of mass migration is over", treats border security as the primary element of national security, and links migration, drugs, and crime as core threats—again mirroring MAGA domestic politics in the external strategy.
- **Stronger China Convergence:** The 2025 US National Security Strategy explicitly positions China as America's primary strategic challenge, representing a sharpened focus on containment and competition in the Indo-Pacific.

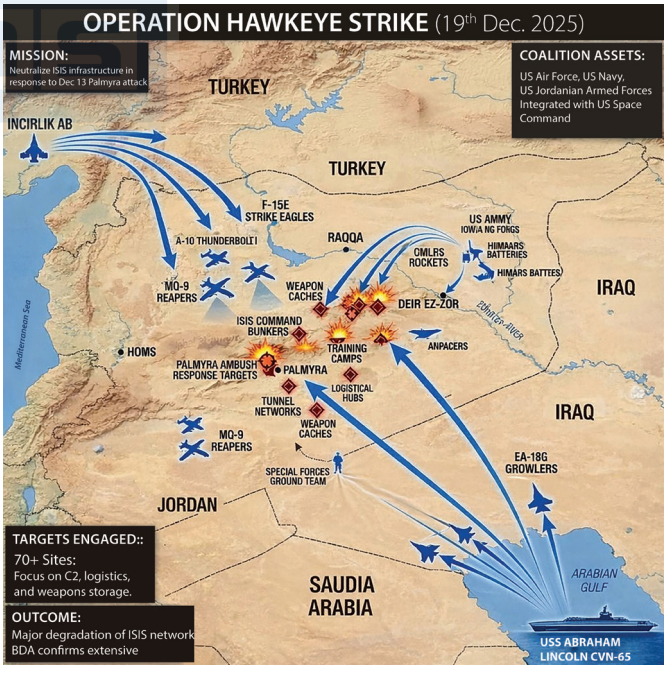


OPERATION HAWKEYE STRIKE

The United States has launched Operation Hawkeye Strike in Syria to destroy ISIS fighters and weapon sites.

Background: Rise of ISIS and Syrian Conflict

- The Syrian Civil War, which began in 2011, created instability that allowed the Islamic State of Iraq and Syria (ISIS) to rise. By 2014, ISIS had captured large territories across Iraq and Syria and declared an Islamic "Caliphate."
- Although the U.S.-led coalition defeated ISIS territorially by 2019, the group continues to operate through sleeper cells in desert regions and remains active in spreading extremist ideology globally.



About Operation Hawkeye Strike

- In early 2025, the U.S. military launched Operation Hawkeye Strike after an ISIS-linked suicide attack targeted a U.S.–Syrian convoy near Palmyra in central Syria.

- The operation aims to identify and eliminate ISIS fighters, weapon depots, and funding networks. It supports the broader Operation Inherent Resolve (2014), an international coalition effort to combat ISIS in Iraq and Syria.
- The U.S. is coordinating with the Syrian Democratic Forces (SDF) — a Kurdish-led militia that played a crucial role in previous anti-ISIS campaigns.

Global and Indian Implications

- Globally, the operation demonstrates Washington's continued commitment to counterterrorism and Middle East stability, despite its strategic focus on the Indo-Pacific. It aims to prevent an ISIS resurgence that could destabilize West Asia.
- **For India, the operation carries several implications:**
  - A stable Middle East ensures the safety of over 8 million Indian workers and secures critical oil supplies from the Gulf region.
  - Suppressing ISIS limits the spread of online radicalization, which had previously influenced a small number of Indian youth.
  - It enhances India–U.S. counterterrorism cooperation, including intelligence sharing under the Global Coalition Against ISIS framework.

Do You Know?

ISIS is banned in India under the Unlawful Activities (Prevention) Act, 1967.

INDIA–NEW ZEALAND FTA

India and New Zealand have signed a Free Trade Agreement to boost trade, investment, and cooperation.

About

- A Free Trade Agreement (FTA) is a deal between countries that makes trade easier by reducing or removing import taxes (tariffs) and other trade barriers.
- It also promotes investment, services, technology exchange, and protects Intellectual Property Rights (IPRs).
- In simple terms, FTAs make it cheaper and faster for businesses to sell goods and services between partner countries.

Key Highlights of the India–New Zealand FTA

- **Zero Tax on Indian Exports:** India can now export 100% of its goods to New Zealand without paying customs duties.
- **Balanced Protection:** India has opened up 70% of its market, while keeping 30% (mainly dairy and farm goods) protected to safeguard Indian farmers.
- **Investment Boost:** New Zealand will invest USD 20 billion in India over 15 years in renewable energy, technology, and infrastructure.
- **AYUSH and Wellness:** Cooperation in traditional medicine, tourism, and cultural exchange will help India emerge as a global wellness hub.
- **Support for MSMEs:** New business linkages will help small Indian companies access global markets.
- **Student and Work Benefits:** Indian students in New Zealand can work 20 hours per week and enjoy longer post-study work visas — up to 4 years for PhD students.
- **Skilled Professionals:** 5,000 Indian professionals will get work opportunities in New Zealand for up to 3 years.
- **Working Holiday Visa:** 1,000 young Indians can travel and work in New Zealand for 12 months.

Why it Matters for India

- **Boosts Exports and Jobs:** Indian products like textiles, medicines, and IT services will gain better access to New Zealand's market, creating employment in India.
- **Protects Agriculture:** Sensitive sectors like dairy, sugar, and edible oils are excluded to protect Indian farmers.
- **Cultural Diplomacy:** Collaboration with New Zealand's *Māori* community strengthens cultural ties and boosts India's soft power.
- **Horticulture Growth:** Joint projects on kiwifruit, apples, and honey will enhance productivity and quality in India's horticulture sector.

Big Picture

- This FTA fits into India's broader trade strategy. In the last five years, India has signed six major FTAs — with the UAE, Australia, Oman, UK, EFTA, and Mauritius — reinforcing its position as a global trade hub.
- The India–New Zealand FTA expands India's economic influence in the Oceania region and supports its Act East Policy, promoting growth, sustainability, and regional cooperation.

CHINA OVERTAKES OPEC+

In 2025, China replaced OPEC+ as the world's biggest influence on global oil prices.

What Happened

- In 2025, China became the main country controlling global oil prices, overtaking the traditional role of OPEC+, a group of major oil-producing nations.
- China is the largest importer of crude oil in the world, buying millions of barrels every day to power its industries and transport sector.
- China used a smart buying strategy — it bought more oil when prices fell and cut back when prices rose.

- This approach worked like a natural price control system:
  - When prices dropped too much, China's extra buying pushed them up again.
  - When prices increased sharply, China's reduced buying brought them down.
- As a result, global oil prices stayed stable around $65 per barrel, even during times of war or supply disruption.
- This shows that China's demand power now rivals OPEC+'s control over supply.

OPEC and OPEC+

- **OPEC (Organization of the Petroleum Exporting Countries)** was founded in 1960 by Saudi Arabia, Iran, Venezuela, Kuwait, and Iraq.
- It now has **12 member** countries that coordinate oil production to keep prices fair and steady.
- **Headquarters**: Vienna, Austria.
- OPEC+ is a wider alliance formed in 2016, adding 10 more countries like Russia, Oman, and Mexico to OPEC's core members.
- They cooperate to adjust oil supply when prices fluctuate too much.

Why it Matters

- China's actions show a big shift — power over global oil prices is moving from sellers (OPEC+) to buyers (China).
- This gives China greater geopolitical and economic influence and affects how countries like India plan their energy security and trade policies.

INDIA'S GAIN FROM RCEP WITHOUT RISKING CHINA

India has gained the benefits of RCEP trade integration without joining it or empowering China.

What is RCEP

- The Regional Comprehensive Economic Partnership (RCEP) is the world's largest trade bloc, covering about 30% of global GDP and population.
- It includes 10 ASEAN nations—Thailand, Indonesia, Vietnam, Malaysia, etc.—and five major economies: Australia, China, Japan, South Korea, and New Zealand.
- The agreement seeks to promote free trade, investment, and supply chain integration across Asia.
- **India withdrew in 2019, citing major concerns:**
  - The risk of cheap Chinese imports harming local industries.
  - Insufficient protection for farmers and manufacturers.
  - Weak provisions for services, data, and digital trade.

India's "RCEP-minus-China" Strategy

- Instead of joining RCEP, India pursued bilateral Free Trade Agreements (FTAs) with individual RCEP members, giving it similar benefits without exposure to Chinese competition.
- Now, India has FTAs with 14 of the 15 RCEP countries, ensuring market access on its own terms.
- **Key agreements include:**
  - ASEAN–India Trade in Goods Agreement (AITIGA) (2010) – now being reviewed to reduce trade deficits.
  - India–Japan CEPA (2011) and India–South Korea CEPA (2010) – strengthening manufacturing and technology ties.
  - India–Australia ECTA (2022) and India–New Zealand FTA (2025) – expanding exports and services.

Strategic and Economic Gains

- India avoids Chinese market dominance, supports the China+1 supply chain diversification strategy, and boosts domestic manufacturing through the Production Linked Incentive (PLI) scheme.
- Partnerships like the Supply Chain Resilience Initiative (SCRI) with Japan and Australia reduce dependency on China.
- Limited engagement through the Asia-Pacific Trade Agreement (APTA) allows controlled trade with China.

Conclusion

- India's approach reflects strategic pragmatism—balancing economic openness with sovereignty.
- It gains from Asian trade integration while protecting its industries, ensuring both economic growth and geopolitical stability.

PM VISIT TO JORDAN

Prime Minister Narendra Modi concluded his two-day visit to Jordan.

About

- The visit marks India's first full bilateral engagement with Jordan and comes as the two countries prepare to celebrate 75 years of diplomatic relations.
- **MoU'S:** Five memoranda of understanding were finalized covering culture, renewable energy, water management, digital public infrastructure and a twinning arrangement between the historic sites of Petra and Ellora.
- India is Jordan's third-largest trading partner, Prime Minister Modi proposed enhancing bilateral trade to $5 billion over the next five years.
  - He also encouraged collaboration between Jordan's digital payment system and India's Unified Payments Interface.

- In the financial year 2023–24, total India-Jordan trade reached US$ 2.875 billion, with India's exports to Jordan amounting to US$ 1,465 billion.

- Jordan is a leading supplier of phosphates and potash fertilizers for India. Both sides also discussed **investments in fertilizer production** to meet India's growing demand, with Jordan being an important supplier of phosphates to India.

Strategic Significance

- **Long-term partnership:** The visit reconfirms India's growing engagement in *West Asia* beyond traditional partners, recognizing Jordan's **strategic location and role in regional stability.**
- **Economic & security cooperation:** Agreements on energy, water, technology, and culture diversify the bilateral agenda beyond trade.
- **Commemorative milestone:** The 75th anniversary context adds a **historical and diplomatic significance** to the visit, setting the stage for deeper ties in the coming decade.

Jordan

- West Asian country in the **Middle East.**
- **Borders:** Israel & Palestine (West), Saudi Arabia (South & East), Iraq (East), Syria (North).
  - **Dead Sea** is a landlocked salt lake between Israel and Jordan in southwestern Asia.
- **Landlocked** except for a short coastline at Aqaba (Red Sea).
- **Head of State:** King Abdullah II (since 1999).
- **The main ethnic groups in Jordan** are Arabs, primarily Jordanians and Palestinians.

UN ALLIANCE OF CIVILIZATIONS (UNAOC)

The United Nations Alliance of Civilizations (UNAOC) has completed two decades of efforts aimed at bridging divides, reducing polarization, and promoting intercultural dialogue.

About UNAOC

- **Secretariat:** New York
- **Launched:** 2005
- **Initiated by:** Republic of Türkiye & Spain, under the auspices of the United Nations.
- **Objectives:** Improve cross-cultural and inter-religious relations between nations and communities.
  - Counter polarisation, extremism, xenophobia and hate speech.
  - Promote mutual understanding, inclusion, and peaceful coexistence.

Membership & Structure

- **Voluntary participation** by UN member states and organisations.
- **Guided by:**
  - High Representative for UNAOC
  - **Group of Friends** (over 150 countries & international organisations)

Relevance for India

- Aligns with India's civilisational ethos of pluralism and **"Vasudhaiva Kutumbakam".**
- Supports India's engagement with interfaith harmony, south–South cooperation & multilateral peace initiatives.

PM MODI RECEIVED ETHIOPIA'S HIGHEST CIVILIAN HONOUR

PM Modi was conferred with Ethiopia's highest award, 'The Great Honour Nishan of Ethiopia', by his Ethiopian counterpart Abiy Ahmed Ali.

Significance

- **First Global Leader:** PM Modi became the first Head of State or Government to receive this prestigious honour from Ethiopia.
- **Strategic Partnership:** During the visit, India and Ethiopia decided to elevate bilateral relations to a Strategic Partnership, focusing on cooperation in food security, health, technology, defence, capacity building, and digital public infrastructure.

About Ethiopia

- **Location:** Ethiopia is a landlocked country located in the Horn of Africa.
  - It shares borders with Eritrea, Djibouti, Somalia, Kenya, South Sudan, and Sudan.
- **Geography:** The country has diverse topography, including the Ethiopian Highlands, the Great Rift Valley, and the Danakil Depression (one of the hottest places on Earth).
  - The Blue Nile originates from Lake Tana in Ethiopia.
- **Demography:** Ethiopia is the second-most populous country in Africa.
- **Cultural Significance:** Ethiopia has its **own calendar,** which is seven years and around three months behind the Gregorian calendar.
  - Ethiopia is widely recognised as the birthplace of coffee.
- **Archaeological Importance:** It is the Cradle of Humankind, with some of the oldest hominid fossils discovered here.
  - **"Lucy" (Dinkinesh)**, a 3.2-million-year-old hominid fossil, was found in Ethiopia.
  - **"Ardi"**, a 4.4-million-year-old early hominid skeleton, was also discovered in the country.

3 ECONOMY

SEBI'S GUIDELINES ON FINFLUENCERS

To ensure transparency and investor safety, the Securities and Exchange Board of India (SEBI) has issued clear directives.

Mandatory Registration

- Anyone providing investment advice or research analysis must register under the SEBI (Investment Advisers) Regulations, 2013 or the SEBI (Research Analysts) Regulations, 2014.
- Unregistered finfluencers offering paid recommendations are now considered in violation of securities law.

Ban on Misleading Promotions:

- **Finfluencers cannot:**
  - Promise guaranteed returns or fixed profits.
  - Display fake profit screenshots or "success stories" without disclosure.
  - Encourage speculative or high-risk trading among retail investors.
- **No Partnerships with Regulated Entities:** Brokers, mutual fund houses, and investment platforms are barred from engaging or paying unregistered finfluencers for endorsements or lead generation.
- **Disclosure and Accountability:** Registered financial influencers must clearly disclose their affiliations, sponsorships, and risks associated with any product promoted.
- Conceptually, these measures place ethical and legal responsibility on both influencers and regulated market participants, ensuring that financial advice remains professional, transparent, and investor-centric.

SEBI

- **Establishment:** Formed in 1992 under the Securities and Exchange Board of India Act, 1992.
- **Objective:** To regulate India's securities market, ensure investor protection, and maintain market integrity.
- **Powers:** SEBI can register intermediaries, issue guidelines, conduct investigations, and penalize violations under its quasi-judicial authority.

REGULATING FINFLUENCERS

SEBI has initiated action against unregistered financial influencers (finfluencers) for providing unverified investment advice online.

Background

- With over 800 million internet users and the growth of digital investment platforms, India has seen a surge in financial influencers, commonly known as finfluencers.
- These individuals — often active on YouTube, Instagram, and Telegram — create content on stock trading, mutual funds, and personal finance.
- While some provide educational information, others cross the regulatory line by giving unverified investment advice, manipulating retail investor sentiment, or promoting risky products for commissions.
- According to SEBI's internal assessment, a significant proportion of retail investors rely on such online recommendations, creating potential for mis-selling, misinformation, and market manipulation.

OPEN MARKET OPERATIONS

RBI announced ₹1,00,000 crore in Open Market Operations to inject durable liquidity into the economy.

Background

- **Liquidity** — the ease with which money flows through the financial system — is vital for credit growth and economic stability.
- In times of tight liquidity, banks face higher borrowing costs, which can slow down investment and consumption.
- To prevent such situations, the Reserve Bank of India (RBI) uses Open Market Operations (OMOs) to either inject or absorb liquidity, thereby maintaining monetary balance and ensuring financial stability.
- The latest OMO announcement comes amid volatile global markets, uneven capital flows, and pressure on government bond yields — signaling RBI's proactive stance to maintain stable liquidity conditions.

What are Open Market Operations (OMO)

- **Definition:** Open Market Operations (OMO) are monetary policy tools through which the RBI buys or sells government securities (G-Secs) in the open market to regulate the liquidity available with banks.
- **Mechanism:**
  - **OMO Purchase:** RBI buys government securities from banks → injects liquidity into the system (expansionary policy).
  - **OMO Sale:** RBI sells government securities → absorbs liquidity from banks (contractionary policy).

Objective:

- To ensure adequate money supply, maintain interest rate stability, and align short-term liquidity with the RBI's monetary policy stance.

Concept Clarification

- **Government Securities (G-Secs):** Bonds issued by the central or state governments to borrow money.
- **Liquidity:** The availability of cash or easily convertible assets in the banking system.

Significance of OMOs in Monetary Policy

- **Liquidity Management:** Keeps money supply consistent with credit demand.
- **Inflation Control:** Absorbs excess liquidity to prevent overheating of the economy.
- **Yield Stabilisation:** Prevents sharp volatility in government bond yields.
- **Support to Growth:** Liquidity injections during downturns support lending and investment.

Recent RBI Move: OMO and USD/INR Swap

- The RBI's announcement of ₹1,00,000 crore OMO purchases aims to inject durable liquidity into the system — meaning liquidity that stays longer in the banking sector, unlike short-term repo injections.
- Additionally, a $5 billion USD/INR buy-sell swap was introduced to manage foreign exchange liquidity, balancing both domestic and external monetary conditions. This combined strategy ensures that domestic credit remains stable, while rupee volatility is kept in check amid global uncertainty.

Operation Twist: A Special Type of OMO

- **Definition:** Operation Twist is a monetary policy strategy involving the simultaneous buying and selling of government securities of different maturities to influence interest rates across the yield curve.
- **Objective:** To lower long-term interest rates (encouraging investment and borrowing) while keeping short-term rates stable to control inflation.

How it Works:

- The central bank buys long-term bonds → their yields fall.
- It sells short-term bonds → their yields rise.
- This ***"twist"*** in the yield curve helps lower long-term borrowing costs without injecting excess liquidity.
- **In India:** RBI used Operation Twist in 2019 and 2020 to manage yields on long-term government bonds and to stabilise the bond market during liquidity stress.
- **Origin:** The term originated from the US Federal Reserve's 1961 policy, which aimed to stimulate the American economy by reducing long-term borrowing costs and reviving investment.

SHYOK TUNNEL

The Defence Minister inaugurated the Shyok Tunnel in Ladakh, enhancing all-weather connectivity and military readiness near the Line of Actual Control (LAC).

About

- The Shyok Tunnel, **a 920-metre** cut-and-cover tunnel, is located in **eastern Ladakh,** one of the most challenging and high-altitude regions in the world.
- Constructed by the **Border Roads Organisation (BRO),** the tunnel provides all-weather connectivity to forward areas near the (LAC) — a region where India and China were engaged in a military standoff between 2020 and 2024.
- Before this project, movement was frequently disrupted by heavy snowfall, avalanches, and landslides, forcing reliance on costly air maintenance for logistics and supplies.
- With the tunnel now operational, troops, supplies, and civilians can move seamlessly throughout the year, strengthening both strategic security and regional development.

Border Roads Organisation (BRO)

- The BRO, established in 1960 under the Ministry of Defence, plays a crucial role in developing and maintaining road infrastructure in India's border areas.
- **Its twin objectives are to:**
  - Enhance defence preparedness by ensuring reliable logistics connectivity to remote frontiers.
  - Promote socio-economic integration by linking isolated villages and facilitating trade, tourism, and development.
- In recent years, the BRO has accelerated its infrastructure expansion — completing over 295 projects worth ₹8,000 crore in 2023–24, including bridges, tunnels, and highways across the Himalayas.
- Its work in Ladakh, Arunachal Pradesh, and Uttarakhand has been central to India's border infrastructure modernisation.
- **Broader Context:** India's Border Infrastructure Push
  - Over the last decade, the government has accelerated border infrastructure projects to match strategic needs and regional challenges.
  - The Border Roads Organisation (BRO) has completed 330 key projects since 2020, improving road, bridge, and tunnel connectivity in border states.
- **Other significant projects include:**
  - **Atal Tunnel (Rohtang, Himachal Pradesh):** World's longest highway tunnel above 10,000 feet.
  - **Sela Tunnel (Arunachal Pradesh):** Enhancing connectivity to Tawang near the LAC.
  - **Zojila Tunnel** (Jammu & Kashmir): Linking Srinagar with Leh for all-weather access.
- Together, these projects form the backbone of India's Strategic Border Infrastructure Plan.

INDIA'S 'GOLDILOCKS ECONOMY

RBI reduced the repo rate to 5.25%, citing India's entry into a rare "Goldilocks" economic phase.

Background

- Central banks across the world constantly struggle to find the right balance between economic growth and price stability.
- If growth accelerates too fast, it can cause overheating — high demand leads to inflation.
- If growth slows too much, it risks recession and unemployment.
- A Goldilocks economy represents that delicate middle ground where both stability and expansion coexist — "not too hot, not too cold."

Additional Information

The term comes from the *"Goldilocks and the Three Bears"* fairy tale, where Goldilocks preferred porridge that was *"just right."* Economically, it describes a state of sustainable growth, low inflation, and low unemployment — an ideal for policymakers.

Why the RBI Calls It a 'Goldilocks Phase' for India

- **Controlled Inflation:**
  - Retail inflation has fallen below 4%, resting near the lower end of the RBI's 2–6% target band.
  - Decline in food and fuel prices, along with prudent monetary tightening in previous quarters, has anchored inflation expectations.
- **Strong Economic Growth:** India's real GDP growth remains around 8%, one of the highest among major economies.
  - This resilience persists despite external headwinds — including sluggish global trade, tariff escalations, and currency volatility.
- **Macro Stability:** Fiscal deficit and current account deficit remain under control.
  - Rupee volatility has eased, and foreign exchange reserves have crossed $650 billion, reflecting external strength.
- **Monetary Support for Growth:**
  - By trimming the repo rate to 5.25%, the RBI has shifted to a "neutral-to-accommodative" stance — easing borrowing costs to encourage investment while maintaining price discipline.

LARGE EXPOSURES FRAMEWORK

RBI tightened Large Exposures Framework (LEF) norms for foreign banks to limit risky concentrated lending.

Background

- Banks often lend large sums to big corporations or business groups.
- While such loans can be profitable, they create a serious "concentration risk" — if one large borrower defaults, it can endanger the stability of the entire bank and, by extension, the financial system.
- Past financial crises, both global (2008) and domestic (IL&FS, DHFL), have shown that excessive exposure to a few borrowers can trigger systemic contagion.
- To prevent such risks, the Reserve Bank of India (RBI) introduced the Large Exposures Framework (LEF) — a globally aligned system to ensure prudent credit concentration.

What is Exposures Framework (LEF)

- The LEF is an RBI regulatory mechanism designed to limit the maximum exposure a bank can have to a single borrower or a group of connected borrowers.

Key Objective:

- To ensure diversification of bank lending, preventing any single default from jeopardizing the bank's solvency.

Key Features of the LEF

- **Exposure Limit for a Single Borrower:**
  - A bank's lending or credit exposure to any one borrower must not exceed 20% of its Tier-1 capital (the bank's core capital that absorbs losses).
  - In exceptional cases, the limit can be extended by 5%, reaching a maximum of 25%.
- **Exposure Limit for a Group of Connected Borrowers:**
  - Exposure to connected counterparties (entities under common control or economic dependence) cannot exceed 25% of the bank's Tier-1 capital.

Connected Counterparties

These are entities that are financially interlinked — for instance, subsidiaries of the same parent company.If one fails, others may also default, creating a "domino effect."

Types of Exposure Covered:

- Loans and advances
- Investments in debt securities
- Credit derivatives and off-balance sheet exposures (like guarantees and letters of credit)

Applicability:

- The framework applies to all scheduled commercial banks, including foreign banks operating in India.

RBI's Recent Changes for Foreign Banks

- The RBI has now tightened LEF compliance for foreign banks operating in India by mandating that:
  - Their exposures to their own head office, overseas branches, or related entities abroad must be strictly capped.

- All such cross-border exposures will be counted under the LEF limits, preventing risk transfer outside India's jurisdiction.

➲ **Rationale:** This ensures that Indian operations of foreign banks do not face excessive risk from decisions or defaults in their parent or overseas entities — a concern that became evident during global banking stress episodes like the Credit Suisse collapse (2023).

Significance of LEF

➲ **Promotes Financial Stability:** By limiting risk concentration, LEF safeguards the banking system from large-scale defaults.

➲ **Improves Risk Governance:** Encourages banks to strengthen internal credit assessment and diversify their portfolios.

➲ **Enhances Global Confidence:** Aligns India's banking norms with Basel Committee on Banking Supervision (BCBS) standards.

➲ **Protects Depositors:** Reduces chances of systemic collapse, ensuring deposit safety.

WORLD INEQUALITY REPORT 2026

The 3rd edition of the World Inequality Report published by World Inequality Lab, coordinated with the Paris School of Economics and contributors from 200+ researchers.

Definition of Inequality

➲ World Inequality Report defines inequality primarily through the unequal distribution of **income and wealth**, focusing on how economic resources (labor/capital income, assets, debt) are shared across populations, but also addresses interconnected **economic, gender, and carbon inequalities,** seeing them as shaped by policy and institutions, not inevitable.

Key Findings of Report

➲ **Global Inequality Trends (Wealth Concentration):** The top 10% globally own 75% of all wealth;

- Global bottom 50% hold just 2%.
- The top 1% control 37% of global wealth, 18 times more than the bottom half of the world combined.

➲ **Wage inequality indicator:** Top income shares growing faster than bottom half.

➲ **Gender Inequality:** Women earn only 61% of men's income per working hour (excluding unpaid work).

➲ **Regionwise Inequality:** Middle East & North Africa (16%); South & Southeast Asia (20%); Sub-Saharan Africa (28%); East Asia (34%); Europe/North America/Oceania (around 40%).

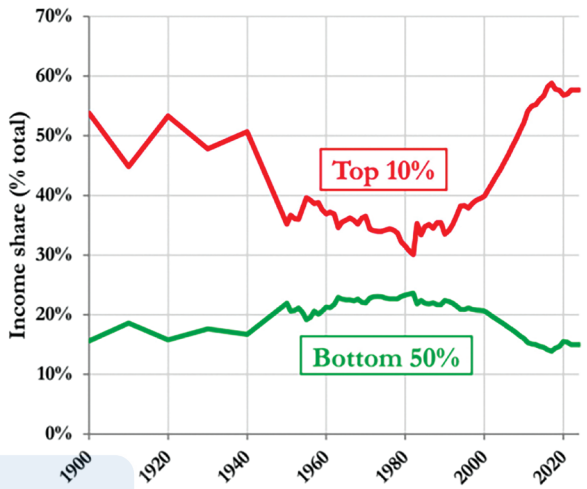
➲ **Climate Inequality:** The poorest 50% of the global population account for only 3% of carbon emissions tied to private capital.

➲ **Income Inequality in India:** The top 10% in India earn 58% of the national income, while bottom 50% receive only 15%. Women earn just 18% of total labor income in India, below the global average of 34%.

➲ **Wealth Concentration in India:** The richest 10% own 65% of total wealth.

- The top 1% hold 40%.
- The bottom 50% own less than 6%.

Top 10% and Bottom 50% Income Shares in India, 1900-2024



Interpretation: The Top 10% income share is equal to 58% in 2024. Income is measured after the operation of pensions and unemployment insurance systems and before income tax.

Reasons Highlighted for Inequality

➲ **Changing Global Economic Geography (1980 to 2025):** In 1980, the global elite was concentrated in North America, Europe, and Oceania, while India, China, and Sub-Saharan Africa were largely confined to the bottom 50%.

➲ **Policy Failures:** Ultra-rich often pay lower effective tax rates than middle-income households.

Key Suggestions in Report

➲ **Progressive taxation:** Global minimum tax on multi-millionaires & anti-evasion coordination.

➲ **Wealth & inheritance taxes:** To mobilize resources for public goods (education, health, climate).

➲ **Redistributive measures:** including cash transfers, pensions, and unemployment benefits to directly reduce inequality.

➲ **Social Investment:** Public investment in universal education, healthcare, childcare, and nutrition programs.

➲ **Gender & Labor Reforms:** Equal pay & labor rights to reduce gender gaps & expand formal employment.

➲ Inequality remains extreme, multi-dimensional, and persistent across regions and socio-economic groups.

ASIAN DEVELOPMENT BANK (ADB)

ADB has raised India's growth forecast for FY26 to 7.2%, from 6.5%.

About ADB

➲ Established in 1966 as a regional multilateral development bank.

- **Purpose:** Promote social and economic development in Asia and the Pacific.
- **Headquartered** in Manila, Philippines.
- **Membership:**
  - Total Members: 69
  - India joined ADB in 1966 as a founding member.
- **Major shareholders:** Japan and the United States (15.6% each), China (6.4%), India (6.3%), Australia (5.8%).
- **Voting Power:** Weighted based on capital subscriptions.
- **Leadership Pattern:** Historically, the President is from Japan due to large shareholding.

Recent ADB-India Financing

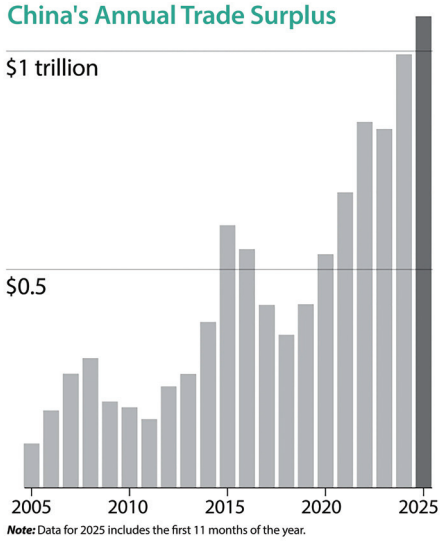
- **2025 Sovereign Lending:** ADB pledged USD 4.26 billion to India with focus on jobs, renewable energy transition and urban infrastructure.
- **Specific Project Loan (Rooftop Solar):** USD 650 million loan to support Pradhan Mantri Surya Ghar: Muft Bijli Yojana for rooftop solar adoption by 1 crore households by 2027.
- **Industrial Corridor Support:** Funding for corridor development (e.g., Visakhapatnam-Chennai Industrial Corridor).

CHINA'S $1 TRILLION TRADE SURPLUS

Recently, China's trade surplus surpassed $1 trillion underscoring China's dominance in global manufacturing and exports, reveals underlying economic vulnerabilities and global trade distortions.

Global Implications of China's $1 Trillion Trade Surplus

- **Global Trade Imbalances:**
  - **Rising asymmetry:** China surplus vs US/EU/Global South deficits
  - **Macroeconomic stress:** Current account pressures on deficit nations
  - Global demand imbalance



- **Risk:** Deflationary bias in global economy
- **Global Friction:** Trading partners accuse China of **dumping goods** and distorting markets.
- **Currency Wars:** China's managed currency depreciation(Yuan dynamics) to support exports.
- **Deflationary Pressures:** China's export-driven glut (EVs, steel, solar) depresses global industrial prices, raising risks of **'imported deflation'** in OECD economies.
- **Geoeconomic Repercussions:** China's surplus strengthens its **global liquidity dominance**, increased lending to Global South via Belt & Road and Yuan-denominated trade.
- **Asian Economies' Realignment:** ASEAN economies, Taiwan, and India benefit partially from supply chain shifts, but also face **price competition and dumping risks.**

Implications for India

- **Rising Trade Deficit and Manufacturing Pressure:** India's trade deficit with China reached **$95 billion in FY2025**, as imports of electronics, solar components, and APIs surged.
- **Investment and Supply Chain Realignment:** 'China+1' strategy, benefiting India, Vietnam, and Mexico.
- **Currency & Inflation Spillovers:** Yuan depreciation exerts deflationary pressure on global prices, including India's imports.
- **Strategic Dependencies:** India's critical sectors (pharma APIs, electronics, semiconductors, Solar PV modules) remain dependent on Chinese imports.

India's Strategic Responses

- **Trade Diversification:** FTAs with UAE, EU in progress, but need to prioritize ASEAN & Africa markets. India is pushing for supply chain diversification and self-reliance (Atmanirbhar Bharat) to reduce dependence on Chinese imports.
- **Manufacturing Incentives:** PLI in electronics, solar, semiconductors, and need to accelerate **value-chain localization.**
- **Geopolitical Leverage:** Need to use trade diplomacy to balance China's dominance, as India is an active partner in QUAD & IPEF.

Way Forward

India's response to China's trade surplus needs to twofold:

- **Short-term:**
  - Tighten quality controls, incentivize domestic production, and monitor dumping practices.
  - Compliance simplification to improve the **ease of doing business**
- **Long-term:**
  - Invest in R&D, skill development, and infrastructure to build globally competitive industries.
  - Reduce Logistics costs
  - Skilling in High-tech manufacturing
  - R&D support to reduce technology gap

INDIA'S NUCLEAR POWER GENERATION

India achieved its highest ever nuclear power generation at 56,681 million units (MUs) (equivalent to 56.681 TWh) in FY 2024-25.

Nuclear Power in India *(Data as per Department of Atomic Energy)*

- India's current installed nuclear power capacity = **~8.78 GW,** spread across **24 nuclear power reactors.**
- Nuclear generation contributed **about 3.1%** to the nation's total electricity output.
- Nuclear energy plants operated by **Nuclear Power Corporation of India Ltd** (NPCIL), a government-owned PSU responsible for commercial nuclear power generation.

Government Initiatives for Nuclear Expansion

- **Nuclear Energy Mission for Viksit Bharat:**
  - Announced in the 2025–26 Union Budget
  - Target to increase the country's nuclear power capacity (from the current **8.78 GW**) **to 100 GW by 2047.**
- **SHANTI Act 2025:** The Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act 2025 to replace the outdated Atomic Energy Act of 1962 and the Civil Liability for Nuclear Damage Act of 2010.
- **ASHVINI Joint Venture:** A partnership between **NPCIL** and **NTPC** to leverage the financial strength of power PSUs for executing new projects like the 4x700 MW Mahi-Banswara plant.
- **Fleet Mode Construction:** Ten indigenous 700 MW Pressurized Heavy Water Reactors (PHWRs) are being built in a "fleet mode" to standardize manufacturing and reduce project timelines.

Applications of Nuclear Technologies

- **Agriculture and Food Processing:**
  - **Sterile Insect Technique (SIT):** Used to control pest populations by releasing radiation-sterilized male insects, reducing chemical pesticide use.
  - **Isotope Hydrology:** Tracking groundwater recharge and measuring soil moisture to optimize irrigation management.
- **Healthcare and Medicine:**
  - **Radiopharmaceuticals:** Development of indigenous tracers like **Technetium-99m** for cardiac and bone scans and **Iodine-131** for thyroid disorders.
  - **Bhabhatron:** BARC's indigenous teletherapy machine for cancer treatment, providing a cost-effective alternative.
  - **Medical Sterilization:** Uses gamma radiation to sterilize single-use medical supplies like syringes and surgical gloves.
- **Hydrogen Co-generation:** Development of High-Temperature Gas-Cooled Reactors (HTGRs) specifically for producing **green hydrogen** on an industrial scale.
- **Desalination:** Nuclear desalination plants, such as the one at Kalpakkam, provide potable water in water-scarce coastal regions.
- **Advances in Strategic Sectors:**
  - **Nuclear Propulsion:** Powering India's fleet of nuclear-powered ballistic missile submarines (SSBNs) like the **Arihant-class.**
  - **Space Exploration:** Research into **Radioisotope Thermoelectric Generators (RTGs)** for long-duration deep-space missions where solar energy is insufficient.
  - **Sludge Hygienization:** Using radiation to treat sewage sludge, converting it into pathogen-free manure for agricultural use (Waste to Wealth).
- By promoting nuclear energy as a sustainable, scalable, and secure power source, the government aims to bolster energy security and meet the nation's long-term economic and environmental goals.

CORPORATE BOND MARKET REPORT

NITI Aayog has released the report titled "Deepening the Corporate Bond Market in India".

About the Report:

- **The report examines** the current state, challenges, and future roadmap for strengthening India's corporate bond market—a key financing avenue for corporations, infrastructure, MSMEs, and emerging sectors.

Major Highlights of the Report

- **Growth and Current Status:**
  - India's corporate bond market is 15–16% of GDP, improved but still below peers like South Korea(~79% of GDP), Malaysia(~54% of GDP) and China(~38% of GDP).
  - India accounts for ~3% of the global corporate bond market.
- **Strategic Importance:** A deep corporate bond market is indispensable for a $30 trillion economy by 2047, enabling mobilisation of long-term, low-cost capital for infrastructure, industry, climate action and emerging sectors.
- **The report forecasts** that India's corporate bond market has the potential to exceed ₹100–120 trillion by 2030.
- **Equity vs. Bond Market Imbalance:** India' s equity market is valued at USD 4.8 trillion(~7 times larger) while the bond market is valued at USD 642 billion.

Structural Limitations with Indian Bond Market

- **Issuer concentration:** Dominated by top-rated corporates; limited MSME participation.
- **Regulatory & Institutional Constraints:**
  - **Fragmented regulatory oversight** across SEBI, RBI, MCA and other bodies, causing compliance complexity.

- **Extensive disclosure norms** and procedural delays discourage issuance, especially for lower-rated issuers.

- **Market Participation Imbalance:**
  - **Retail participation is low (<2%)**, indicating a narrow investor base.
  - **Institutional constraints** (insurance/pension fund investment caps, rating mandates) limit broader engagement.
- **Liquidity Limitations:**
  - Secondary market liquidity is shallow, reducing price discovery efficiency and investor confidence.
  - Dominance of private placements over publicly traded bonds restricts transparency.
  - **Weak enablers:** Inefficient debt recovery, tax asymmetries, high transaction costs.
  - **Credit Enhancement & Risk Tools:** Limited availability of credit derivatives, bond insurance and securitisation products slows market sophistication and risk management.

Corporate Bond

- Corporate bonds are debt securities issued by private and public corporations.
- **Companies issue corporate** bonds to raise money for a variety of purposes, such as building a new plant, purchasing equipment, or growing the business.

Significance of Deep Corporate Bond Market

- **Diversification of Funding Sources:**
  - An alternative source of finance for corporations, moving away from a bank-centric system.
  - Reduces the concentration of credit risk within the banking sector.
- **Long-Term Infrastructure Financing:** Infrastructure projects (e.g., power, transport) require stable, long-tenure funding that banks often struggle to provide due to asset-liability mismatch concerns.
- **Economic Resilience and Stability:** Enhances a nation's resilience to volatile global capital flows (FPIs).
- **Efficient Price Discovery:** Bond yields, determined by market forces, reflect the creditworthiness of issuers and prevailing economic conditions.
- **Channeling Domestic Savings:** Into productive use for capital formation and economic growth, which is critical for India's "Viksit Bharat 2047" goals.
- **Support for MSMEs and Innovation:** Offer financing access to mid-sized and lower-rated firms, including MSMEs, which are crucial for inclusive growth.
- **Lowering Cost of Capital:** For well-rated corporates, more cost-effective and faster capital.

Reforms Undertaken in India

- **By SEBI:** SEBI has introduced **electronic trading** through the **Request for Quote (RFQ)** platform, facilitated retail access through online bond platforms.
- **By RBI:** The RBI has introduced tri-party repos and credit default swaps.
- **By the Government:** The Government has promoted Infrastructure Investment Trusts (InvITs), Real Estate Investment Trusts (REITs), and green finance initiatives to encourage long-term investment and deepen capital markets.

TRADE PROTECTIONISM

Mexico has imposed tariffs of up to 50% on imports from non-FTA partners, including India, effective from April 1, 2026.

What is Trade Protectionism?

- It refers to policy measures, such as tariffs, quotas, import licensing, local content rules, aimed at shielding domestic industries from foreign competition.

Drivers of the current wave of protectionism include

- Slowing global growth and supply-chain vulnerabilities.
- Strategic reshoring by major economies like the U.S. and EU.
- Geopolitical tensions and pressure to protect domestic jobs.
- Concerns over dumping, subsidies, and unfair trade practices.

Way Ahead for India:

- **Initiate Trade Negotiations:** Fast-track a comprehensive trade agreement with Mexico to secure duty-free access.
- **Targeted support for affected exporters**: Specially in automobiles, auto components, and engineering goods.
- **Enhance Export Resilience:** Promote quality upgrades, cost efficiency, and logistics improvements to absorb tariff shocks.
- **Explore local assembly or joint ventures in Mexico:** To bypass tariff barriers.

PAX SILICA INITIATIVE

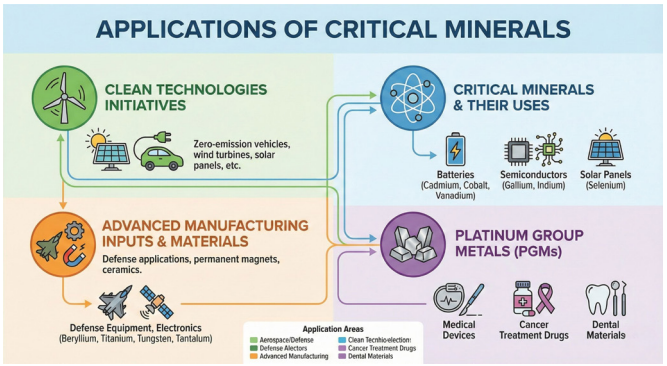
India has been excluded from the US-led Pax Silica initiative, a new US critical mineral diversification plan.

About Pax Silica

- Pax Silica is a US-led strategic initiative focused on securing global supply chains for semiconductors, artificial intelligence (AI), and critical minerals.
- It comes as a response to China's attempts to weaponize critical minerals and tech supply chains.
- **Members (Founding):** The United States, Japan, South Korea, Singapore, the Netherlands, the United Kingdom, Israel, the UAE, and Australia.

What are Critical Minerals?

- Critical minerals are elements that are the building blocks of essential modern-day technologies, and are at risk of supply chain disruptions.
  - Vital to India's **Net Zero 2070** goals and the **Viksit Bharat 2047** vision.



Major Challenges

- **Geographical Concentration:** China controls over 60% of global production and 80% of refining for many critical minerals, posing a "chokepoint" risk.
- **Processing Gap:** India lacks the technology for high-purity refining. Even if raw ore is mined domestically, it often must be sent abroad for processing.
- **Environmental Concerns:** Mining critical minerals is water-intensive and can lead to significant ecological degradation, often sparking local protests (e.g., in J&K).

India's Policy Framework

- **List of 30 Critical Minerals:** In 2023, the Ministry of Mines identified 30 minerals (e.g., Antimony, Beryllium, Lithium, Niobium) as critical for India.
- **MMDR Amendment Act, 2023:** Empowered the Central Govt to auction mining leases for 24 critical minerals, removing them from the "atomic minerals" list to allow private sector participation.
- **National Critical Mineral Mission (2025):** Launched in the 2025–26 Budget, it focuses on domestic production, recycling, and overseas acquisition.
- **Critical Mineral Blocks Auction:** Since late 2023, India has conducted multiple tranches of auctions for lithium and graphite blocks in J&K, Chhattisgarh, and Karnataka.

COALSETU POLICY

The Union Cabinet has approved the CoalSETU Policy(Policy for Auction of Coal Linkage for Seamless, Efficient & Transparent Utilisation).

About

- It introduces a new system for coal linkage auctions aimed at improving transparency, efficiency, and flexibility in coal allocation for industrial use.
- It creates a new auction window under the existing Non-Regulated Sector (NRS) Linkage Auction Policy of 2016.
- **Eligibility and Scope:** Open to any domestic coal buyer (excluding traders); coking coal excluded; removes prior end-use restrictions for flexibility.
- **Usage Restrictions:** Coal for own consumption, export (up to 50% of quantity), coal washing, or other permitted purposes; domestic resale prohibited.

Significance of CoalSETU Policy

- Enhances transparency, ease of doing business.
- Accelerates domestic coal utilization.
- Reduces import dependence.

PONDURU KHADI

Ponduru Khadi from Srikakulam district in Andhra Pradesh has received Geographical Indication (GI) tag recognition.

About

- A **handwoven fabric** primarily produced from short-staple, hill-variety, pest-resistant cotton grown locally.
- This cotton enables chemical-free farming practices, promoting sustainable agriculture and eco-friendly production methods traditional to the region.

About GI Tag

- GI tag protects products linked to a specific geographical origin, ensuring their unique qualities, reputation, or characteristics.
- In India, it is granted under the Geographical Indications of Goods (Registration and Protection) Act, 1999.
- **Administered by:** Controller General of Patents, Designs & Trademarks, Ministry of Commerce & Industry.
- **Duration:** Registered GI is valid for 10 years, renewable indefinitely.
- **Purpose:** Protects traditional knowledge, local skills, and product authenticity.
- **Global Framework:** Recognized under Article 22 of the WTO TRIPS Agreement.

Key GI Tags Awarded in 2025

- **Ambaji Marble (Gujarat)** – Unique *milky-white, durable* marble from Ambaji region.
- **Kumbakonam Betel Leaf (Tamil Nadu)** – Distinct variety of betel leaf cultivated in Kumbakonam region.
- Thovalai's 'Manikka Malai' (garland of rubies) (Tamil Nadu).

CORPORATE SOCIAL RESPONSIBILITY

Recently, the Supreme Court ruled that Corporate Social Responsibility (CSR) inherently includes environmental responsibility.

Key Observations by the Supreme Court

- **Corporations as Constitutional Actors:** The Court held that corporations are not merely profit-making entities, but constitutional actors within society.
  - As legal persons, corporations are bound by Fundamental Duties, particularly **Article 51A(g) of the Constitution.**
  - **Article 51A(g) mandates** protection and improvement of the natural environment, conservation of forests, lakes, rivers and wildlife & compassion for living creatures.
- **CSR Is a Constitutional Obligation, Not Charity:** The Court clarified that CSR, especially in environmental matters, cannot be treated as voluntary philanthropy.
- **Polluter Pays Principle Applied to Wildlife Conservation:** The Court invoked the Polluter Pays Principle in cases where corporate activities threaten or damage endangered species or habitats & corporations must bear the financial burden of restoration.

Corporate Social Responsibility (CSR)

- It is a management framework that integrates social and environmental considerations into business operations and stakeholder interactions, reflecting a long-term commitment to societal welfare.
- The Companies Act, 2013 made it mandatory for certain large companies, both listed and unlisted, to spend **at least 2% of their average net profit** of preceding 3 years on CSR activities.

Criteria for CSR Eligibility

Companies with net worth of Rs 500 crore and above or turnover of Rs 1,000 crore and above or net profit of Rs 5 crore and above have to spend two per cent of average net profits of the last three years.

Significance of CSR

- It promotes equitable development by addressing social inequalities.
- It encourages environmentally responsible practices, including conservation and renewable energy.
- It ensures disclosure of CSR spending in annual reports.
- It supports education, healthcare, sanitation, and livelihood initiatives.

Emerging Issues

- While CSR spending has surged but concerns remain about the impact and monitoring of projects.
- There are **Greenwashing Risks** because some companies focus on optics rather than genuine impact.
- CSR funds often **cluster in urban or industrial areas**, leaving rural regions underserved.
- Smaller firms struggle with reporting and regulatory requirements.

GLOBAL VALUE CHAIN DEVELOPMENT REPORT, 2025

The Global Value Chain Development Report, 2025 has been released by the World Trade Organization (WTO).

About

- **Focus:** How *Global Value Chains (GVCs)* are being reconfigured, not unravelled, amid technological, geopolitical, climate, and policy shifts.
- The report highlights regional reorganisation, technological change, services integration, and policy innovations shaping 21st-century GVCs.

What is the Global Value Chain (GVC)?

- **It refers to** the full range of activities involved in producing a good or service, when these activities are spread across multiple countries.
- **These activities include:** Design & R&D, Sourcing of raw materials, Production and assembly, Logistics and distribution, Marketing, sales & after-sales services.

Major Findings of the Report

- **Recent Trends:** GVCs remain central to international trade, accounting for about **46.3% of global trade** in value-added terms, only slightly below the 2022 peak.
- **India Specific Findings:** India has risen to become **part of the top 10 value adding economies** since the onset of the pandemic, with a share of **2.8% of global Domestic Value Added (DVA) in exports in 2024.**
- **Shifts in GVC Structure: Services** have outpaced goods in GVC participation, accounting for more than **one-third of value added** in manufacturing exports.
- **Regional Reconfiguration:** Asia, Europe, and North America remain dominant in GVC trade.
- **Technological Change & GVCs:** Digitalization, automation, AI and advanced ICT are enabling finer fragmentation of production, lowering coordination costs and creating new resilient network structures.

Challenges for India in GVC Integration

- **Infrastructure and Logistics:** High logistics costs, port inefficiencies, and delays reduce competitiveness.
- **Regulatory and Policy Uncertainty:** Frequent policy changes and compliance burden discourage long-term investment.
- **Limited Trade Agreements:** India's relatively fewer FTAs limit preferential access to major markets.
- **Skill and Technology Gaps:** Shortage of skilled labour in advanced manufacturing.
- **Sustainability Barriers:** Carbon border measures and ESG norms may raise compliance costs for Indian exporters.

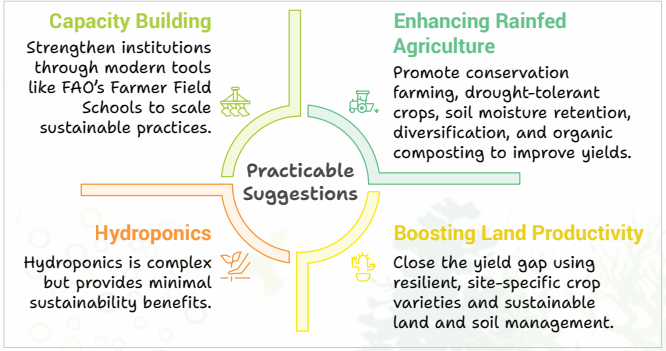
4 ENVIRONMENT

SOLAW REPORT, 2025

The Food and Agriculture Organisation (FAO) of the United Nations recently released The State of the World's Land and Water Resources for Food and Agriculture (SOLAW 2025) report.

Findings of the SOLAW Report

- SOLAW is FAO's **flagship report on land and water management**, aimed at promoting sustainable use to achieve food security and rural development.
- **Global Food Security Challenge:**
  - **Hunger Burden:** Around 673 million people faced hunger in 2024, with recurring food emergencies in many regions.
  - **Rising Demand:** By 2050, feeding 9.7 billion people will require 50% more food and 25% more freshwater than 2012 levels.
- **Global Resource Stress:**
  - About 1.6 billion ha (10%) of global land is degraded, 60% of it agricultural.
  - Agriculture consumes 72% of global freshwater, worsening water scarcity and groundwater depletion.
- **Production Trends and Sustainability:**
  - Since 1964, production rose via intensification (only 8% land expansion).
  - Irrigated croplands (23%) yield 48% of global crop value.
  - Fertilizer overuse and monocropping drive soil degradation, biodiversity loss, and pollution.



Food and Agriculture Organization (FAO)

- The FAO is a specialised agency of the United Nations that leads international efforts to defeat hunger. It works for achieving food security for all.
- With 195 members - 194 countries and the European Union, FAO works in over 130 countries worldwide
- FAO is headquartered in Rome, Italy.

BOMBAY NATURAL HISTORY SOCIETY (BNHS)

The BNHS is set to reintroduce two critically endangered vulture species, Slender-billed Vultures and White-rumped Vultures, in Assam.

About Vulture

- Vultures are large **carrion-eating birds** (feed on dead and decaying animal flesh); about 22 species occur worldwide, mainly in tropical and subtropical regions.
- **India hosts nine species:** Oriental white-backed (white-rumped), Long-billed (Indian), Slender-billed, Himalayan, Red-headed (King), Egyptian, Bearded, Cinereous and Eurasian Griffon vultures.

Unique Features of Vultures

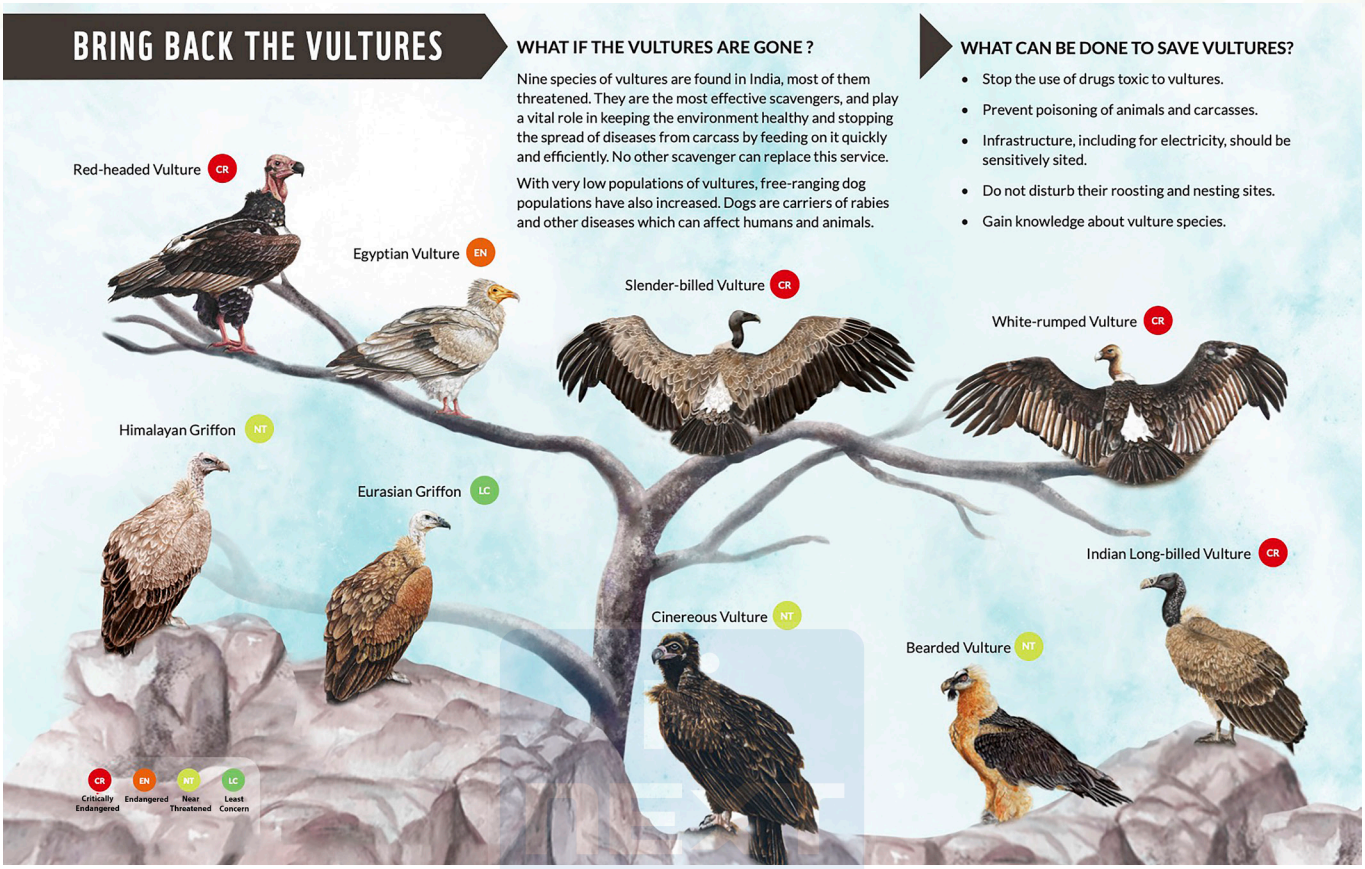
- Vultures act as **nature's sanitation workers** by rapidly consuming carcasses, destroying many pathogens and breaking potential chains of infection.
  - **An extremely acidic stomach** allows safe digestion of rotting meat carrying deadly pathogens like anthrax.
- They also hold cultural significance for the **Parsi community,** which traditionally places its dead on **"Towers of Silence"** to be consumed by vultures as part of funerary rites.

Major Threats

- The biggest threat has been veterinary use of toxic **Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)** such as **diclofenac**, along with other factors: loss of nesting trees, collision/electrocution on power lines, food scarcity, contaminated carcasses and pesticide poisoning. BNHS and other conservation groups promote vulture-safe NSAIDs such as **meloxicam** and **tolfenamic acid** for livestock treatment.
- India has **lost 99 per cent** of the population of the three species, Oriental White-Backed Vulture, Long-billed Vulture and Slender-billed Vulture.

Bombay Natural History Society (BNHS)

- BNHS is one of the largest and oldest NGO in India dedicated to nature conservation and biodiversity research.
- Founded on September 15, **1883**, in Mumbai, its mission is to conserve nature through action based on research, education, and public awareness.
- **Journal of the Bombay Natural History Society (JBNHS):** It is the flagship peer-reviewed journal of BNHS since 1886, covering **ornithology, mammalogy, and biodiversity** research across India.



AFRICAN PENGUINS

A new study finds that excessive sardine fishing off southern Africa led to the deaths of over 60,000 African penguins between 2004 and 2011, especially around Dassen and Robben Islands.

About African Penguins

- **Scientific name:** Spheniscus demersus
- Among the **smallest penguin species**, fast swimmers, living along the coasts of **South Africa and Namibia.**
- **Unique Features:**
  - Unlike Antarctic penguins, they live on **sandy beaches and rocky shores**, not ice.
  - Have a **bare pink patch above the eyes** to regulate body temperature.
  - Each penguin has a **unique chest-spot pattern**, like human fingerprints.

Conservation Status

- Reclassified from "Endangered" to "Critically Endangered" (IUCN, 2024).
- Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) in 1997.
- Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Population & Threats

- **Current Status:** Approx. 19,800 mature individuals (2024) with a 95% breeding pair decline at key colonies since the 2000s. The species is projected to be extinct by 2035 without action.
- **Key Threats:** Overfishing of sardines/anchovies (primary prey), oil spills, guano mining, climate-driven shifts in fish stocks, and invasive predators.
- **Colonies:** Major sites include Dassen (largest), Robben, Stony Point, Bird Islands (Namibia); 80% population is concentrated in 5 colonies.

Additional Information

There are 18 penguin species globally — with King, emperor and rockhopper among the most familiar.

INTERNATIONAL BIG CAT ALLIANCE (IBCA)

The Union Minister for Environment, Forest and Climate Change addressed a high-level meeting of the Collaborative Initiative for Big Cat Conservation under the International Big Cat Alliance (IBCA) in New Delhi.

About IBCA

- Launched by India in 2023 to facilitate global cooperation for the conservation of seven big cat species:

- Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma.
- Out of the seven big cats under IBCA, five are found in India: Tiger, Lion, Leopard, Snow Leopard & Cheetah.

➲ Open to 97 "range countries" where these big cats are found.
- Aims to mobilise global knowledge, resources, and best practices to protect big cats and their ecosystems.

Species	Conservation Status	Key Project (Year)	Unique Feature
Tiger	Endangered (NTCA)	Project Tiger (1973)	Orange coat with black stripes
Asiatic Lion	Endangered	Asiatic Lion Reintroduction Project (2004)	Only social big cat; lives in prides
Leopard	Vulnerable	—	Rosette spots; excellent climber
Snow Leopard	Vulnerable	Project Snow Leopard (2009)	Long tail for balance; powerful hind legs
Cheetah	Extinct (reintroduced)	Project Cheetah (2022)	Fastest land animal; solid spots

INDIA'S WILDFIRE RESOLUTION AT UNEA-7

At UNEA-7 in Nairobi, India's global resolution on wildfire management was unanimously adopted by member nations.

UNEA

➲ The United Nations Environment Assembly (UNEA), established in 2012 under the United Nations Environment Programme (UNEP), is the world's apex body for environmental policymaking.

➲ It convenes biennially in Nairobi, Kenya, with 193 member states, and formulates science-based global environmental actions.

➲ UNEA-7 focused on climate adaptation, circular economy, ecosystem restoration, and wildfire management, recognising fires as a rising climate and development challenge.

Why Wildfires are a Growing Concern

➲ Wildfires are uncontrolled fires that spread through forests and grasslands. They destroy homes, kill wildlife, and release enormous amounts of carbon dioxide, worsening global warming.

➲ According to a UNEP report "**Spreading Like Wildfire",** fire incidents could increase by 14% by 2030, 30% by 2050, and 50% by 2100 if no action is taken.

➲ **Major Causes of Wildfires:**
- **Natural causes:** Lightning strikes, droughts, and extreme heat waves.
- **Human activities:** Burning crop residue, campfires, or throwing cigarette butts.
- **Deforestation**: Clearing forests for land use creates dry, flammable conditions.
- **Climate change**: Higher temperatures and longer dry seasons make fires more frequent and intense.

➲ In India, forest fires are common in Uttarakhand, Himachal Pradesh, Odisha, and the Northeastern states, threatening biodiversity and nearby villages.

India's Resolution at UNEA-7

➲ India introduced a resolution titled "**Strengthening the Global Management of Wildfires,"** which was supported by all member nations.

➲ The resolution focuses on shifting from firefighting to fire prevention and calls for:
- Early warning systems using satellites and AI for faster detection.
- International cooperation for data sharing and best practices.
- Training communities for safe fire management and local awareness.
- Access to climate finance for developing countries to build fire resilience.
- Support for national and regional action plans on wildfire management.

➲ The resolution also recognised the Global Fire Management Hub, established by FAO and UNEP in 2023, as a key platform to coordinate global efforts.

Analytical Perspective

➲ India's leadership at UNEA-7 marks a major shift in how the world approaches wildfires — from reacting to disasters to preventing them before they occur.

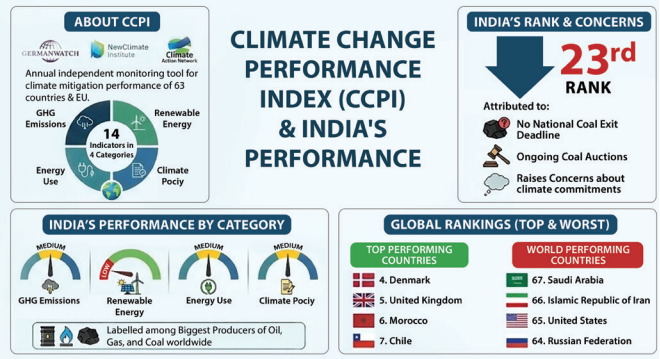
➲ By focusing on early detection, global cooperation, and local empowerment, the resolution supports **climate action** (SDG 13) and **life on land** (SDG 15).

➲ It highlights India's role as a global environmental leader, promoting sustainable solutions that protect people, forests, and the planet.

CLIMATE CHANGE PERFORMANCE INDEX

India dropped 13 places to 23rd in the Climate Change Performance Index released during COP30 in Brazil in November 2025.

About

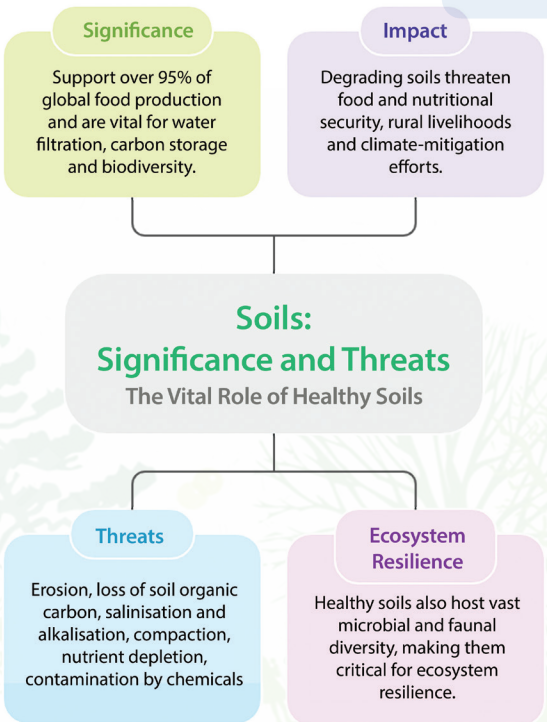


WORLD SOIL DAY

World Soil Day is observed annually on December 5 to raise awareness about the importance of healthy soil and to advocate for sustainable management.

About World Soil Day

- World Soil Day was first proposed in 2002 by the International Union of Soil Sciences (IUSS).
- It was later endorsed by the **Food and Agriculture Organisation (FAO)**, and in 2013, the FAO Conference unanimously backed the idea and requested its formal recognition by the 68th UN General Assembly.
- In December 2013, the UN General Assembly responded by designating **5 December 2014 as the first** official World Soil Day.
- **Theme for World Soil Day 2025:** "Healthy Soils for Healthy Cities".



Initiatives for Soil Conservation

- **Soil Health Card Scheme:** It provides farmers with soil nutrient status reports to encourage balanced fertilizer use and improve productivity.
- **National Mission for Sustainable Agriculture (NMSA):** Components such as Soil Health Management and Rainfed Area Development promote climate-smart, soil-friendly practices.
- **Paramparagat Krishi Vikas Yojana (PKVY) and promotion of natural/organic farming:** Encourage reduced chemical inputs, use of farmyard manure, green manuring and biofertilisers to improve soil organic matter and microbial health.
- **Linkages to SDGs:** World Soil Day supports **SDG 2 (Zero Hunger)**, **SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action)** and **SDG 15 (Life on Land)** by drawing attention to soil as a foundation for food systems, water regulation, carbon storage and terrestrial biodiversity.

TUNDRA BIOME

A new study from Arctic Alaska found that tundra wildfires are now the most frequent in 3,000 years.

What is the Tundra Biome

- The tundra is one of the coldest and harshest environments on Earth. The word comes from a Finnish term meaning **"treeless plain".**
- It is a land of ice, snow, and frozen soil, found in the far north and on high mountains where the weather is too cold for trees to grow.
- The tundra covers around 10% of Earth's land surface, mainly in the Arctic and high-altitude mountain regions.

Types of Tundra

- **Arctic Tundra:** Found in northern Alaska, Canada, Greenland, and Russia (Siberia). It has permafrost — a layer of soil that remains frozen all year, trapping carbon and preventing deep root growth.
- **Alpine Tundra:** Found on high mountains such as the Himalayas, Andes, and Rockies.
  - It does not have permafrost but remains extremely cold, windy, and dry.

Climate and Living Conditions

- **Temperature:** Winters can drop to –50°C, and even in summer, temperatures rarely rise above 10°C.
- **Rainfall:** Very low, similar to a desert (about 150–250 mm per year).
- **Vegetation:** Only small plants like mosses, lichens, and grasses can survive.
- **Animals**: Cold-adapted species such as Arctic foxes, caribou, snowy owls, and polar bears thrive here.

Why the Tundra Matters

- The tundra acts as a giant carbon freezer, storing almost twice as much carbon as the Earth's atmosphere.
- When it warms or burns, this frozen carbon is released as greenhouse gases, worsening global warming.
- Recent tundra wildfires are warning signs of this accelerating climate change.

GLOBAL ENVIRONMENT OUTLOOK-7

The United Nations Environment Programme (UNEP) released the Global Environment Outlook-7 (GEO-7) during UNEA-7 in Nairobi.

Background – What is GEO and why it Matters

- The Global Environment Outlook (GEO), first published in 1997, is UNEP's most comprehensive scientific review of the state of the planet and global environmental policies.
- The seventh edition, A Future We Choose, warns that Earth is approaching irreversible tipping points — in climate, biodiversity, and pollution — unless nations act collectively and urgently.

Key Findings – A Planet Under Stress

- **Warming & Weather Extremes:** Global temperatures have already risen 1.3°C and could reach 3.9°C by 2100, worsening heatwaves, floods, and droughts.
- **Biodiversity Loss:** Over 1 million species face extinction; 40% of land is already degraded.
- **Pollution Crisis:** Air, water, and soil pollution cause 9 million deaths annually. Global waste exceeds 2 billion tonnes per year.
- **Economic Threat:** Climate change could reduce global GDP by 4% by 2050 and 20% by 2100.

India-Specific Insights

- **Monsoon Shifts:** Irregular rainfall threatens food and water security.
- **Land Degradation**: About 33% (≈120 million ha) of India's land is degraded, lowering agricultural productivity.
- **Policy Gap:** India's emission targets are "highly insufficient" for a 1.5°C pathway, highlighting the need for finance and technology transfer.

Transformation Pathway – Four Priority Systems

- **Energy System:** Rapid renewable expansion and fossil phase-out.
  - **Impact:** Cuts emissions and ensures clean energy access.
- **Economic System:** Integrate environmental costs into markets.
  - **Impact:** Shifts investment towards sustainable sectors.
- **Food System:** Promote sustainable diets and cut food waste.
  - **Impact:** Improves nutrition and reduces emissions.
- **Waste System:** Build a circular economy.
  - **Impact:** Reduces resource pressure and pollution.
- The report urges inclusive governance, community participation, and scientific policymaking — arguing that transformation could yield trillions in social and environmental gains compared to inaction.

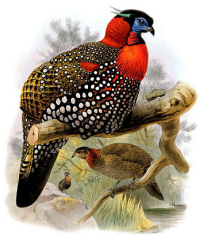
Analytical Perspective

GEO-7 redefines sustainability as smart economics — showing that integrating ecology with energy, finance, and food systems can turn today's crisis into tomorrow's opportunity for shared global prosperity.

WESTERN TRAGOPAN

Recent studies show that habitat loss and human disturbance threaten the Western Tragopan in the Himalayas.

About



- The Western Tragopan (Tragopan melanocephalus) is one of India's rarest pheasants and is the State Bird of Himachal Pradesh.
- It is a medium-sized bird, famous for the male's bright red chest and spotted white feathers, which make it one of the most beautiful Himalayan birds.

Habitat and Distribution

- This bird lives in dense temperate and subalpine forests with thick shrubs, usually between 2,400 and 3,600 metres altitude.
- It is mainly found in Himachal Pradesh (Great Himalayan National Park, Chamba, Kullu, Kinnaur), parts of Jammu & Kashmir, Uttarakhand, and northern Pakistan.
- However, it now survives only in small, isolated forest patches due to human pressure.

Protection and Population

- **Population:** Around 3,000–9,500 mature birds remain (IUCN, 2025).
- **IUCN Red List:** Vulnerable (facing a high risk of extinction).
- **Wildlife Protection Act, 1972:** Schedule I (maximum protection).
- **CITES: Appendix I** (international trade banned).

Major Threats

- Deforestation and habitat loss from road building, farming, and tourism.
- Poaching and hunting for meat and feathers.
- Disturbance during breeding season due to grazing and human activity.

Conservation Efforts

- The Sarahan Pheasantry in Shimla district has successfully bred Western Tragopans in captivity for reintroduction into the wild.
- Protected areas like the Great Himalayan National Park (UNESCO World Heritage Site) provide safe habitats for the species.

RED-SHANKED DOUC MONKEYS

A passenger at Bengaluru Airport was caught smuggling two critically endangered Red-Shanked Douc Monkeys.

About the Species

- The Red-Shanked Douc Monkey (Pygathrix nemaeus) is one of the most colourful and striking primates in the world, often called the "Queen of Primates."
- It belongs to the Old World monkey group and is known for its gentle behaviour and social lifestyle.

Habitat and Distribution

- It is found mainly in the evergreen and semi-evergreen forests of Vietnam, Laos, and Cambodia.
- These monkeys live high up in the forest canopy — rarely coming to the ground — at elevations up to 2,000 metres.
- They are arboreal (tree-living) and diurnal (active during the day), feeding mostly on leaves, fruits, and flowers.

Physical Features

- The Red-Shanked Douc is easily recognised by its grey body, white forearms, maroon-red lower legs, orange-yellow face, and light blue eyelids.
- Males have distinct white patches on their rump, making them stand out even more.

Conservation Status

- **IUCN Red List:** Critically Endangered (facing extremely high risk of extinction).
- **CITES: Appendix I** (international trade is strictly banned).

Threats

- Illegal wildlife trade and poaching for pets and traditional medicine.
- Habitat destruction due to logging and agriculture in Southeast Asia.

MANGROVE CELLS

A new study in Current Biology explains how mangrove trees survive and thrive in salty seawater environments.

Background – Why Mangroves Matter

- Mangroves grow along tropical coastlines where land meets the sea. They thrive in salty, muddy areas where most other plants cannot survive.
- Scientists are studying mangroves because understanding their salt tolerance can help develop crops that grow in salty soils, which is vital as rising sea levels and soil salinisation threaten farmlands.

What the Study Found

- Mangroves survive not because of special pores (stomata), but because of unique cell-level adaptations in their leaves.
- Their leaf cells are smaller and have thicker walls, giving them extra strength to survive salty water pressure.
- They use three key strategies to handle salt:
  - **Salt Exclusion:** Roots block most of the salt before it enters the plant.
  - **Salt Secretion:** Some species take in salt but remove it through tiny pores in their leaves.
  - **Freshwater Storage:** Their thick, fleshy leaves store freshwater like sponges, similar to desert plants.

Mangroves

- Mangroves are flowering trees and shrubs found along tropical and subtropical coastlines.
- Their roots absorb oxygen directly from the air, even when submerged underwater, and can filter out up to 90% of salt.
- They reproduce in a unique way called vivipary — their seeds sprout while still attached to the parent tree.
- **Major Mangrove Areas in India:**
  - **Sundarbans (West Bengal):** The world's largest mangrove forest and a UNESCO World Heritage Site.
  - **Bhitarkanika (Odisha):** India's second-largest mangrove forest and a Ramsar wetland.

Why Mangroves are Important

- **Coastal Protection**: Reduce wave and storm energy by up to 55%, protecting coastal communities.
- **Climate Action:** Store 7–10 times more carbon than other forests.
- **Livelihood Support:** Provide food, fish, and income through aquaculture and eco-tourism.

GREAT INDIAN BUSTARD

The Supreme Court has increased protection for the Great Indian Bustard in Rajasthan and Gujarat.

About the Bird

- The Great Indian Bustard (Ardeotis nigriceps) is one of the heaviest flying birds in the world and is found only in India. It is the State Bird of Rajasthan and eats both plants and small animals like insects and lizards, making it omnivorous.
- **Habitat and Distribution:** It lives in dry grasslands and open plains, mainly in Jaisalmer and Pokhran (Rajasthan). Smaller groups are found in Gujarat, Maharashtra, Karnataka, and Andhra Pradesh.

Protection Status

- **IUCN Red List:** Critically Endangered (less than 150 birds left).
- **Wildlife Protection Act, 1972:** Schedule I (highest protection).
- **CITES:** Appendix I (international trade banned).

Main Threats

- The biggest threat is collision with power lines. Other dangers include loss of grasslands, predation by dogs and foxes, and past hunting.

Conservation Efforts

- The Supreme Court ordered underground power cables and bird diverters to stop accidents.
- Under Project Great Indian Bustard, Rajasthan has set up a breeding centre at Ramdeora, which has successfully hatched several chicks.

RHINO DEHORNING

As of 2024, fewer than 28,000 rhinos remain in the world — all species combined.

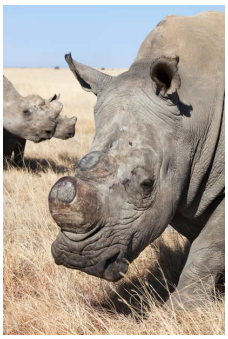
Background – Why Rhinos are in Danger

- Rhinos are huge, plant-eating animals and the second-largest land mammals after elephants.
- They are found in Africa and Asia, but their numbers have fallen sharply because of poaching for their horns.
- From 2017 to 2023, South Africa's Greater Kruger region lost almost 2,000 rhinos to poachers.
- **There are five living species of rhinos:**
  - **African species:** Black and White Rhino
  - **Asian species:** Javan, Sumatran, and Greater One-Horned Rhino (Indian Rhino)
  - **Three of these** — Black, Javan, and Sumatran — are Critically Endangered, while the Indian rhino is Vulnerable (IUCN).

Why Rhino Horns are so Valued

- Rhino horns are made of keratin, the same material as human nails and hair.
- Still, they are illegally sold as status symbols and for traditional medicine in some Asian countries like China and Vietnam.
- This has created a huge black market worth millions of dollars, leading to massive poaching.

What is Dehorning



- Dehorning means carefully removing a rhino's horn under anaesthesia — without hurting it.
- It makes rhinos less attractive to poachers.
- Reserves that practice dehorning report up to a 75% drop in poaching, while dehorned rhinos face a 95% lower risk of being killed.

The Indian Rhino

- Found in Assam (Kaziranga), West Bengal, and Uttar Pradesh.
- Lives in grasslands and wetlands near the Himalayas.
- Protected under CITES Appendix I (international trade banned).

NITRATE CONTAMINATION

More than 20% of Delhi's groundwater has unsafe nitrate levels, according to a government report.

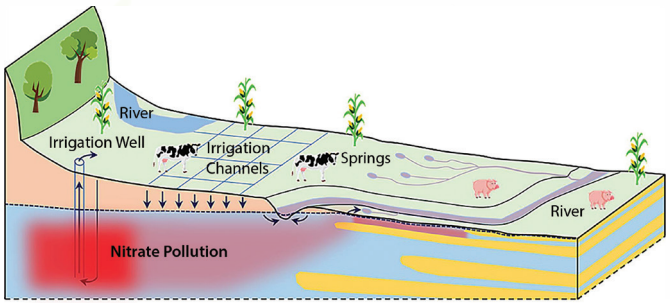
What Are Nitrates

- Nitrates are chemical compounds made of nitrogen and oxygen. They are commonly found in fertilizers, animal waste, and sewage.
- In small amounts, nitrates are harmless, but when they mix with groundwater in large quantities, they can cause serious health and environmental problems.

Causes of Nitrate Contamination

- **Fertilizers:** Farmers use nitrogen-based fertilizers to increase crop yield. Extra fertilizer dissolves in rainwater and seeps underground.

- **Animal Waste:** Waste from farms and cattle sheds mixes with rainwater and reaches groundwater.
- **Sewage Leaks:** Leaking septic tanks and untreated sewage add nitrates to groundwater, especially in cities.



Environmental Impact

- High nitrate levels make algae grow rapidly in lakes and ponds, creating algal blooms.
- When these algae die, oxygen in the water drops, killing fish and other aquatic life.
- This leads to "dead zones" where nothing can survive.

Health Problems

- **Blue Baby Syndrome**: Infants drinking nitrate-rich water can't get enough oxygen in their blood.
- Long-term exposure can cause cancer, thyroid problems, and fatigue in adults.

Key Findings

- **Andhra Pradesh:** Highest nitrate level — 2,296.36 mg/l, compared to the safe limit of 45 mg/l.
- **Rajasthan:** Around 50% of water samples unsafe.
- **Delhi:** Over 20% of samples above safe limits.

NATIONAL ENERGY CONSERVATION AWARD 2025

Karnataka Renewable Energy Development Limited (KREDL) won the National Energy Conservation Award 2025 for top performance in energy efficiency.

About the Award

- The National Energy Conservation Awards (NECA) are given every year by the Bureau of Energy Efficiency (BEE) under the Ministry of Power, Government of India.
- They were first started in 1991 to recognise organisations, industries, and states that save energy and promote renewable sources.
- The aim is to encourage better energy use, reduce waste, and support India's clean energy goals.
- **About the 2025 Award**
  - KREDL received the award under the State Energy Efficiency Performance Award (SDA Group-1) category.
  - This category honours large states that show strong progress in saving energy, promoting renewable power, and creating public awareness about efficiency.
  - KREDL was recognised for expanding solar rooftops, improving building efficiency, and encouraging citizens to adopt sustainable power use.

Significance

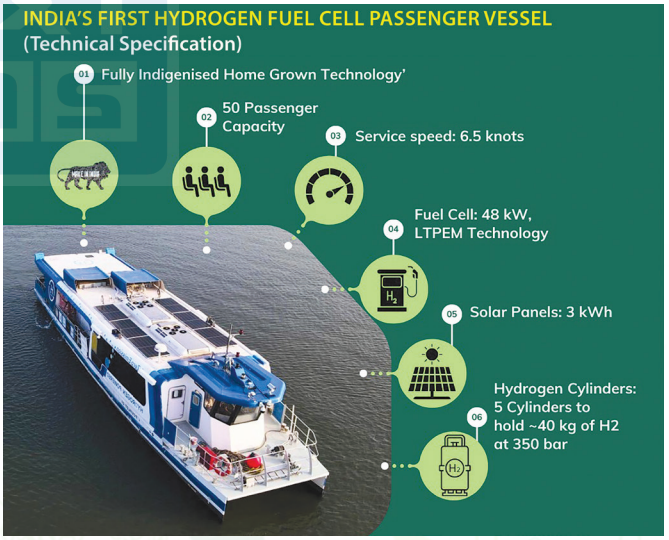
- The award promotes innovation, energy saving, and lower carbon emissions.
- It supports India's goal of cutting energy intensity by 45% by 2030 and achieving Net Zero by 2070.

HYDROGEN FUEL CELL PASSENGER VESSEL

India launched its first hydrogen fuel cell passenger boat in Varanasi — a big step towards green transport.

Background – A New Chapter in Clean Transport

- This is the first time India has built a boat that runs entirely on hydrogen fuel cells, showing progress toward pollution-free travel and clean energy use on water.
- The project supports India's long-term goals of Net Zero by 2070 and Maritime India Vision 2030, which aim for sustainable, eco-friendly waterways.



About the Vessel

- **Built by:** Cochin Shipyard Limited (CSL)
- **Owned by:** Inland Waterways Authority of India (IWAI)
- **Launched at:** Varanasi, Uttar Pradesh
- The boat uses Proton Exchange Membrane (PEM) fuel cell technology, which converts hydrogen and oxygen into electricity to run the motor.
- Unlike diesel engines, this system does not burn fuel and produces only water vapour as waste — making it completely clean and quiet.

How it Works

- Hydrogen stored in tanks reacts with oxygen from the air inside the fuel cell.
- This chemical reaction produces electricity, which powers the vessel's engines.
- There is no smoke, noise, or vibration, making it ideal for river tourism and city transport.

Why it Matters

- **Environment:** Zero pollution and no greenhouse gases.
- **Economy:** Reduces dependence on imported diesel.
- **Innovation:** First fully made-in-India hydrogen vessel.
- **People:** Cleaner travel, better air, and fewer road traffic jams.

CITES CONFERENCE OF THE PARTIES (COP-20)

The 20th CITES Conference in Uzbekistan celebrated 50 years of global cooperation in wildlife trade regulation.

What is CITES

- **CITES** stands for the Convention on International Trade in Endangered Species of Wild Fauna and Flora.
- It is a global agreement between governments to ensure that international trade in wild animals and plants does not threaten their survival.
- CITES was created because overexploitation and illegal trading of species like tigers, elephants, rhinos, and orchids were leading to extinction risks.

History

- The idea for CITES was proposed in 1963 by the International Union for Conservation of Nature (IUCN).
- It was adopted in 1973 and came into force in 1975.
- Today, 184 countries (known as Parties) are members of CITES.

How CITES Works

- Species are classified into three appendices based on their conservation needs:
  - **Appendix I:** Trade banned for species threatened with extinction (e.g., tigers, rhinos).
  - **Appendix II:** Controlled trade with permits for species that may become threatened (e.g., rosewood, orchids).
  - **Appendix III:** Species protected by individual countries that seek international cooperation.
- CITES rules are legally binding, but each nation enforces them through its national laws.

CITES CoP-20 (2025, Uzbekistan)

- The 20th Conference of the Parties (CoP-20) marked 50 years of the treaty.
- **Key highlights include:**
  - Launch of blockchain-based tracking for transparent wildlife trade.
  - Addition of sharks, hardwood trees, and reptiles to CITES appendices.
  - Focus on community-based conservation, combining livelihoods and biodiversity protection.

India's Role

- India joined CITES in 1982 and implements it via the Wildlife (Protection) Act, 1972.
- The Wildlife Crime Control Bureau (WCCB) combats illegal trade. India used CITES to curb trade in star tortoises and red sand boas.

NEW RAMSAR SITES

India has designated Siliserh Lake (Rajasthan) and Kopra Jalashay (Chhattisgarh) as its 95th and 96th Ramsar Sites.

What are Wetlands

- Wetlands are areas where land and water meet, such as marshes, swamps, ponds, and floodplains.
- According to the Ramsar Convention (1971), wetlands include both natural and human-made water bodies—fresh, brackish, or saltwater—where the water may be static or flowing, permanent or temporary, and shallower than six metres at low tide.
- **Examples** of human-made wetlands: fish ponds, salt pans, reservoirs, sewage farms, canals, and irrigated fields.
- **Wetlands play a crucial role in:**
  - **Flood control:** Acting as natural sponges that absorb excess rainwater.
  - **Biodiversity:** Providing habitat for migratory birds and aquatic species.
  - **Carbon storage:** Helping mitigate climate change.

About the Ramsar Convention

- The Ramsar Convention is an international treaty signed in Ramsar, Iran, on February 2, 1971, and enforced in 1975.
- It is one of the oldest global environmental agreements, focusing on the conservation and sustainable use of wetlands.
- India joined the Ramsar Convention in 1982 and currently has 96 Ramsar Sites, up from 26 in 2014 — showing its growing commitment to wetland protection.

Newly Designated Ramsar Sites

- **Siliserh Lake, Rajasthan:**
  - A man-made freshwater lake built in 1845 by Maharaja Vinay Singh of Alwar.

- Originally created to supply drinking water to Alwar city.
- Located near the Sariska Tiger Reserve, making it an important habitat for migratory birds and a key link in local biodiversity.

➲ **Kopra Jalashay, Chhattisgarh:**
- The first Ramsar site in Chhattisgarh, located near Bilaspur.
- A reservoir in the upper Mahanadi River basin, it supports fisheries, irrigation, and freshwater biodiversity.
- It acts as a major water recharge zone for nearby agriculture and sustains local livelihoods.

Analytical Perspective

➲ The inclusion of Siliserh Lake and Kopra Jalashay strengthens India's wetland conservation network under the Amrit Dharohar Mission (2023) and supports the Lifestyle for Environment (LiFE) initiative.

➲ Wetlands not only sustain ecosystems but also enhance climate resilience, eco-tourism, and community-based conservation — aligning with SDG 6 (Clean Water), SDG 13 (Climate Action), and SDG 15 (Life on Land).

GREAT BARRIER REEF

Extreme ocean heat and a rare coral disease have destroyed 75% of Goniopora colonies in Australia's Great Barrier Reef.

What are Coral Reefs

➲ Coral reefs are underwater ecosystems built by tiny animals called coral polyps.

➲ These polyps form hard skeletons made of calcium carbonate, which accumulate over centuries to create large reef structures.

➲ They live in partnership with microscopic algae (zooxanthellae) that provide them food through photosynthesis and give corals their bright colors.

➲ Reefs are often called the "rainforests of the sea" because they support nearly 25% of all marine species, even though they occupy less than 1% of the ocean floor.

Environmental Conditions for Coral Growth

➲ **Temperature:** Ideal between 20°C–35°C.

➲ **Salinity:** Moderate salt levels between 27–40‰ (parts per thousand).

➲ **Depth:** Prefer shallow waters (less than 50 meters) to allow sunlight for photosynthesis.

➲ If temperature or pollution levels rise beyond tolerance, corals expel their algae — a phenomenon known as coral bleaching, which can eventually lead to coral death.

The Great Barrier Reef (Australia)

➲ Located in the Coral Sea off the coast of Queensland, the Great Barrier Reef is the world's largest coral reef system, stretching over 2,300 km.

➲ It is a UNESCO World Heritage Site and one of the Seven Natural Wonders of the World.

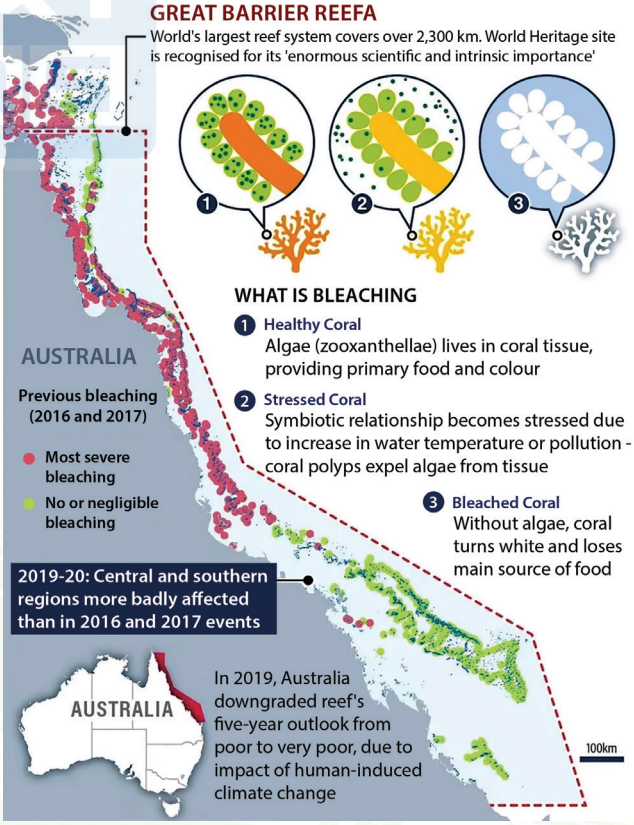
➲ However, recent years have seen frequent coral bleaching events due to global warming and new coral diseases such as those affecting Goniopora species, threatening both marine biodiversity and tourism.

Coral Reefs in India

➲ **Major coral reef areas in India include:**
- Gulf of Kutch (Gujarat)
- Gulf of Mannar (Tamil Nadu)
- Lakshadweep Islands
- Andaman & Nicobar Islands
- Malvan (Maharashtra)

➲ These reefs protect coastlines from erosion, support fisheries, and store "blue carbon," helping in climate regulation.

➲ However, pollution, coastal development, and rising sea temperatures threaten their survival.



5 GEOGRAPHY

PAMIR–KARAKORAM ANOMALY

Scientists are studying Pamir ice cores to understand why its glaciers resist melting despite global warming.

Background: Why it Defies Global Patterns

- While most glaciers worldwide are retreating due to rising temperatures, the glaciers in the **Pamir and Karakoram ranges** — spanning parts of **Tajikistan, China, Afghanistan, and Kyrgyzstan** — have remained stable or even gained mass.
- This unusual pattern, termed the **"Pamir–Karakoram Anomaly,"** challenges conventional understanding of climate-glacier dynamics.

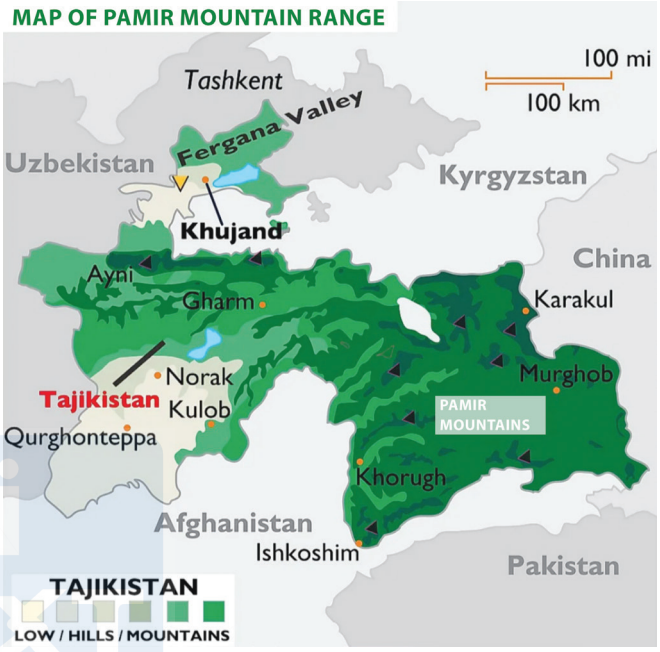
Understanding the Anomaly

- Glaciers generally shrink when melting exceeds accumulation. However, in this region, local climatic conditions balance or reverse that trend:
  - **Western Disturbances:** Winter storms from the Mediterranean bring heavy snowfall, replenishing glacier mass.
  - **Topographic Insulation:** High peaks block moist monsoon winds, maintaining colder microclimates.
  - **Altitude & Aspect:** Many glaciers are above 5,000 m, where average annual temperatures stay below freezing.
  - **Reduced Summer Melting:** Shorter summers and local cooling effects limit ablation (ice loss).
  - Together, these factors explain why this region resists warming — even as neighbouring Himalayas experience accelerated melt.

Pamir Mountains

- **Geological Formation:** Created by the collision of the Indian and Eurasian tectonic plates, making the area seismically active.
- **Convergence Zone:** Known as the "**Pamir Knot**", it connects the **Himalayas, Karakoram, Hindu Kush, Kunlun, and Tian Shan ranges** — hence the term "**Roof of the World.**"
- **Drainage & Ecology:** Home to the Fedchenko Glacier, the largest in Central Asia, which feeds the Panj and Vakhsh Rivers, forming the **Amu Darya River System** — vital for Central Asian agriculture.
- **UNESCO Significance:** ***The Tajik National Park***, covering much of the Pamirs, is a World Heritage Site.

MAP OF PAMIR MOUNTAIN RANGE



Scientific Importance

- Studying Pamir ice cores helps reconstruct paleoclimate data, understand regional resilience to global warming, and improve water resource management in Central Asia's arid basins.

Analytical Perspective

The Pamir–Karakoram Anomaly highlights that climate impacts are regionally uneven — shaped as much by geography and local weather systems as by global temperature rise.

INDIA–NETHERLANDS PARTNERSHIP

India and the Netherlands reaffirmed expanding defence and strategic cooperation during the recent high-level ministerial dialogue.

Background

- The India–Netherlands relationship has evolved from trade ties into a comprehensive strategic partnership, combining defence cooperation, climate technology, and maritime security.
- The Netherlands, located in northwestern Europe, is a constitutional monarchy and a parliamentary democracy, known for innovation in water management and renewable energy.

Geographical and Economic Significance

- **Location:** Borders Germany, Belgium, and the North Sea — making it one of Europe's most accessible trading hubs.
- **Topography:** Much of its land lies below sea level, protected by dykes and sea barriers — hence the name "Netherlands" (Low Countries).
- **Economic Powerhouse:**
  - The Port of Rotterdam is Europe's largest port, connecting the continent to global maritime trade.
  - The Netherlands is a world leader in agritech, logistics, and circular economy models.

India–Netherlands Cooperation

- **Defence and Maritime Security:** Joint naval exercises in the Indian Ocean. Collaboration in shipbuilding and maritime domain awareness.
- **Trade and Investment:** The Netherlands ranks among India's top five EU trading partners. Over 250 Dutch companies operate in India, mainly in renewable energy, water management, and logistics.
- **Climate and Technology Partnership:** The Netherlands supports India's initiatives on clean energy, waste management, and coastal adaptation under Mission LiFE (Lifestyle for Environment).

Strategic Significance

- This cooperation strengthens India's European outreach amid shifting global supply chains and maritime competition in the Indo-Pacific.
- The partnership also complements India's vision of "Security and Growth for All in the Region (SAGAR)."

Analytical Perspective

India–Netherlands ties exemplify new-age diplomacy — merging trade, technology, and sustainability to build a resilient Indo-European partnership for a multipolar global order.

CHILLAI-KALAN

Kashmir is presently experiencing Chillai-Kalan, the harshest and coldest phase of its winter season.

About

- Chillai-Kalan marks the coldest part of winter in Kashmir, lasting 40 days from December 21 to January 31.
- The name comes from Persian, meaning "major cold." During this time, temperatures drop to sub-zero levels, causing lakes and rivers to freeze and bringing frequent snowfall across the valley.
- **It is followed by two shorter cold phases:**
  - **Chillai-Khurd (small cold):** 20 days, from February 1–20
  - **Chillai-Bachha (baby cold):** 10 days, from February 21–March 2

Reason for Extreme Cold

- This severe winter occurs because the Sun's apparent position shifts to the Tropic of Capricorn during this period, resulting in low solar radiation and shorter daylight hours in the Northern Hemisphere.
- Cold winds from the snow-covered Himalayas and Central Asia also intensify the freezing conditions in the Kashmir Valley.

Relevance and Importance

- Heavy snowfall during Chillai-Kalan recharges glaciers and water reservoirs, feeding rivers like the Jhelum and maintaining water flow during summer.
- However, less snowfall can lead to water scarcity, affecting agriculture, hydropower, and daily life.
- Culturally, Kashmiris prepare traditional winter foods, use kangris (fire pots), and stay indoors to face the intense cold.

SOUTHERN OCEAN

New research shows the Southern Ocean absorbs more carbon dioxide than earlier predicted by climate models.

About

- The Southern Ocean is one of Earth's five major oceans, encircling the continent of Antarctica.
- It extends roughly from 60° South latitude to the Antarctic coast, connecting the Atlantic, Indian, and Pacific Oceans.
- It was formed about 34 million years ago when Antarctica and South America drifted apart, creating the Drake Passage, which enabled the formation of a continuous ocean current around Antarctica.
- It was officially recognised as a distinct ocean by the International Hydrographic Organization (IHO) in 2000 and is governed under the Antarctic Treaty System, which promotes scientific research and environmental protection.

Reason for High Carbon Absorption

- The Southern Ocean's cold temperatures and powerful Antarctic Circumpolar Current (ACC) allow deep, carbon-rich waters to rise and mix with surface layers.
- As these waters cool, they absorb large amounts of carbon dioxide (CO_2) from the atmosphere before sinking again — a process known as carbon sequestration.
- Strong westerly winds and frequent storms further enhance gas exchange between the ocean and atmosphere, increasing CO_2 uptake.

Significance

- The Southern Ocean absorbs nearly 40% of total oceanic CO uptake, making it a critical climate regulator.
- It also supports rich marine biodiversity, including krill, penguins, seals, and whales.

ALAWITE MINORITY IN SYRIA

Eight people were killed in an explosion at an Alawite mosque in Homs, Syria.

Who are the Alawites

- The Alawites are a religious minority group mainly found in Syria, with smaller populations in Turkey and Lebanon.
- They follow Alawism, a branch that originated from Shia Islam, particularly from Twelver Shi'ism, but developed unique spiritual and cultural practices.
- Their faith blends Islamic teachings, mystical beliefs, and local traditions, making them distinct from both Sunni and mainstream Shia Muslims.
- Historically, Alawites faced marginalization in the Ottoman era but gained prominence in the 20th century when Hafez al-Assad, an Alawite, became President of Syria in 1971.
- The Assad family ruled Syria for over five decades (1971–2024), making the Alawites the country's politically dominant minority despite being only 10–15% of the population.

Syria

- **Location:** West Asia, in the Levant region.
- **Borders:** Turkey (north), Iraq (east), Jordan (south), Israel (southwest), and Lebanon (west).
- **Coastline:** Small stretch along the Mediterranean Sea.
- **Major River:** Euphrates River, crucial for agriculture and irrigation.
- **Syria's religious and ethnic diversity** — including Sunni Arabs, Alawites, Kurds, Druze, and Christians — has played a major role in shaping its complex social and political history.

GULF OF OMAN

Iran seizes foreign oil tanker carrying 6 million litres of smuggled Diesel in the Gulf of Oman.

About

- The Gulf of Oman is the north-western arm of the Arabian Sea.
- It forms a vital maritime corridor connecting the Indian Ocean with the Persian Gulf through the **Strait of Hormuz.**
- Through the Strait of Hormuz, it provides access to the **Persian Gulf, making it vital for global oil and LNG trade.**

DOPPLER WEATHER RADARS

India now operates 47 Doppler Weather Radars, covering 87% of its landmass for real-time weather monitoring.

Background: Weather Forecasting in a Warming World

- As climate change intensifies extreme weather — from cyclones to flash floods — accurate short-term weather prediction has become vital.
- The Doppler Weather Radar (DWR) network forms the backbone of India's early warning infrastructure, enabling the **India Meteorological Department (IMD)** to predict and mitigate disasters more effectively.

What is a Doppler Weather Radar

- Named after the Doppler Effect, discovered by Christian Doppler, it measures changes in the frequency of radio waves reflected by moving particles.
- **Mechanism:**
  - The radar sends radio pulses into the atmosphere.
  - These waves bounce off raindrops, snowflakes, or hailstones.
  - The change in frequency of the returning signal reveals both distance and velocity of the precipitation system.
- **Core Functions:**
  - **Detect** rain, snow, hail, and storm intensity.
  - **Track** wind speed and direction.
  - **Enable nowcasting** — short-term (0–3 hour) forecasting critical for urban flood and cyclone alerts.

India's Radar Network

- As of 2025, 47 DWRs cover about 87% of India's area, with new installations planned in the Northeast, Jammu & Kashmir, and coastal belts.
- Each radar has a range of 250–500 km, allowing continuous observation of localised weather events.

Significance for India

- **Cyclone Prediction:** Enhanced monitoring of Bay of Bengal and Arabian Sea systems reduces disaster response time.
- **Flood Management:** Real-time rainfall estimates improve dam operation and early evacuation planning.
- **Aviation Safety:** Supports air traffic control with turbulence and visibility data.

Analytical Perspective

India's Doppler radar network symbolises climate resilience through technology — transforming reactive disaster management into proactive early warning and saving lives through data-driven decisions.

6 INTERNAL SECURITY

HERON MK II UAVS

India has initiated the procurement of Heron MK-II drones from Israel under emergency provisions invoked after Operation Sindoor.

About

- The Heron MK-II Remotely Piloted Aircraft (RPA) is an advanced MALE unmanned aerial vehicle used by the Indian Armed Forces for surveillance, reconnaissance, intelligence gathering, and precision strike operations.
- **Developer:** Israel Aerospace Industries (IAI)
- **Capability:** The Heron Mk II is a Medium-Altitude, Long-Endurance (MALE) UAV. It can carry **close to 500 kg** of payload and sustain more than 24 hours of continuous flight.
- **Sensors and Systems:** Equipped with **Synthetic Aperture Radar (SAR), electro-optical systems, and SIGINT sensors,** the platform provides comprehensive ISR capabilities even in challenging weather conditions.
- **Significance:** Heron drones are primarily deployed for **long-range surveillance** on both the Chinese and Pakistani frontiers and have proven highly effective.

INDIAN NAVY DAY

Navy Day is celebrated on the 4th of December every year to recognise the achievements and role of the Indian Navy.

About

- **Navy Day 2025:** Celebrated with an Operational Demonstration at Shangumugham beach, Thiruvananthapuram, the 7th rotation city, highlighting Kerala's maritime role and Southern Naval Command's IOR significance.

History

- **Operation Trident (1971):** On this day, the Indian Navy sank four Pakistani vessels, including PNS Khaibar, during Operation Trident.
- **Missile Attack (1971 Indo-Pak War):** INS Nirghat, Nipat, and Veer fired Soviet Osa-I missiles from Okha, hitting Karachi harbour—the region's first naval missile strike.

EU FINE ON X

Elon Musk-owned X was fined 120 million euro ($140 million) by the European Union for violating its transparency rules under the Digital Services Act (DSA).

About the DSA

- **Digital Services Act:** This Act is an EU regulatory framework reshaping how online platforms and digital intermediaries function.
- **Scope and Targets:** Applies most strictly to **Very Large Online Platforms (VLOPs)** and Very **Large Online Search Engines (VLOSEs)** with over 45 million EU users.
- **Designated Entities:** Includes Amazon, Apple App Store, Facebook, Instagram, TikTok, Google, YouTube, WhatsApp, and others.
- **Penalties:** Violations can incur fines up to 6% of global annual turnover, with possible service suspension for repeated offences.

FIRST INDIGENOUS DIVING SUPPORT CRAFT 'DSC A20'

The Indian Navy will commission DSC A20, the first indigenously designed and built Diving Support Craft (DSC), at Kochi under the Southern Naval Command.

About

- **Builder:** Constructed by M/s Titagarh Rail Systems Limited (TRSL), Kolkata, as the lead vessel in a series of five DSCs.
- **Design Feature:** Incorporates a catamaran hull form for superior stability, enhanced deck area, and improved seakeeping ability.
- **Displacement:** Approximately 390 tons, reflecting its robust design and operational capacity.
- **Operational Role:** Enhances the Indian Navy's strength in diving support, underwater inspection, salvage assistance, and coastal operations.

AH-64E APACHE ATTACK HELICOPTERS

The Indian Army received the final batch of three AH-64E Apache attack helicopters on 16 December 2025 at Hindon Airbase, completing its fleet of six units for the 451 Army Aviation Squadron in Jodhpur, Rajasthan.

About

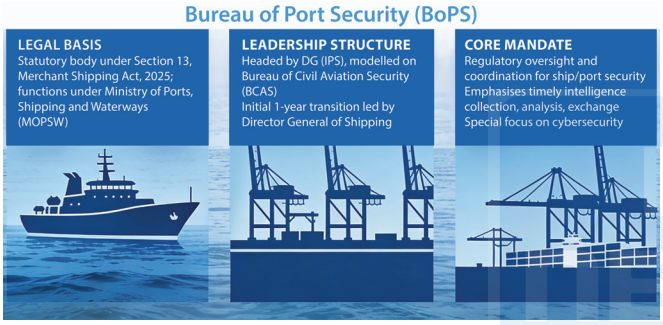
- **Procurement Deal:** Signed in February 2020 for six helicopters under a $600 million deal with Boeing, USA; the first batch arrived in July 2025 after a 15-month delay due to supply chain issues.
- **Key Specifications:** Powered by T700-GE-701D engines (1,994 shp); max speed 150+ knots; service ceiling 20,000 ft; armed with 16 Hellfire missiles, 76 rockets, 30mm chain gun.

- **Advanced Features:** Equipped with 26 upgraded technologies, including sensor fusion, networked warfare, composite rotors for high-altitude/desert ops, and real-time UAV control.
- **Deployment Role:** Bolsters strike, anti-armour, surveillance, and close air support along the western border (Pakistan); enhances Army Aviation Corps and joint ops with IAF's 22 Apaches.

BUREAU OF PORT SECURITY (BOPS)

The Union Home Minister has convened a high-level meeting to constitute the Bureau of Port Security (BoPS) for securing vessels and port facilities nationwide. The CISF has been designated as the Recognised Security Organisation for ports under the revamped framework.

About



SEAHAWKS SQUADRON IN THE NAVY

The Indian Navy commissioned its second MH-60R Seahawk squadron, INAS 335 (Ospreys) at INS Hansa, Goa, enhancing maritime surveillance capabilities.

About

- **Procurement Details:**
  - India acquired 24 MH-60R **submarine-hunting helicopters** from the US under a deal signed in 2020.
  - Previously, INAS 334 'Seahawks' were commissioned in Mar 2024 at **INS Garuda, Kochi.**
- **Aircraft Origin:** US-made Seahawk is a variant of the Sikorsky UH-60 Black Hawk, optimised for maritime roles.
- **Squadron Nickname:** Christened 'Ospreys', inspired by the fish-hunting bird of prey.
- **Operational Roles:** Supports anti-submarine warfare (ASW), anti-surface warfare (ASuW), search & rescue (SAR), and medical evacuation (MEDEVAC) missions.
- **Replacement Role:** Gradually phasing out ageing British-origin Sea King helicopters in Navy service.
- **Strategic Role:** Enhances maritime surveillance, deterrence in the Arabian Sea/IOR against conventional/asymmetric threats; integrates with fleet ops and UAVs.

INS ANJADIP

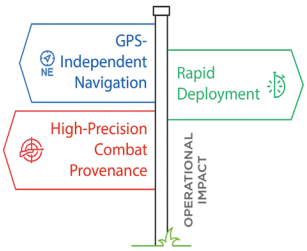
'Anjadip', the third of eight Anti-Submarine Warfare Shallow Water Crafts (ASW SWC), was recently inducted into the Indian Navy at Chennai.

SIGMA 30N

India Optel Limited (IOL) partners with a French firm to manufacture advanced navigation and sighting systems for the Indian Army, boosting indigenous defence production.

Agreement Overview

- **Manufacturing Agreement:** India Optel Limited (IOL), a Mini-Ratna Defence PSU, has partnered with a French firm to indigenously produce high-precision combat systems under the 'Make in India' initiative.



Systems Involved

- **SIGMA 30N Digital Ring Laser Gyro Inertial Navigation System:** Deployed in artillery guns, air defence systems, missiles, and radars for precise navigation.
- **CM3-MR Direct Firing Sight:** Tailored for artillery guns and anti-drone applications, enabling accurate targeting.

DEW-TECHNOLOGIES

The DRDO has authorized the transfer of critical Directed Energy Weapon (DEW) technologies to Apollo Micro Systems, a Hyderabad-based private firm, under the "Development-cum-Production Partner" (DcPP) model.

About DEWs

- **Mechanism:** DEWs utilize highly concentrated electromagnetic energy, primarily high-power lasers, to neutralize targets through **thermal degradation or electronic disruption.**
- **Advantage over Conventional Arms:** Unlike kinetic weapons (missiles/bullets), DEWs offer a "low cost-per-shot," near-instantaneous travel (speed of light), and a virtually "infinite magazine" as long as power is supplied.

Operational Significance for India

- **Anti-Drone Warfare:** Provides an effective solution against "swarm drone" attacks where traditional missile defenses are economically unviable.
- **Precision and Stealth:** Enables silent engagement with minimal collateral damage, making it ideal for sensitive border environments and electronic warfare.

EVALUATION TRIAL OF AKASH-NG

India successfully conducted the User Evaluation Trial of Akash-NG, validating its performance for advanced surface-to-air missile defense.

About

- The DRDO and the Indian Air Force (IAF) successfully concluded the **User Evaluation Trials (UET)** for the **Next Generation Akash (Akash-NG)** missile system.
- **Significance:** Successful UETs signal the completion of developmental phases, clearing the path for mass production and formal induction into the Indian Armed Forces.

Operational Capabilities

- **Multi-Threat Neutralization:** Specifically engineered to intercept high-speed, maneuvering aerial threats, including **fighter jets, cruise missiles, and Unmanned Aerial Vehicles (UAVs).**
- **Versatile Engagement:** Capable of engaging **multiple targets simultaneously** across varying altitudes and speeds.
- **Enhanced Mobility:** Features a reduced footprint with a canisterized launcher, allowing for rapid transport and quicker deployment in diverse terrains.

SAMUDRA PRATAP

The Indian Coast Guard (ICG) recently launched Samudra Pratap, the first of two specialized Pollution Control Vessels (PCVs) constructed by Goa Shipyard Limited (GSL).

About

Strategic Design and "Aatmanirbharta"

- **Pioneer:** It is the first PCV to be indigenously designed and built in India.
- **High Local Content:** Boasts over 60% indigenous content.
- **Fleet Scale:** As the largest ICG vessel, it extends blue-water endurance.

Advanced Weaponry

- **Precision Firepower:** Armed with a 30mm CRN-91 gun and two 12.7mm stabilized remote-controlled guns.
- **Integrated Fire Control:** Features sophisticated systems for automated targeting and engagement of surface and aerial threats.

Technological Infrastructure

- **Smart Platform Management:** Integrated with an **Indigenous Bridge System (IBS)** and an **Integrated Platform Management System (IPMS)** for centralized control of ship functions.
- **Power & Firefighting:** Equipped with an **Automated Power Management System** and high-capacity external firefighting gear to tackle offshore industrial disasters or ship fires.

Core Mission

- Engineered for **oil spill containment/recovery** and **chemical leak response** in India's EEZ, **safeguarding marine ecology** and **coastal economies.**

Indian Coast Guard (ICG)

- ICG is a multi-mission armed force under the Ministry of Defence, established by the Coast Guard Act, 1978.
- **Mandate:** Protects India's maritime zones (territorial waters, contiguous zone) and Exclusive Economic Zone (EEZ) through surveillance, anti-smuggling, pollution control, SAR, and enforcement of the Maritime Zones of India Act, 1976.

NATGRID IS LINKED TO THE NATIONAL POPULATION REGISTER (NPR)

NATGRID has been integrated with the National Population Register (NPR) to create a comprehensive demographic-intelligence database for expedited criminal investigations.

About

- **Objective:** To enable seamless, real-time access to verified family-linked data, enhancing the "big data" capabilities of India's internal security framework.

Gandiva': The Advanced Analytical Engine

- **Role:** Upgraded AI tool for data synthesis. Integrated into the NATGRID platform.
- **Capabilities:** Features facial recognition and entity resolution. Matches suspect images across databases.

NATGRID

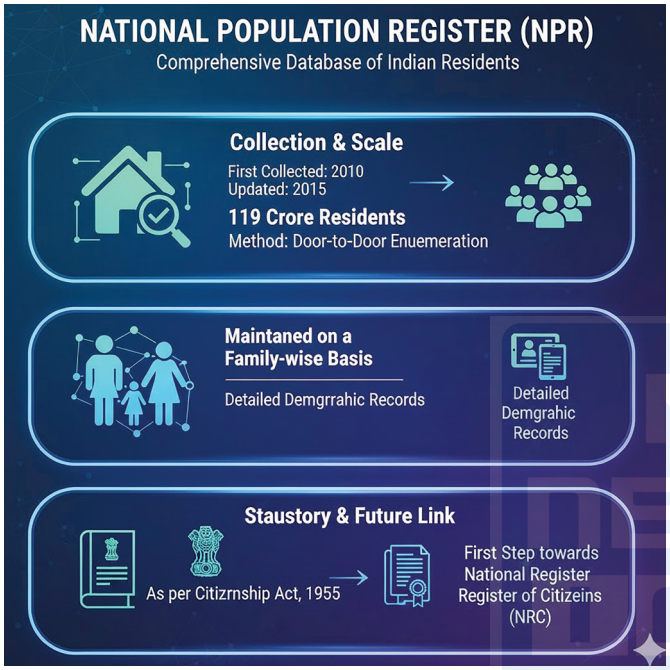
- **Genesis:** Conceived post-2008 Mumbai (26/11) terror attacks to eliminate "information silos" among various security and intelligence agencies.
- **Institutional Framework:** Operates as an attached office under the **Ministry of Home Affairs (MHA).**
- **Data Consolidation:** Aggregates over 20 categories of sensitive data, including bank transactions, immigration records, CCTNS (Police FIRs), tax IDs (PAN), and telecom usage.

Expanded Accessibility Protocols

- **Participating Agencies:** Primarily used by central bodies like the IB, R&AW, NIA, ED, and Financial Intelligence Unit (FIU).
- **Decentralization:** Access has been extended down to **Superintendent of Police (SP) rank officers**, significantly empowering district-level law enforcement with national-level intelligence.

Significance of the NPR-NATGRID Linkage

- **Demographic Verification:** Provides investigators with verified, family-linked demographic profiles of suspects.
- **Network Analysis:** By mapping family members and associates, it helps identify potential safe houses, funding patterns, and movement trajectories.
- **Precision Targeting:** Combines biometric data with social/economic markers to neutralize threats with higher accuracy and minimal lead time.



COMMON ANTI-TERRORISM SQUAD STRUCTURE

The Union Home Minister recently proposed a standardized ATS structure for all states during the NIA-organized 'Anti-Terrorism Conference-2025'.

Strategic Rationale

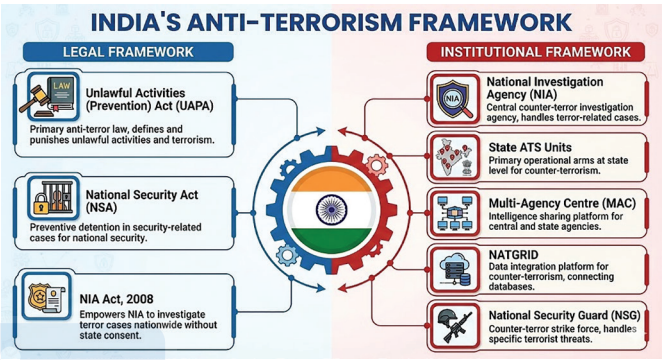
- **Technological Evolution:** Combats modern threats like drones, AI, encrypted communications, and online radicalization, which bypass traditional state borders.
- **Eliminating Vulnerabilities: Standardized protocols** prevent terror groups from exploiting **"weak links"** in states with less developed security systems.

Key Features of the Framework

- **Uniform Preparation:** Implements identical training modules, specialized weaponry, and standard operating procedures (SOPs) nationwide.
- **Integration with Central Databases:** Mandates the use of NATGRID and NIDAAN to link isolated cases and reveal "invisible" terror networks.

Significance

- **Seamless Coordination:** Resolves federal friction by creating a "common language" for state ATS units to work with central agencies (NIA, IB).
- **Proactive Grid:** Shifts from reactive policing to a 360-degree strike model on organized crime and terror-funding linkages.
- **Standardized Benchmarks:** Sets national response timelines and investigation standards, as seen in the success of **Operations Sindoor and Mahadev.**



K-4 MISSILE

India successfully test-fired the K-4 Submarine-Launched Ballistic Missile (SLBM) from INS Arighaat, the nation's second SSBN (Nuclear-powered ballistic missile submarine), in the Bay of Bengal.

About

- **Range & Payload:** Developed by **DRDO**, the K-4 has a strike range of **3,500 km** and can carry a **2,500 kg (2.5-ton)** nuclear warhead.
- **Lineage:** Derived from the **Agni-III** land-based missile, it represents India's longest-range sea-launched strategic weapon currently tested.
- **Tribute:** The 'K' series is named after **Dr. APJ Abdul Kalam**, honoring his contribution to India's Integrated Guided Missile Development Program (IGMDP).
- **Closing the Range Gap:** The K-4 (along with future **K-5/K-6** missiles) aims to achieve parity with major powers like the US, Russia, and China, whose SLBMs exceed 5,000 km.

Strategic Significance

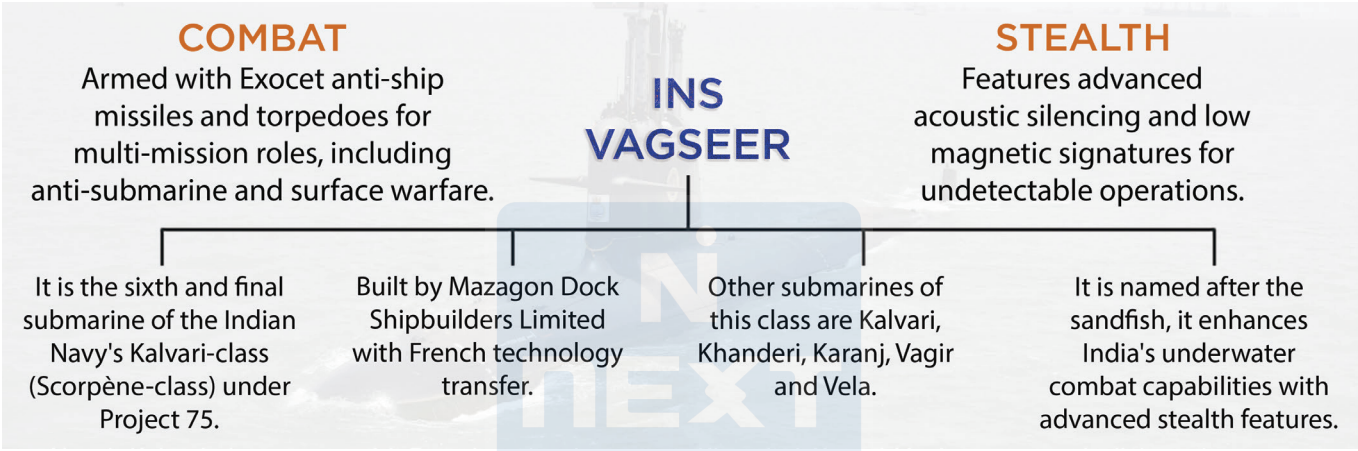
- **Enhanced Deterrence:** It significantly upgrades the sea-based leg of India's **Nuclear Triad**, transitioning from the limited **750-km** range of the **K-15 (Sagarika).**
- **Survival Capability:** Provides India with a credible **second-strike capability**, allowing submarines to strike deep-inland targets while remaining hidden in the deep sea.
- **Operational Flexibility:** Allows nuclear-powered ballistic missile submarines (SSBNs) to operate from safer patrol zones without needing to approach hostile coastlines.

INS VAGSHEER

President Droupadi Murmu created history by undertaking a dive and operational sortie aboard the indigenous Kalvari-class submarine INS Vaghsheer.

Project-75(I): India's Next-Gen Submarine Program

- **Project-75(I), successor to Kalvari-class (P-75),** aims to build six advanced conventional submarines under the Strategic Partnership model, boosting Aatmanirbharta.
- Approved in 1999's 30-Year Plan for 24 subs by 2030, it follows delivery of all six Scorpènes (**Kalvari, Khanderi, Karanj, Vela, Vagir, Vagsheer)** from Mazagon Dock.
- **Key Features:**
  - **Air-Independent Propulsion (AIP)(Fuel-Cell):** Unlike Project-75, these submarines will feature Fuel-Cell-based AIP technology, for 2-week submerged endurance vs. 48-hour snorkeling.
    - Long-range torpedoes, anti-ship missiles, advanced sensors/ECM
  - **Indigenous content:** 45% (1st) to 60% (6th sub)
- **Impact:** Transforms India into **"builder's navy"**, creates MSME supply chain, enhances stealth/land-attack capabilities against regional threats.



EXERCISE DESERT CYCLONE 2025

Exercise Name (Edition)	Participating Countries (Location)	Focus Areas	Type
Desert Cyclone (2nd)	India and the UAE (Abu Dhabi, UAE)	Sub-conventional operations under a United Nations mandate (peacekeeping, counter-terrorism, stability ops). Enhancing interoperability and fostering defence cooperation.	Army

MILITARY EXERCISES

Exercise Name and Edition	Venue	Participating Countries	Remarks
Harimau Shakti (5th)	Mahajan Field Firing Range, Rajasthan, India	Indian Army, Royal Malaysian Army	Focuses on sub-conventional operations in jungle and semi-desert terrain. Counter-terrorism and counter-insurgency drills Joint training such as cordon-and-search missions, heliborne operations, casualty evacuation and live firing.

7 SCIENCE & TECHNOLOGY

BAIKONUR COSMODROME

Recently, during the liftoff of the Soyuz MS-28 mission from Site 31/6 at Baikonur Cosmodrome, a mobile service platform (maintenance cabin) collapsed into the flame trench due to the rocket's exhaust blast. This caused significant damage to the launch pad infrastructure.

About

- **Meaning of Cosmodrome:**
  - A cosmodrome is a specialised spaceport or launch facility for rockets and spacecraft, analogous to an airport or seaport.
  - It is equipped with launch pads, assembly buildings, fuel storage, and control centres for orbital or interplanetary missions.
- **The Mission:** Russian Mission Soyuz MS-28 was launched on November 27, 2025, from Baikonur Cosmodrome, carrying two Roscosmos cosmonauts and one NASA astronaut to the **International Space Station (ISS)**.
- **Baikonur:** The place is located in Kazakhstan, but it is leased by Russia. It has witnessed accidents in the past as well, notably the 1960 Nedelin catastrophe.
  - The **Nedelin catastrophe** (October 1960) was a massive explosion of an R-16 ICBM prototype on the pad at Baikonur, killing 74–126 people.

WHOLE-BODY REGENERATION

New studies show that in some animals, the whole body helps in healing and regrowth.

What is Regeneration

- Regeneration means growing back lost parts of the body. Humans can heal small wounds, but some animals like planarian flatworms and axolotls (a type of salamander) can grow back whole organs, tails, or even their heads.
- Earlier, scientists thought only the injured part worked to regrow. But new research in Cell (2025) found that the entire body communicates and helps in this process, sending signals to repair and rebuild.

How it Happens

- **Neoblasts (in flatworms):** These are special stem cells that can become any type of cell — like muscle, nerve, or skin. When the worm is cut, these cells move to the wound and rebuild missing parts.
- **Blastema (in axolotls):** A small lump of cells that forms at the cut area and later turns into new tissues, bones, and even limbs.

Why it Matters

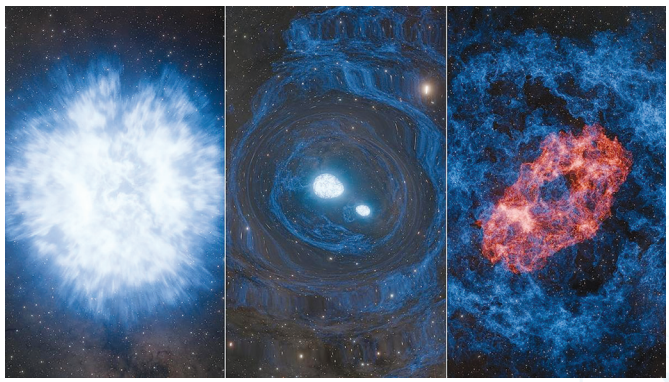
- Studying these animals helps scientists understand how humans might repair organs, heal injuries faster, or even regrow tissues someday using stem cells and regenerative medicine.

SUPERKILONOVA

Scientists saw an extremely bright explosion 1.3 billion light-years away — called a possible superkilonova.

What is a Superkilonova

- A superkilonova is a very rare and powerful cosmic explosion that happens when two **neutron stars** (the super-dense remains of dead stars) crash into each other.
- Normally, when this happens, the event is called a **kilonova** — it releases light and throws out heavy metals like gold and platinum into space.
- But in a superkilonova, some of the material that was thrown out falls back onto the new object formed after the collision. This heats it up even more, making the explosion brighter, bluer, and longer-lasting than a normal kilonova.



Why it is Important

- **Creates Heavy Elements:** The gold and platinum we have on Earth were made in such cosmic explosions.
- **Helps Study Space:** It gives scientists a better understanding of what happens when neutron stars collide.
- **Gravitational Waves:** These explosions also produce ripples in space-time, helping scientists study Einstein's theory of relativity.

- In short, a superkilonova is one of the brightest fireworks of the universe, showing us how stars die, merge, and create the elements we find on Earth.

GHOST PAIRING

The government has warned users about a new cyber trick called "Ghost Pairing" targeting WhatsApp accounts.

What is Ghost Pairing

- Ghost Pairing is a **cyber scam** where hackers take over your WhatsApp or Telegram without stealing your password or SIM card.
- They pretend to be someone you trust — like a friend, bank officer, or government worker — and send a message such as: ***"Hi, check this photo," or "Click here to update your account."***
- When you click the link, it opens a fake WhatsApp Web page. Without knowing, you allow the hacker's device to connect to your account — like sharing your WhatsApp on another phone or computer.

What Happens Next

- The hacker can now read your chats, download photos, and even send messages as you. They might use this to steal money, personal details, or blackmail victims.

How to Protect Yourself

- Never click on unknown or suspicious links.
- Turn on two-step verification in WhatsApp settings.
- Regularly log out of WhatsApp Web after use.
- Always confirm strange messages by calling the person directly.

FINANCIAL FRAUD RISK INDICATOR (FRI)

India has stopped ₹660 crore worth of online fraud in six months using the FRI system.

About

- The FRI is a new tool that helps the government and banks detect risky mobile numbers used in online financial scams.
- It works like a "fraud warning score." Every phone number is checked using data from:
  - The National Cybercrime Reporting Portal,
  - The DoT's Chakshu platform, and
  - Reports from banks, telecom companies, and law enforcement.
- Each number is then given a **risk level** — Medium, High, or Very High — depending on how often it is linked to suspicious activities.

How it Helps

- When a risky number shows up during a transaction, banks or payment apps (like UPI) get an alert. They can then double-check the user, block the payment, or warn the customer before money is lost.

Why it Matters

- Stops scams before they happen.
- Protects digital payments and customer trust.
- Encourages safer use of UPI and online banking.

BLUEBIRD BLOCK-2 SATELLITE

ISRO successfully launched the LVM-3 rocket carrying the BlueBird Block-2 satellite into Low Earth Orbit (LEO).

What is the BlueBird Block-2 Satellite

- The BlueBird Block-2 is a huge **communication satellite** weighing about 6.5 tonnes, built by the U.S. company AST SpaceMobile.
- It orbits close to Earth (within 1,000 km) in the **Low Earth Orbit (LEO)** and is part of a group of satellites that will work together to provide direct mobile connectivity from space.
- This means your smartphone could directly connect to satellites for making calls or using the internet — even in areas without network towers.

Key Uses and Benefits

- **No-coverage areas:** Enables 4G/5G calls and internet in rural, mountain, or ocean regions.
- **Disaster zones:** Helps restore communication when ground networks fail during cyclones, earthquakes, or floods.
- **Global internet access:** Brings connectivity to every part of the world.

Why it's Important for ISRO

- This is ISRO's third commercial launch using its most powerful rocket — LVM-3.
- After Russia's exit and the retirement of Europe's Ariane-5, India has become a key player in affordable satellite launches.
- It shows that ISRO can handle heavy satellites at a lower cost than SpaceX or other global agencies.

ISRO's Future Upgrades

To support upcoming missions like Gaganyaan and India's Space Station, ISRO is:

- Upgrading its cryogenic engines to increase thrust and efficiency.
- Developing semi-cryogenic engines (kerosene + liquid oxygen) to carry heavier satellites and reduce launch costs.

RABIES

India records around 20,000 rabies deaths every year — the highest in the world.

What is Rabies

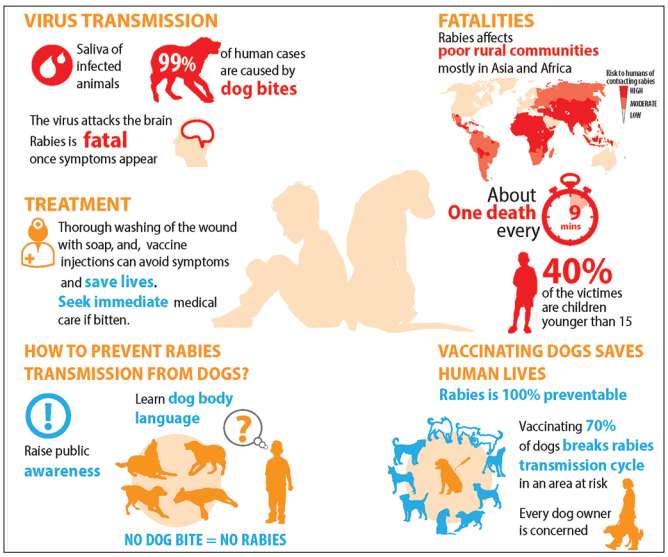
- Rabies is a viral disease that attacks the brain and nervous system, causing severe illness and death once symptoms begin. It is caused by the Rabies virus, which belongs to the Lyssavirus group.
- The disease is found in more than 150 countries, mostly in Asia and Africa, and is considered a neglected tropical disease because it affects poor and rural areas the most.

How does Rabies Spread

- Rabies spreads through the saliva of infected animals, mainly dogs (responsible for almost 99% of human cases).
- People can get infected through bites, scratches, or if the animal's saliva touches eyes, mouth, or open wounds.
- Once symptoms like fever, confusion, muscle spasms, and fear of water appear, the disease is almost always fatal.

India's Efforts to Eliminate Rabies

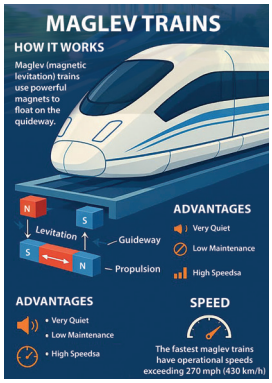
- India has the world's highest number of cases because of stray dog bites and low vaccination.
- The **National Action Plan for Dog-Mediated Rabies Elimination (NAPRE)** aims to make India rabies-free by 2030 through dog vaccination, public awareness, and quick post-bite treatment.



MAGNETIC LEVITATION (MAGLEV) TECHNOLOGY

China set a world record by making a maglev train reach 700 km/h in just 2 seconds.

About



- Maglev stands for magnetic levitation, a technology that makes trains float above the tracks using magnets.
- It works without touching the rails — meaning no friction, no wear and tear, and very high speeds.
- This is possible because magnets with the same poles repel each other.
- By carefully controlling these magnetic forces, the train can be lifted, balanced, and moved forward smoothly.

How it Works

- **Levitation**: Strong magnets lift the train a few centimetres above the track.
- **Guidance**: Magnetic forces keep the train centred on the track.
- **Propulsion**: Electric currents push the train forward at high speed.

Types of Maglev Systems

- **EMS (Electromagnetic Suspension):** Uses electromagnets underneath the train to pull it upward.
- **EDS (Electrodynamic Suspension):** Uses superconducting magnets for lift and stability.

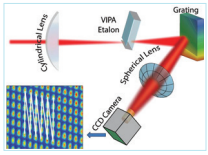
Why it Matters

- **Very Fast:** Can travel faster than 600 km/h.
- **Quiet & Smooth:** No friction means less noise and vibration.
- **Eco-Friendly:** Uses clean electricity and produces no smoke.
- Maglev trains show how science and technology can create faster, cleaner, and safer travel for the future.

FREQUENCY COMBS

Scientists use frequency combs to measure light with great precision, improving atomic clocks and spectroscopy.

What is a Frequency Comb



- A frequency comb is a special **laser tool** that gives off many colours (frequencies) of light, instead of just one.
- These colours are **evenly spaced**, like the teeth of a comb, which is why it's called a "frequency comb."
- A **normal laser** produces light of a **single frequency** (one colour), but a frequency comb produces hundreds or thousands of stable frequencies at once — all perfectly organised.

How it Works

- Frequency combs are made using **mode-locked lasers,** which flash very fast — billions of light pulses per second.
- Each flash contains multiple frequencies, and when scientists compare an unknown light frequency to this pattern, they can find its exact value, just like using a very precise ruler for light.

Why it's Important

- **Atomic Clocks:** Makes timekeeping a hundred times more accurate.
- **Pollution Detection:** Helps find tiny amounts of gases in the air.
- **Space Research:** Measures star movements and finds new planets.
- **Internet & Telecom:** Improves signal speed and stability.
- Frequency combs help scientists study light, time, and the universe more precisely than ever before.

INDIA'S 2030 MALARIA ELIMINATION GOAL UNDER THREAT

A new mosquito species, Anopheles stephensi, is making it harder for India to eliminate malaria by 2030.

Background – India's Goal to End Malaria

- India has made major progress in fighting malaria. Cases fell from 6.4 million in 2017 to just 2 million in 2023, according to the World Health Organization (WHO).
- The Government of India aims to:
  - Eliminate all local malaria cases by 2027, and
  - Make India malaria-free by 2030.
- However, a new threat — a mosquito that thrives in cities — is making this goal difficult to achieve.

What is Malaria

- Malaria is caused by a parasite called Plasmodium, which spreads through the bite of infected female Anopheles mosquitoes.
- There are five parasite species, but Plasmodium falciparum (the most deadly) and Plasmodium vivax (the most common in India) cause most infections.
- **Symptoms:** Fever, chills, muscle pain, and tiredness.
- **Vaccines:** The RTS,S and R21 vaccines, developed and approved by the World Health Organization (WHO), prevent malaria in children caused by Plasmodium falciparum.

The New Threat – Anopheles Stephensi

- This mosquito is not native to India; it originated in West Asia and East Africa.
- It breeds in urban areas, particularly in water tanks, construction sites, and discarded tires, unlike traditional mosquitoes that prefer rural ponds or fields.
- Because it survives well in crowded environments, it is now spreading malaria in major cities such as Delhi, Chennai, and Hyderabad.

Government Efforts

- **National Framework for Malaria Elimination (NFME), 2016:** A roadmap launched by the Ministry of Health and Family Welfare (MoHFW) to end malaria by 2030.
- **Malaria Elimination Research Alliance – India (MERA-India):** A network established by the Indian Council of Medical Research (ICMR) to develop innovative strategies and tools to combat malaria.

Why Malaria Still Spreads

- **Asymptomatic carriers:** People without visible symptoms continue to spread the infection.
- **Cross-border transmission:** Spread from Myanmar and Bangladesh affects northeastern India.
- **Poor sanitation and waste management:** These create ideal mosquito breeding grounds.
- **Healthcare challenges:** Shortages of doctors, insecticides, and testing kits in rural and tribal areas slow progress.

PROTECTING ASTRONAUTS FROM DEADLY SPACE DEBRIS

With growing satellite launches and space missions, the threat from space debris is increasing rapidly.

What is Space Debris

- Space debris, or space junk, refers to non-functional, human-made objects orbiting Earth. These include defunct satellites, used rocket parts, metal fragments, and even paint flakes left after collisions or explosions in orbit.
- **According to NASA, Earth's orbit currently contains:**
  - Over 36,000 large objects (bigger than 10 cm),
  - Nearly 1 million medium fragments (1–10 cm), and
  - More than 130 million tiny particles (smaller than 1 cm).
- Even a small screw traveling at 28,000 km/h can severely damage a spacecraft, pierce solar panels, or endanger astronauts aboard the International Space Station (ISS).

What are Micrometeoroids and Orbital Debris (MMOD)

- **Space threats come from two main sources:**
  - **Micrometeoroids**: Tiny natural rock or dust particles from asteroids and comets, moving at 11–72 km/s.
  - **Orbital Debris**: Man-made junk like broken satellites and rocket pieces, orbiting at about 7–10 km/s.
- Together, these are known as Micrometeoroids and Orbital Debris (MMOD). Both are extremely dangerous because of their high speed and sharp impact force, even when microscopic in size.

Why is Space Debris Dangerous

- Objects in orbit move at enormous speeds — up to 18,000 mph (29,000 km/h), nearly 10 times faster than a bullet. At such velocities, even a small fragment can cause catastrophic damage.
- In 2021, a tiny metal shard hit the ISS's robotic arm, leaving a visible hole. Scientists also warn about Kessler Syndrome — a chain reaction where one collision creates thousands of new fragments, eventually making Earth's orbit too dangerous for future missions.

How are Astronauts and Satellites Protected

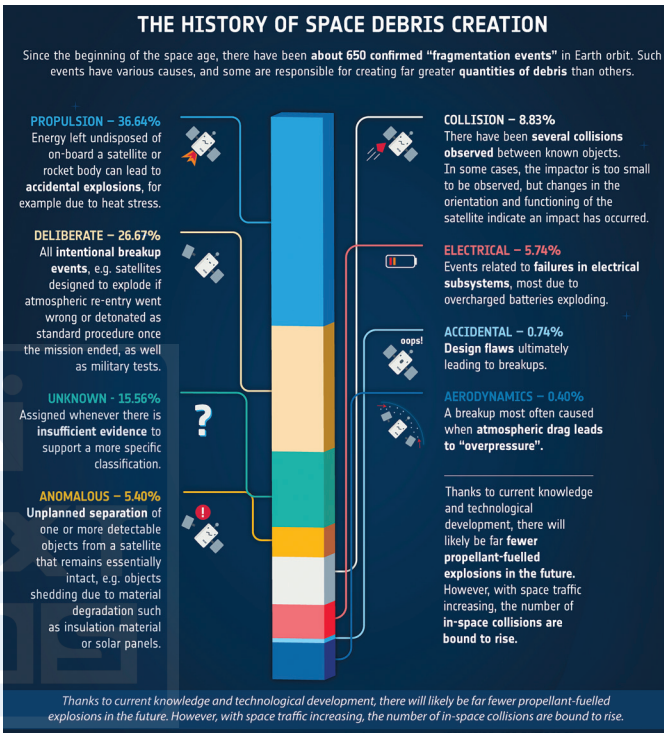
To reduce these risks, space agencies use a combination of engineering and tracking systems:

- **Debris Avoidance Manoeuvres (DAM):** Satellites or space stations slightly change their orbits when a possible collision is detected.
- **Whipple Shields:** Multi-layered barriers made of aluminium, Kevlar, and carbon fiber that absorb and spread out the impact energy of debris.
- **Tracking Systems:** Ground-based radar and telescopes continuously monitor debris larger than 10 cm, sending early warnings to mission control.

Global and Indian Efforts

Efforts are now focused on global cooperation to make orbits safer:

- **Space Liability Convention (1972):** Holds countries legally responsible for damage caused by their space objects.
- **Zero Debris Charter (2023):** The European Space Agency (ESA) and 12 nations aim to make orbits debris-neutral by 2030.
- **Project NETRA (ISRO):** India's early-warning system for tracking space debris and protecting national satellites.
- **IS4OM (2022):** The ISRO System for Safe and Sustainable Operations Management continuously monitors threats and plans safe manoeuvres.



HOW INDIA'S SCIENCE AND TECHNOLOGY ECOSYSTEM STRENGTHENED IN 2025

India's science and technology (S&T) landscape witnessed significant momentum in 2025, marked by improved global rankings, large-scale funding for research and innovation, and advances in frontier technologies.

Rising Global Standing in Science and Innovation

- **Innovation:** India secured the **38th position** in the **Global Innovation Index 2025,** reflecting steady progress among the world's most innovative economies.
- **IPR Filing:** India ranked **6th globally** in **intellectual property filings**, underlining growing innovation output, and also improved in the **Network Readiness Index,** rising from 79th in 2019 to **49th in 2024**.
- **Increasing R&D:** India also placed **third** globally in **research publications**, reinforcing its expanding academic and scientific footprint.

Major Initiatives taken by the Government

- **Research, Development and Innovation (RDI) Scheme:** It was approved with a total outlay of **₹1 lakh crore** over **six years.**
  - Designed to **attract private-sector participation**, the scheme focuses on **research in sunrise sectors** such as AI, quantum technologies, clean energy, biotechnology, space and the digital economy.
- **Anusandhan National Research Foundation (ANRF)** has been established with the ANRF **2023 Act.**
  - **It aims** to seed, grow and promote R&D and foster a culture of research and innovation throughout India's universities, colleges, research institutions, and R&D laboratories.
  - **ANRF will act as an apex body** to provide high-level strategic direction of scientific research in the country as per recommendations of the **National Education Policy (NEP).**
- **Atal Innovation Mission (AIM):** Encourages startups, entrepreneurship, and innovation among students and professionals.
- **Launch of National Missions such as;**
  - **National Quantum Mission** to make India one of the leading nations in the development of Quantum Technologies & Applications *(budget outlay: ₹6,003.65 crore)*.
  - **India Semiconductor Mission** (₹76,000 crore) for building up the semiconductor ecosystem in India.
  - **India AI Mission** to strengthen AI capabilities (budget outlay: ₹ 0,372 crore).
  - **National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS)** strengthened capabilities in robotics, AI, healthcare, cybersecurity, and mining technologies.
- **Innovation, startups and inclusive science:** Through initiatives like **NIDHI (National Initiative for Developing and Harnessing Innovations),** DST expanded startup incubation to **Tier II and III cities**, set up **new incubators and entrepreneur-in-residence centres**, and supported advanced manufacturing and medical device innovation.
- **Research parks** at IIT Delhi, IIT Guwahati, IIT Kharagpur, IIT Kanpur, IIT Chennai, have been established which provide an interface between entrepreneurship and Industry to establish their R&D units in collaboration with students & faculty members of the IITs.

What are the Challenges?

- **Funding Constraints:** Despite robust government support, private sector investment in R&D in India remains limited compared to global benchmarks, constraining large-scale innovation.
- **Talent Retention Challenges:** The **brain drain persists**, as skilled researchers are often drawn abroad by better infrastructure, funding, and career advancement opportunities.
- **Limited University-Industry Collaboration:** Weak links between academia and industry hinder commercialization of research.
- **Skilled Workforce Deficit:** Shortage of trained R&D professionals in deep-tech and interdisciplinary fields.

Way Ahead

- India's concerted efforts in strengthening its research and innovation ecosystem reflect a strategic vision to become a global leader in science and technology.
- India must accelerate its capabilities in frontier technologies to maintain and enhance its global standing.
- Continued focus on **talent retention, technology commercialization, and global partnerships** will ensure that India not only addresses national challenges but also contributes significantly to global scientific progress, driving sustainable growth and technological self-reliance.

GlowCas9

GlowCas9 is a newly engineered variant of the CRISPR Cas9 enzyme that emits light while editing DNA.

About

- GlowCas9 is a bioluminescent Cas9 created at the Bose Institute, Kolkata, by fusing Cas9 with a split nano-luciferase enzyme derived from deep-sea shrimp proteins.

What is CRISPR-Cas9?

- Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) uses a guide RNA to direct the Cas9 enzyme to a specific DNA sequence.
  - Cas9 makes a precise cut **(Molecular Scissor)**, enabling gene correction.
- **Bioluminescent Cas9** opens a new direction for "theratracking" – simultaneously performing therapy and tracking it at the molecular level.

SUPERNOVA STENTS

All India Institute of Medical Sciences (AIIMS), New Delhi, conducted India's first clinical trial of a new and advanced stroke treatment device named the Supernova Stent.

About

- **Strokes:** It occurs when **blood flow to the brain is interrupted** by a clot or vessel rupture, leading to potential brain damage.
- The **Supernova stent-retriever** is an upgraded **clot-retrieval device** that can **remove multiple types of blood clots**, more effectively open blocked arteries, and significantly improve outcomes for stroke patients.
- The **GRASSROOT trial** (Gravity Stent-Retriever System for Reperfusion of Large Vessel Occlusion Stroke), led by AIIMS Delhi across eight Indian centers, confirmed the device's safety and efficacy in real-world settings.

FDA APPROVES TWO ORAL THERAPIES TO TREAT GONORRHEA

The U.S.'s Food and Drug Administration recently approved two new oral medicines to treat gonorrhea.

About

- Gonorrhoea is a preventable and curable sexually transmitted infection caused by the bacterium Neisseria gonorrhoeae.
- In 2020 there were an estimated 82.4 million new infections among adults globally.
- Antimicrobial resistance to gonorrhoea is a serious and growing problem, rendering many classes of antibiotics as ineffective with the risk of becoming untreatable.
- **Transmission:** Unprotected sexual contact and can be passed from a pregnant mother to her baby.
- **Symptoms:**
  - **Men:** Painful urination, pus-like discharge.
  - **Women:** Often asymptomatic; may cause pelvic pain, discharge.
- **Diagnosis:** Molecular tests, Gram stain microscopy.

RESPOND BASKET 2025

Recently, Indian Space Research Organisation (ISRO) launched the RESPOND Basket 2025.

RESPOND Basket 2025

- RESPOND stands for **Sponsored Research** by the **Department of Space (DoS)**, a long-standing framework to support space-relevant research in universities and R&D institutions.
- The **RESPOND Basket** comprises **priority space research problems** identified by various ISRO and DoS centres.
- It supports ISRO's upcoming projects, including Bharatiya Antariksh Station, Chandrayaan-4, Gaganyaan missions, Venus orbiter, and a human Moon landing.

Eligibility and Submission

- Open to faculty members, scientists, and research groups from recognised universities and academic/R&D institutions across India.
- Proposals must be submitted online through the **I-GRASP portal.**

Significance

- Reinforces **ISRO–academia partnerships**, essential for mission success and long-term innovation.
- Promotes **indigenous R&D** and supports India's strategic goal of being a global leader in space technology.

ANDHRA'S RARE EARTH CORRIDOR

Andhra Pradesh's 974-km-long coastline has gained strategic importance due to large Reserves of Rare Earth Elements (REEs) embedded in beach sand minerals.

What is Andhra's Rare Earth Corridor?

- A continuous mineral-rich belt along Andhra Pradesh's coast from **Srikakulam (north) to Nellore (south).**
- **Rich in beach sand minerals such as:**
  - **Monazite** (primary source of REEs and thorium)
  - Ilmenite, rutile, zircon, garnet and sillimanite
- **Andhra Pradesh holds 30–35% of India's total monazite reserves**, out of 12–15 million tonnes nationally, making it one of India's most underutilised critical mineral zones.
- **Monazite:** Found mainly in beach sand deposits of states like Kerala,Tamil Nadu, Odisha and Andhra Pradesh.
  - India has one of the world's largest monazite reserves

What are Rare Earth Elements (REEs)?

- They are a group of 17 elements, 15 lanthanides + scandium + yttrium.
- Though geologically abundant, they are termed "rare" because:
  - They occur in low concentrations, and
  - Their extraction and processing are complex, capital- and technology-intensive.
- **REEs are classified into:**
  - **Light REEs (LREEs):** lanthanum, cerium, neodymium, praseodymium, samarium, etc.
  - **Heavy REEs (HREEs):** Dysprosium, terbium, yttrium, etc.

Why REEs Matter?

- **Clean Energy Transition:** Essential for wind turbines, electric vehicles, solar panels, and energy-efficient lighting. Neodymium and dysprosium are critical for permanent magnets.
- **Defence and National Security:** Used in missile guidance systems, radar and sonar, fighter aircraft components, secure communication systems.
- **Digital and High-Tech Industries:** Used in smartphones, semiconductors, data centres and medical imaging devices (MRI, X-rays).

Conclusion

- Andhra Pradesh's Rare Earth Corridor represents a strategic opportunity for India to secure critical mineral supplies, reduce external dependence, and strengthen its position in emerging clean energy and high-tech industries.
- Unlocking this potential will require a careful balance between economic ambition, environmental sustainability, and national security imperatives.

9 CULTURE & HISTORY

ELLORA CAVES

Scottish historian William Dalrymple urged the Maharashtra government to promote lesser-known heritage sites near the Ellora Caves.

About

- Located in Aurangabad district**, Maharashtra**
- A UNESCO World Heritage site.
- The cave complex was carved between **600 CE and 1000 CE**, spanning the rule of the **Chalukyas, Rashtrakutas, and Yadavas.**
- **Religious Pluralism and interreligious harmony:** The complex comprises **34 major caves** (12 Buddhist, 17 Hindu, 5 Jain caves).

Religion	Cave No.	Period	Key Features
Buddhist	1–12	5th–7th CE	Viharas, Chaityas, monasteries
Hindu	13–29	7th–9th CE	Shaiva, Vaishnava themes
Jain	30–34	9th–10th CE	Tirthankaras, detailed ornamentation

Key Architectural Features

- **Kailasa Temple (Cave 16):** Excavated **top-down** from a **single monolithic basalt rock,** dedicated to the Hindu god Lord Shiva. No use of bricks or mortar.
- Its design replicates Mount Kailash, Lord Shiva's abode, and features intricate **Dravida architecture** with multi-level mandapas, sculptural panels, and detailed narrative friezes.
- **Buddhist Caves:** These include monasteries (viharas) and prayer halls (chaityas). **Cave 10, the Vishvakarma Cave,** features a vaulted ceiling and an intricately carved seated Buddha.
- **Jain Caves:** Built during the later phase of Ellora's development.
- Known for **delicate carvings, Tirthankara figures,** and themes of austerity and cosmic order.
- **Cave 32 (Indra Sabha)** is notable for its richly sculpted pillars and ceiling panels.

Cultural Importance

- Symbol of religious harmony
- Centre of pilgrimage
- Influence on later temple architecture

HORNBILL FESTIVAL

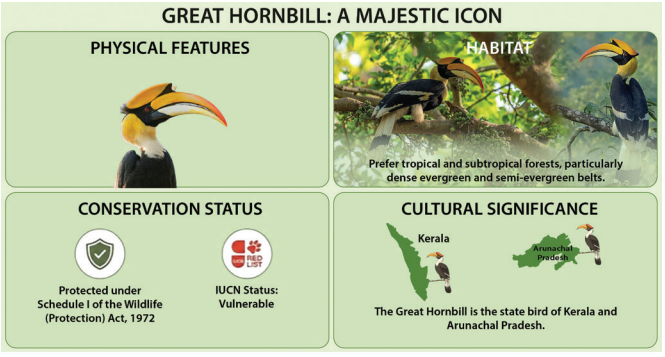
The 26th edition of Nagaland's Hornbill Festival, the "Festival of Festivals," began at Naga Heritage Village, Kisama (Kohima), coinciding with Statehood Day on December 1.

About

- Held annually in the first week of December at Kisama near Kohima.
- Organised by Govt of Nagaland (Nagaland Tourism)
- Promoted under **Incredible India campaign** (Ministry of Tourism, Government of India)
- It was conceived in 2000 to promote unity and preserve ethnic heritage.
- It highlights both traditional and contemporary Naga culture through music, crafts, cuisine, and folklore.
- Tribes Participating: All 16 major Naga tribes (Angami, Ao, Sema, Lotha, Konyak, Chakhesang, Phom, etc.)

Significance

- The festival has transformed Nagaland's cultural tourism landscape, offering visitors a unique opportunity to experience the diversity and distinctiveness of Naga life in one place.
- Promote tribal unity. Symbol of Naga identity
- A Platform for indigenous arts. Supports local artisans.



MAHAD SATYAGRAHA

Mahad marks the birthplace of one of India's first human rights movements initiated by Dr. B. R. Ambedkar.

About Mahad Satyagraha (1927)

- It was launched by Dr. B.R. Ambedkar on 20 March 1927 at Chavdar Tale, Mahad (Maharashtra), was the first major civil rights movement of Dalits.

- Its objective was to secure the right of untouchables to access public drinking water denied due to caste discrimination.
- Ambedkar, along with key associates such as Anandrao Chitre, Bapu Sahastrabuddhe, Sambhaji Gaikwad and Ramchandra More, led thousands to **drink water from the public tank**, asserting that **essential resources cannot be monopolised by upper castes.**
- On 25 December 1927, Ambedkar publicly **burned the Manusmriti**, symbolically rejecting caste-based hierarchies.

Significance:

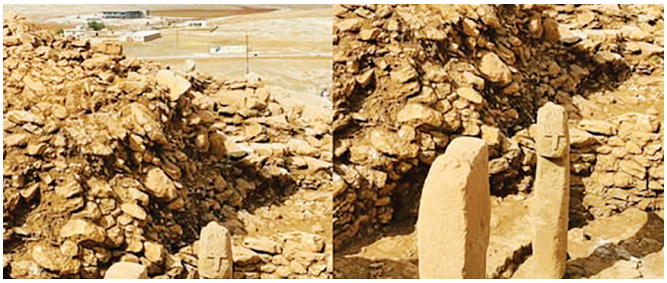
- The movement conveyed a powerful ideological message that water is a basic human right, not a caste privilege, challenging the social exclusion embedded in untouchability.
- In 1937, the Bombay High Court affirmed that the tank was public, validating the satyagraha.
- It marked a shift from reform to rights-based struggle.
- It laid the foundation for later Dalit movements.

TURKIYE'S "STONE HILLS" PROJECT

Recent archaeological discoveries on Turkiye's southeastern hills reveal life 11,000 years ago, during the emergence of early settled communities.

About

- Findings are part of the "Stone Hills" project (launched 2020), covering 12 sites in **Sanliurfa province**—described as the **world's Neolithic capital.**
  - **It includes Göbekli Tepe,** a UNESCO World Heritage Site and oldest known **megalithic structures in Upper Mesopotamia.**



Stone Age

- It is a prehistoric period marked by the use of stone tools, divided into three major periods: **Paleolithic, Mesolithic, and Neolithic.**
- **Paleolithic Age:** Also known as the Old Stone Age.
  - Began around 2.6 million years ago and lasted until around 10,000 BCE.
  - Humans were hunter-gatherers, using stone tools for hunting, butchering, and food processing.
- **Mesolithic Age:** Occurred between 10,000 BCE and 5,000 BCE (varies by region).
  - Characterized by specialized tools, environmental adaptations, and the early domestication of plants and animals.
- **Neolithic Age:** Began around 12,000 years ago and ended between 4500 BCE and 2000 BCE.
  - Marked by the adoption of agriculture, animal domestication, and settled communities.
  - Led to the development of pottery, weaving, and complex social structures.
  - Agriculture revolutionized human societies and led to the rise of civilizations.
  - Transition → food gathering to food producing
  - **Neolithic settlements in India:**
    - Burzahom and Gufkral (Kashmir)
    - Koldihwa and Mahagara (Uttar Pradesh)
    - Chirand (Bihar)
    - Utnur (Andhra Pradesh)
    - Daojali Hading (Assam)

70TH MAHAPARINIRVAN DIWAS

On December 6, 2025, India observed the 70th death anniversary (Mahaparinirvan Diwas) of Dr. Bhimrao Ramji Ambedkar.

Significance of Mahaparinirvan Diwas

- It commemorates the **death anniversary of Bharat Ratna Dr. BR Ambedkar**, the chief architect of the Indian Constitution.
- A tribute to Ambedkar's role in social justice, equality and constitution
- It highlights contribution to Dalit rights and eradication of caste discrimination.
- It encourages reflection on the Ambedkarite values in contemporary India.

About Dr. B.R. Ambedkar

- He was born on 14 April 1891, in Mhow(Madhya Pradesh)
- **Family:** Mahar caste, socially marginalized
- Faced social discrimination since childhood.
- First Law Minister of independent India (1947–51)
- He recognized that caste oppression was fracturing the nation and sought transformative measures to address these deep-rooted injustices.
- He proposed revolutionary steps to empower the oppressed, including reservations in education, employment, and politics.
- **Social Reform and Dalit Movement:**
  - rights of Dalits (Scheduled Castes)
  - Launched the newspaper **Mooknayaka (Leader of the Silent)** to amplify the voices of the downtrodden.
  - He established the **Bahishkrit Hitkarini Sabha (Outcastes Welfare Association)** in **1924** to spread education, improve economic conditions, and address societal inequalities.

- Organised the **Mahad March (1927)** for access to public water and the temple entry movement at **Kalaram Temple (1930)** challenging caste hierarchies and priestly dominance.
- Initiated **Poona Pact of 1932**, which replaced separate electorates with reserved seats for Dalits in legislatures.

- **Economic Vision:**
  - His ideas were instrumental in framing the guidelines for the Reserve Bank of India (RBI) Act, 1934, and influencing the creation of the RBI itself.
  - He championed systemic advancements such as the foundation of Employment Exchanges, the establishment of the **National Power Grid System,** and pivotal projects like the **Damodar Valley Project, Hirakud Dam Project**, and **Sone River Project,** showcasing his foresight in infrastructure and resource management.
- **Contributions to Indian Constitution:**
  - As **Chairman of the Constitution Drafting Committee,** Ambedkar played a pivotal role in crafting the Indian Constitution, presenting a draft in 1948 that was adopted in 1949 with minimal changes.
- **Organizations founded by Ambedkar:**
  - **Bahishkrit Hitakarini Sabha (1924)** – his first major organization for education and socio-economic upliftment of the "depressed classes".
  - **Independent Labour Party (1936)** – a political party to represent workers and oppressed communities in colonial India.
  - **All India Scheduled Castes Federation (1942)** – a political organization to represent Scheduled Castes at the all-India level.
- **Major works of Ambedkar:**
  - Annihilation of Caste (1936)
  - Castes in India: Their Mechanism, Genesis and Development (1916)
  - Who Were the Shudras? (1948)
  - The Buddha and His Dhamma (published posthumously, 1957)
  - Buddha or Karl Marx
  - **The Problem of the Rupee:** Its Origin and Its Solution (1923)
  - Administration and Finance of the East India Company.
- His emphasis on equality and justice ensured provisions that protected the rights of Scheduled Castes, Scheduled Tribes, and Other Backward Classes, laying the groundwork for an inclusive democracy.

UNESCO'S 20TH SESSION

India is hosting the 20th session of the UNESCO Intergovernmental Committee for Safeguarding of the Intangible Cultural Heritage, 2025 in Red Fort complex, New Delhi.

About the Intangible Cultural Heritage (ICH)

- This will be the **first time** that India hosts the ICH Committee session.
- **Ministry of Culture and Sangeet Natak Akademi** are the nodal agencies for hosting the Session.
- It includes the practices, knowledge, expressions, objects, and spaces that communities see as part of their cultural identity.
  - Passed down over generations, this heritage evolves, strengthening cultural identity and appreciation of diversity.
- **Historical Background:** For the Safeguarding of ICH, UNESCO adopted the **2003 Convention** during its 32nd General Conference in Paris.
  - India ratified the convention in 2005.

Significance of Intangible Cultural Heritage

- **Preserves Cultural Identity and Continuity:** Intangible heritage anchors communities to their roots, reinforces identity, and strengthens belonging across generations.
- **Promotes Social Cohesion and Harmony:** Shared cultural practices create a sense of collective memory and mutual respect.
- **Supports Livelihoods:** Protecting ICH helps sustain rural economies, promotes cultural tourism, and creates employment opportunities.
- **Preserves Traditional Knowledge Systems:** Indigenous ecological knowledge, healing practices, agricultural wisdom, and craftsmanship offer sustainable solutions relevant for contemporary challenges such as climate change and biodiversity loss.
- **Intergenerational Learning:** ICH carries values, ethics, local histories, and skills that enrich curricula, build cultural literacy, and strengthen intergenerational bonding.
- **Boosts Cultural Diplomacy and Soft Power:** Yoga, classical arts, festivals, and traditional crafts enhance India's global cultural presence, build goodwill, and strengthen international relationships.

Functions of the Intergovernmental Committee

- The Intergovernmental Committee for Safeguarding of the ICH **advances the objectives of the 2003 Convention** and ensures their **effective implementation** across Member States.
- **The committee:**
  - **Prepares and submits** to the General Assembly the draft plan for the use of the Intangible Cultural Heritage Fund.
  - **Examines periodic reports** submitted by States Parties and compiles summaries for the General Assembly.
  - **Evaluates requests from States Parties** and makes decisions regarding, Inscription of elements on UNESCO's ICH Lists (as per Articles 16, 17 and 18).

India's Intangible Cultural Heritage Inscribed by UNESCO	
Year	**Element**
2025	Deepavali
2024	Nawrouz / Novruz / Nowrouz / Nauryz / Nooruz / Navruz / Nevruz
2023	Garba of Gujarat
2021	Durga Puja in Kolkata
2017	Kumbh Mela
2016	Yoga
2014	Traditional brass and copper craft of utensil making among the Thatheras of Jandiala Guru (Punjab)
2013	**Sankirtana:** Ritual singing, drumming and dancing (Manipur)
2012	**Buddhist chanting of Ladakh:** Recitation of sacred Buddhist texts
2010	**Chhau dance:** Kalbelia folk songs and dances (Rajasthan) **Mudiyettu:** Ritual theatre and dance drama (Kerala)
2009	**Ramman:** Religious festival and ritual theatre (Uttarakhand (Garhwal Himalayas))
2008	➲ Kutiyattam, Sanskrit theatre (Kerala) ➲ Tradition of Vedic chanting ➲ **Ramlila:** traditional performance of the Ramayana

C. RAJAGOPALACHARI

PM Narendra Modi paid tribute to C. Rajagopalachari popularly known as Rajaji on his birth anniversary (10th December).

About

➲ **Early Life and Education:**
- Completed Bachelor of Law (1899) and began practicing law in Salem.
- Early political consciousness was shaped by Curzon's Partition of Bengal (1905) and Tilak's call for Swaraj.

➲ **Contributions to Freedom's Struggle:**
- He was a close associate of **Mahatma Gandhi.** Gandhi called him **"keeper of my conscience".**
- Edited Gandhi's journal **Young India** during Gandhi's imprisonment.
- He left his legal career in 1919 and participated in protests against the Rowlatt Act(1919), the Non-Cooperation Movement (1920–22), the Vaikom Satyagraha (Kerala caste protest), and the Civil Disobedience Movement & Salt Satyagraha (1930).
- Led the **Vedaranyam Salt Satyagraha (1930)** in the Madras region, parallel to Gandhi's Dandi March.
- He was imprisoned five times between 1912 and 1941 for his role in the freedom struggle.
- After Quit India Movement, **published "The Way Out"**, proposing the **C. R. Formula** to resolve the constitutional deadlock with the Muslim League over Pakistan.

➲ **Post-Independence Contributions:**
- Appointed Governor of West Bengal and later succeeded Lord Mountbatten as Governor-General of India (Jun 1948–26 Jan 1950)
- The only Indian and last person to hold this constitutional office.
- Office of Governor-General abolished from 26 Jan 1950 when India became Republic.
- Worked to protect India's secular fabric and integrate Muslims into the national mainstream.
- Served as Union Home Minister after Sardar Patel's death; contributed to national integration & early planning processes, including the First Five-Year Plan.
- **Founded Swatantra Party (1959):**
  - ***Ideology:*** Free enterprise, limited government, anti-centralisation, economic liberalism.
  - Challenged Congress dominance in 1960s elections.

➲ **Literary & Cultural Contributions:** Mahabharata & Ramayana translations in English and Tamil.
- **Hinduism:** Doctrine & Way of Life

➲ **Legacy:** He was awarded the Bharat Ratna in 1954 for his contributions to politics, literature and public service.

DR RAJENDRA PRASAD

The President of India, paid tributes to Dr Rajendra Prasad, the first President of India, on his birth anniversary.

Early Life and Education

➲ **Birth:** He was born in 1884 (Ziradei, Siwan district, Bihar)

➲ **Early Profession:** Practised law at Calcutta and Patna High Courts.

➲ **Journalism:** Founded/edited Desh (Hindi), wrote for Searchlight (English).

Role in the Freedom Movement

➲ Joined Indian National Congress in 1911.

➲ **Champaran Satyagraha (1917):** Worked with GandhiJi for peasants' rights

➲ **Non-Cooperation Movement (1920–22):** Gave up his successful law practice and founded the **National College in Patna (1921).**
- Stood firmly with Gandhiji after the **Chauri Chaura** incident.

➲ **Salt Satyagraha (1930):** Led the Salt Satyagraha in Bihar at **Patna's Nakhas Ponds,** where volunteers made salt and courted arrest.

- **Congress President:**
  - He presided over the Bombay session of the INC in **1934.**
  - After Subhash Chandra Bose resigned as Congress President in 1939, he was re-elected to the position.
- In July 1946, when the **Constituent Assembly** was established to frame the Constitution of India, he was elected its **President.**
- **Interim Government**: Minister for Food & Agriculture, 1946.
  - Promoted Grow More Food slogan during food scarcity challenges.
- He was awarded the **Bharat Ratna in 1962** for his exemplary service.

Role in the Constitution-Making

- **President of Constituent Assembly:** Guided drafting of the Constitution
- Committees of Constituent Assembly chaired by Rajendra Prasad
  - Committee on the Rules of Procedure
  - Steering Committee
  - Finance and Staff Committee
  - Ad hoc Committee on the National Flag

Literary Contributions

- He documented his experiences and political insights in several influential works:
  - Satyagraha at Champaran (1922)
  - India Divided (1946)
  - Atmakatha (1946)
  - Mahatma Gandhi and Bihar, Some Reminiscences (1949)
  - Bapu Ke Kadmon Mein (1954)
  - Bhartiya Sanskriti aur Khadi ka Arthashastra

DEEPAVALI

Deepavali was inscribed on UNESCO's Representative List of Intangible Cultural Heritage(ICH) during the 20th Session of the Intergovernmental Committee held in New Delhi, 2025.

About UNESCO's Intergovernmental Committee

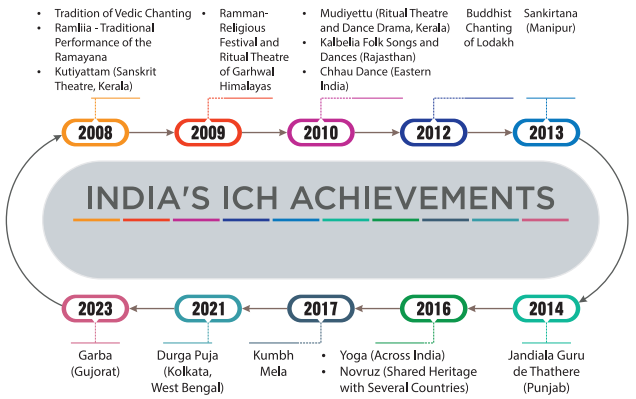
- **Composition:** Comprises 24 Member States elected by the General Assembly for 4-year terms (half renewed biennially) based on equitable geographical representation across UNESCO's 6 regions.
- **Core Functions:**
  - Promotes the 2003 ICH Convention objectives.
  - Examines State Party nominations for **Representative List (e.g., Deepavali 2025),** Urgent Safeguarding List, and programmes/projects.
  - Grants assistance and manages the **Intangible Cultural Heritage Fund.**
- India served three terms on the Intergovernmental Committee.

About Deepavali

- **Celebration Date:** Observed on Kartik Amavasya (Oct/Nov); homes, streets, temples are decorated with oil lamps (diyas).
- **Key Days:** Begins with **Dhanteras** (prosperity purchases), followed by **Naraka Chaturdashi** and peaks on Lakshmi-Ganesha Puja (Deepavali).

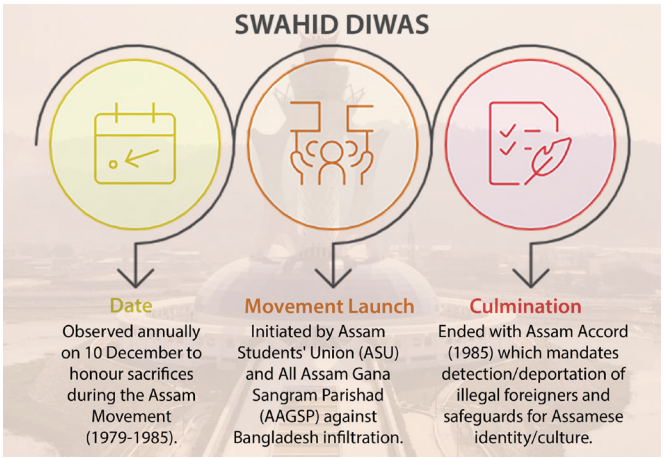
UNESCO Intangible Cultural Heritage (ICH)

- **Definition:** ICH encompasses **practices, knowledge, expressions, objects, and spaces** that communities recognise as integral to their cultural identity, transmitted across generations while evolving to reinforce diversity.
- **Historical Background:** UNESCO adopted the 2003 Convention for Safeguarding ICH at its 32nd General Conference in Paris; India ratified in 2005.
- **India's ICH Achievements**
  - **UNESCO Inscriptions:** 16 elements on the Representative List.



SWAHID DIWAS

Prime Minister Narendra Modi paid tribute to Assam Movement martyrs on Swahid Diwas (10 December).



PREAH VIHEAR TEMPLE DISPUTE

India raised concerns over reported damage to conservation facilities at the Preah Vihear temple complex near the Cambodia-Thailand border.

About

- **Location & Dedication:** Ancient Hindu Shiva temple situated in Cambodia, atop Dângrêk Mountains along the Thailand border.
- **Historical Period:** Constructed primarily during the Khmer Empire of Suryavarman I & II (9th-12th centuries CE).
- **UNESCO Status:** Described as an outstanding masterpiece of **Khmer architecture**. Inscribed as a World Heritage Site in 2008 (Cambodia); site of ICJ dispute (1962 ruling favouring Cambodia).
- **Distinct Features:**
  - **Classical Khmer architecture,** which is exemplified by its unique 800m north-south axis (unlike typical east-facing Khmer temples), features five successive gopuras (entrance towers).
  - **Sandstone blocks** forming corbelled roofs, naga balustrades, and multi-tiered platforms symbolising **Mount Meru.**

SARDAR VALLABHBHAI PATEL

PM Narendra Modi paid tributes on the 75th death anniversary (15 Dec 1950) of India's first Deputy PM & Home Minister.

Key Profile

- **Birth & Roles:** Born 31 Oct 1875; served as independent India's first Deputy PM & Home Minister.
- **National Integration:** Architect of India's unification (562+ princely states); key force behind the establishment of modern IAS & civil services.
- **Constitutional Committees:** Chaired Advisory Committee on Fundamental Rights, Committees on Minorities, Tribal Areas, and Provincial Constitution committees.
- **Highest Honour:** Posthumously awarded Bharat Ratna (1991).

Freedom Struggle Contributions

- **Kheda Satyagraha (1917):** Led Gujarat peasants against British revenue taxes alongside Gandhi.
- **Non-Cooperation (1920-22):** Recruited 3 lakh members, raised ₹15 lakh; promoted Khadi & British goods boycott.
- **Bardoli Satyagraha (1928):** Spearheaded no-tax campaign during famine, earning "Sardar" title.
- **Civil Disobedience (1930-34):** Key participant in Salt Satyagraha against British salt monopoly.
- **Quit India (1942):** Organised nationwide strikes, tax boycotts, civil service shutdowns.

Additional Information

- **Rashtriya Ekta Diwas**: National Unity Day is celebrated annually on 31 October since 2014, marking Sardar Patel's birth anniversary to promote national integration.
- **Statue of Unity:** World's tallest statue (182m) unveiled on 31 Oct 2018 at Kevadia, Gujarat, on Patel's 143rd birth anniversary.
- **Civil Services Day:** Observed on 21 April, commemorating Patel's 1947 address to independent India's first batch of civil servants atthe IAS Officers' Conference.

BISON HORN MARIA DANCE

A commemorative postage stamp was issued in honour of King Perumbidugu Mutharaiyar II (Suvaran Maran) by Vice President C. P. Radhakrishnan.

About

- Traditional Bison Horn Maria dance was performed at the village festival in Judiya Para, Bastar, Chhattisgarh.
- **Performing Community:** Dandami Madia (Maria/ Gaur Maria) tribes of Bastar region of Chhattisgarh.
  - Dandami Madia are part of the larger Gond tribal tradition of central India.
- **Occasion & Participants:** Both men and women dance during village festivals and major community events.
- **Male Costumes:** Bamboo horn-shaped headgear adorned with bison horns, feathers, shells, and colourful cloth strips.
- **Female Attire:** Brass chaplets and heavy traditional necklaces.
- **Musical Instruments: Log drums** worn around neck for rhythmic accompaniment.
- **Dance Movements:** Men imitate bison charging/hunting; women perform synchronized stick dances alongside.
- **Ritual Elements:** Chants invoke **Budhadev** and **Danteshwari Mai** deities for spiritual blessings.

Perumbidugu Mutharaiyar

- **Dynasty & Reign:**
  - **Lineage:** Mutharaiyar ruler (705–745 CE), Pallava feudatory under Nandivarman II.
  - **Region:** Central Tamil Nadu; capital at Tiruchirappalli.
- **Temple Architecture:**
  - **Early Builders:** Pioneered rock-cut & structural temples in Tamil Nadu.
  - **Legacy:** Influenced early Chola styles, bridging Pallava-Chola traditions.
- **Cultural Patronage:**
  - **Religious Policy:** Promoted Shaivism amid Hindu revival vs Jain/Buddhist influence.
  - **Pluralism:** Hosted Jain debates **(Acharya Vimalachandra)** in the period of revival of Hinduism; supported Tamil literature.
  - **Social Legacy**: Icon for Mutharaiyar community (MBCs in Tamil Nadu).

GOA LIBERATION DAY

December 19 commemorates Goa's liberation from 451 years of Portuguese colonial rule through Operation Vijay.

Portuguese Conquest (1510)

- **Initial Capture: Albuquerque** seized Goa with local chieftain **Timoji's** help.
- **Recapture & Victory: Adil Shah** retook it; Albuquerque returned with reinforcements, decisively defeating **Bijapur** forces.
- **Success Factors:** Superior naval power/artillery, Bijapur's weak control, local support, Albuquerque's leadership.

Colonial Impact

- Marked the start of European territorial colonialism in India; Goa evolved as a **trade, administration, and Christianity hub.**
- Goa was the first captured and last liberated European territory.

Goa Liberation Movement

- Post-1947, India sought diplomatic handover of Goa; Portugal refused, sparking the **Goa Liberation Movement.**
- **Operation Vijay:**
  - **Execution:** 36-hour tri-service coordinated assault (air/sea/land) of Indian Armed Forces.
  - **Outcome:**
    - Portuguese surrendered **(19 December 1961)**;
    - Goa, Daman, and Diu were integrated with the rest of India as a Union Territory.
    - Goa achieved statehood in **1987** as the **25th state of India.**

Notable Leaders of the Goa Liberation Movement

- **Tristao de Braganca Cunha:** Regarded as "Father of Goan Nationalism"; founded the Goa Congress Committee.
- **Juliao Menezes:** Launched **Gomantak Praja Mandal** for promoting nationalism.
- **Libia Lobo Sardesai:** Ran Voice of Freedom radio; later became the first Tourism Director for Goa, Daman and Diu (Padma Shri 2025).
- **Purushottam Kakodkar:** Established the Margao ashram as a freedom fighters' hub.

CHAUDHARY CHARAN SINGH

PM Modi recently paid tribute to former Prime Minister and Bharat Ratna Chaudhary Charan Singh on his birth anniversary, observed annually as Kisan Diwas (since 2001).

Early Life and Education

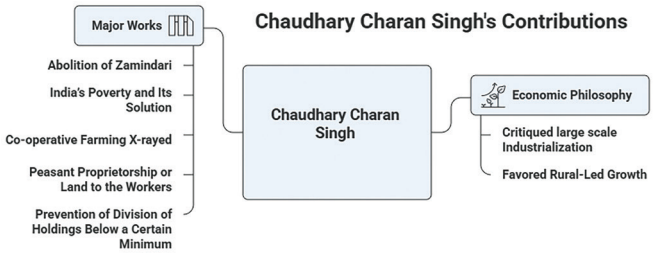
- **Peasant Roots:** Born on 23 December 1902 in Meerut, UP; his rural upbringing deeply influenced his later focus on agrarian economics.
- **Academic Background:** A science graduate with a post-graduation from Agra University, he was also a trained lawyer who practiced in Ghaziabad and Meerut.

Political Career and Leadership

- **Legislative Journey:** First elected to the U.P. Legislative Assembly in 1937; he represented the **Chhaprauli** constituency for multiple terms.
- **Prime Ministership:** Served as the 5th PM of India (1979–80), leading a coalition government focused on rural interests.

Key Reforms and Contributions

- **Land Reforms:** Instrumental in drafting the **Debt Redemption Bill (1939)** and the **U.P. Zamindari Abolition Act.**
- **Policy Vision:** Advocated for the Land Holding Act (1960) to ensure equitable land distribution and peasant proprietorship.
- His Birthday is celebrated as **Kisan Diwas** across the country.
- In 1938, introduced the Agriculture Produce Market Bill to protect the interest of farmers from the greed of traders.
- Authored several books including abolition of zamindari, co-operative farming X-rayd & India's poverty & its solution.



NMHC AT LOTHAL IN GUJARAT

India and the Netherlands have signed a Memorandum of Understanding (MoU) to strengthen cooperation in maritime heritage, marking a step toward the development of the National Maritime Heritage Complex (NMHC) at Lothal, Gujarat.

About NMHC

- **Vision:** An international-standard cultural destination showcasing India's 5,000-year maritime history from the Indus Valley Civilization to the modern era.
- **Location:** Situated near the archaeological site of **Lothal (Saragwala village, Gujarat).**
- **Administration:** The **Ministry of Ports, Shipping & Waterways (MoPSW)** serves as the nodal ministry, with the **Indian Ports Association (IPA)** acting as the nodal executing agency.

Historical Significance of Lothal

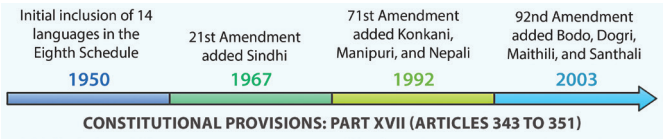
- **The Ancient Port:** Dating to 2400 BCE, Lothal (meaning "the mound of the dead,") was a major Harappan urban center and the world's oldest known artificial dockyard, connected to the Sabarmati River.
- **Economic Hub:** Acted as a vital node for overseas trade (Mesopotamia and Egypt) and inland commerce.
- **Archaeological Markers:** Noted for its advanced dual-town planning (Acropolis and Lower Town), sophisticated drainage, massive granaries, and a specialized bead-manufacturing factory.

CONSTITUTION OF INDIA RELEASED IN SANTHALI LANGUAGE

President Droupadi Murmu recently released the Santhali translation of the Constitution, written in the Ol Chiki script, to enhance constitutional literacy among tribal communities.

Santhali Language & Script

- **Official Recognition:** Santhali was inducted into the Eighth Schedule via the 92nd Amendment Act, 2003, alongside Bodo, Dogri, and Maithili.
- **Geographic Spread:** It is a primary Austroasiatic language spoken by tribal populations across Jharkhand, Odisha, West Bengal, and Bihar.
- **Script:** While it can be written in various scripts, Ol Chiki (created by Pandit Raghunath Murmu) is its unique indigenous script.



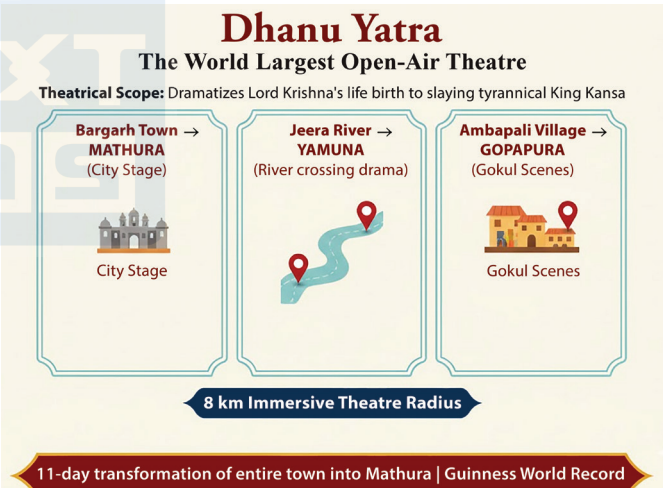
Current Status: 8th Schedule currently comprises 22 languages

- Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili, and Dogri.
- Notably, **English** is not included in the Eighth Schedule.

DHANU YATRA

The annual Dhanu Yatra festival recently commenced in Bargarh, Odisha.

About



Achievement

- **Global Recognition:** Spanning an 8-km radius, it is officially recognized by the Guinness World Records as the world's largest open-air theatre.
- **National Status:** Owing to its cultural significance and scale, the Government of India has accorded it National Festival status.

RAKHIGARHI

The Central Government has allocated Rs 500 crore in the Union Budget for the development of Rakhigarhi, a site of the ancient Harappan civilisation.

Objective

- Recent initiatives aim to develop Rakhigarhi as a world-class archaeological destination, showcasing India's deep-rooted urban heritage on the global stage.

MAJOR HARAPPAN SITES	
Site	**Present Day Location**
Harappa	Punjab, Pakistan
Mohenjo-Daro	Sindh, Pakistan
Dholavira	Kutch, Gujarat
Kalibangan	Rajasthan
Lothal	Gujarat
Rakhigarhi	Haryana
Chanhudaro	Sindh, Pakistan
Ganweriwala	Punjab, Pakistan
Sutkagendor	Baluchistan, Pakistan
Alamgirpur	Uttar Pradesh

About Rakhigarhi

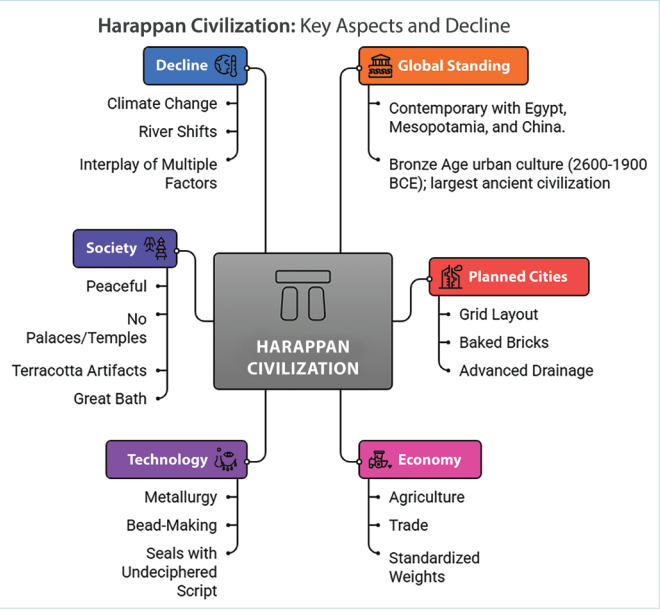
- **Location:** Situated in the **Hisar** district of Haryana, the site is nestled within the **Ghaggar-Hakra** river plain.
- **Scale:** It is recognized as the largest Harappan site in the Indian Subcontinent, surpassing even Mohenjo-daro in total area.
- **Discovery:** The site was brought to prominence through excavations led by **Amarendra Nath of the Archaeological Survey of India (ASI).**

Key Archaeological Findings at Rakhigarhi

- **Urban Sophistication:** Evidence of a well-planned city with burnt-brick houses, specialized drainage systems, and granaries.
- **Genomic Significance:** A landmark study of DNA from a Rakhigarhi skeletal remain suggested that Harappans had an indigenous ancestry, challenging earlier theories of large-scale migration from the Steppes during the Harappan era.
- **Craftsmanship:** Discovery of diverse artifacts, including jewelry, terracotta toys, semi-precious stones, and a large-scale bead-manufacturing factory.

The Harappan (Indus Valley) Civilization

- **Nomenclature:** Originally known as the Indus Valley Civilization due to its development along the Indus River; however, recent scholarship emphasizes the **Indus-Saraswati river system.**
- **Technological Era:** Classified as a **Bronze Age civilization**, evidenced by the sophisticated use of copper-based alloys and metallurgical skills.

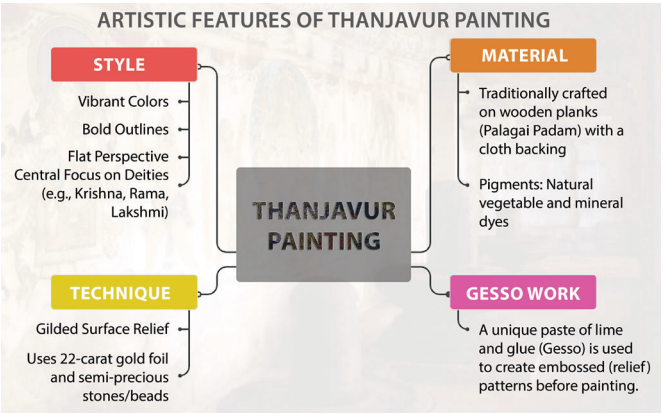


THANJAVUR (TANJORE) PAINTING

Recently, the Department of Posts successfully transported a priceless Thanjavur-style painting of the divine Shri Ram from Bengaluru to Ayodhya.

Historical & Geographical Context

- **Origin:** Flourished under the patronage of the Nayaka and Maratha rulers (16th–18th century) in Thanjavur, Tamil Nadu.
- **Recognition:** Awarded the Geographical Indication (GI) Tag for its unique regional identity.



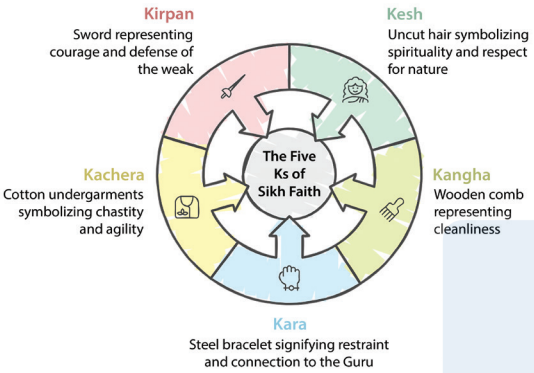
GURU GOBIND SINGH

Prime Minister Narendra Modi paid homage to Guru Gobind Singh Ji on the auspicious occasion of his birth anniversary (27 December, celebrated as Prakash Parv).

History

- **Birth:** Born in **1666 at Patna Sahib**, Bihar, to **Guru Tegh Bahadur Ji** (9th Guru) and Mata Gujri Ji.
- **Succession:** He assumed Guruship at the age of nine following the martyrdom of his father, who sacrificed his life to protect religious freedom.
- **Final Guru:** He declared the **Guru Granth Sahib** as the eternal, living Guru of the Sikhs, ending the lineage of human Gurus.
- He was Praised by **Swami Vivekananda** for courage, self-sacrifice, and heroism.

Founding of the Khalsa Panth (1699)



- **The Event:** During the Vaisakhi of 1699 at Anandpur Sahib, he established the **Khalsa** (the Pure), a community of saint-soldiers.
- **Panj Pyare:** He initiated the **Five Beloved Ones** (Bhai Daya Singh, Dharam Singh, Himmat Singh, Mohkam Singh, and Sahib Singh) from diverse social backgrounds, institutionalizing equality.
- **Five Ks (Articles of Faith):** He mandated the Five Ks to provide a distinct identity and discipline to the Khalsa. These five Ks include Kesh, Kangha, Kara, Kachera and Kirpan.

Literary Contribution

- Guru Gobind Singh added the writings of Guru Teg Bahadur into the '**Adi Granth**'
  - These hymns, known as **Shabad**, are recited and sung during **Sangats**, or gatherings, with fellow believers.
- **Dasam Granth:** He was a prolific scholar and poet; his literary contributions are compiled in the **Dasam Granth**, reflecting his martial spirit and spiritual depth.
  - His literary works like ***Jaap Sahib, Akal Ustat,*** **and** ***Zafarnama*** are compiled in the **Dasam Granth.**

Celebrations on Guru Gobind Singh Jayanti

The day is marked by **Akhand Paaths** (continuous scripture reading), **Nagar Kirtans** (processions), and **Langar** (community kitchen), reinforcing the ideal of **Vand Chakko** (sharing with others).

VEER BAL DIWAS

Every year on December 26, India observes Veer Bal Diwas to commemorate the unparalleled bravery and martyrdom of the youngest sons of Guru Gobind Singh Ji, the tenth Sikh Guru.

Historical Significance & Martyrdom

- **The Sahibzadas:**
  - The day honors Sahibzada Zorawar Singh Ji (9 years old) and Sahibzada Fateh Singh Ji (7 years old).
  - The martyrdom occurred at **Fatehgarh Sahib, Punjab**, where the **Gurudwara Jyoti Sarup** now stands.
- **The Siege of Sirhind:**
  - Following the **Battle of Anandpur**, the two youngest sons were captured by the Mughal Governor of Sirhind, **Wazir Khan.**
  - The term 'Sahibzadas' refers to the four sons of Guru Gobind Singh; while the youngest two are honored on this day, the **elder two (Ajit Singh and Jujhar Singh)** attained martyrdom in the **Battle of Chamkaur.**
- **Supreme Sacrifice (1704):**
  - On December 26, 1704, they were bricked alive for steadfastly **refusing to renounce their faith and succumb to the coercion.**
  - The event took place during the reign of Mughal Emperor **Aurangzeb.**
- **Recognition:** By declaring this a national day of remembrance, the government seeks to **integrate the history of the Sikh Gurus' sacrifices** into the broader national consciousness.
- **Legacy:** The martyrdom represents the peak of the struggle for Dharma and human rights championed by **Guru Gobind Singh Ji** and the **Khalsa Panth.**

PM MODI URGES 10-YEAR NATIONAL PLEDGE TO SHED COLONIAL MINDSET

Prime Minister Narendra Modi urged a national resolve to shed the Macaulay mindset, launching a 10-year mission to reverse the colonial-era impact of the 1835 education overhaul.

About

- In every country people take **pride in their historical heritage,** while **post-Independence India** witnessed efforts to disown its own legacy.
- PM Modi noted that nations such as **Japan and South Korea** did adopt Western ideas but **remained rooted in their own languages.** This was a balance India's **new education policy also seeks to encourage.**
- PM Modi asserted that the evils and societal afflictions introduced by Macaulay **must be eradicated in the coming decade.**

What is the "Colonial Mindset"?

The cumulative effect of British rule created a mindset marked by:

- Admiration for Western norms, governance, knowledge, and lifestyle;
- Undervaluation of Indian culture, language, scientific traditions;
- Dependence on external validation;
- Internalisation of racial and cultural inferiority.

Background

- **Education in pre-colonial India** was characterised by a segmentation along religious and caste lines, under the **Gurukul system.**
  - The Gurukul system favoured **traditional knowledge and spiritual development.**
  - Women, lower castes and other underprivileged people were often barred from accessing education.
- Initially, the East India Company assumed only minimal responsibility for education in India.
  - However, individual officials such as **Warren Hastings, Sir William Jones, and Jonathan Duncan** were deeply interested in India's ancient and medieval knowledge systems.
  - Their initiatives led to the establishment of early **Oriental institutions**—most notably the **Calcutta Madrasa (1781), the Asiatic Society of Calcutta (1784), and the Sanskrit College at Benares (1791)**. These were personal scholarly efforts rather than a formal educational policy of the Company.

Downward Filtration Theory

- **Thomas Babington Macaulay (1800–1859)** was a British historian, politician, and member of the Governor-General's Council in India.
- **Macaulay's Minute on Indian Education (1835):** Macaulay advocated for the creation of a pool of Indians capable of serving British interests.
  - This group would be Indian by blood and colour, but English by tastes, opinions, morals and intellect.
  - Entry into this group would be **limited to only a few Indians,** who would then **educate the rest of the population** according to Macaulay's controversial **Downward Filtration Theory.**
- **Post Direct Crown Rule:** After the British Crown took over from the Company following the **revolt of 1857, Viceroy Lord Mayo** made an assessment of India's educational policy.
  - He found that the British were educating a few hundred Babus at a great expense, who would then do nothing toward extending knowledge to the millions.
  - Viceroy Lord Mayo prioritised the **recommendations of the 1854 'Wood's Despatch,'** which called for the spread of education in both English and vernacular languages.

How British Rule Created a Colonial Mindset in India?

- **Imposition of English Education:** Education promoted Western sciences and humanities while delegitimising Indian knowledge systems, languages, and philosophies.
  - Produced an elite class that saw British culture as superior and Indian traditions as "backward."
- **Undermining of Indian Institutions & Traditions:** Ancient Indian systems of governance, jurisprudence, village self-rule, and indigenous medicine were portrayed as irrational, outdated, or superstitious.
- **Racial Hierarchy and Social Conditioning:** The British propagated the idea of the "White Man's Burden," portraying themselves as racially superior and Indians as incapable of self-rule.
  - Segregation in clubs, rail compartments, and residential areas reinforced racial superiority.
- **Westernized Urban Culture:** Urban Indians began to equate English language, dress, manners, social behaviour with modernity and prestige.
  - Access to jobs, courts, and higher education became linked to English literacy, marginalizing vernacular cultures.
- **Economic Policies Leading to Psychological Dependency:** Deindustrialisation and drain of wealth impoverished India, making British technology, capital, and institutions appear indispensable.
  - Indians began to see economic progress only through Western models, undermining indigenous entrepreneurship.

Government of India's Initiatives

- **Reforming Colonial Laws & Criminal Justice System:** Indian Penal Code was replaced by Bharatiya Nyaya Sanhita (BNS), CrPC as Bharatiya Nagarik Suraksha Sanhita (BNSS) and Indian Evidence Act to Bharatiya Sakshya Adhiniyam (BSA).
  - The aim is to shift from colonial "ruler's policing" to citizen-centric justice.
- **National Education Policy (NEP) 2020:** It moves away from Macaulay's rote-learning model.
  - Emphasises on Indian knowledge systems (IKS), classical languages, and critical thinking.
  - Promotes mother-tongue/ regional language as medium of instruction.
- **New Curriculum Framework (2023):** It has integrated Indian philosophy, culture, mathematics, sciences into school textbooks.
- **International Yoga Day:** The UN General Assembly in 2014, unanimously adopted a resolution for observing **21st June every year as the International Day of Yoga.**
- **Global Recognition:** The Ministry of Ayush and the World Health Organization has established the **World's first and the only Global Traditional Medicine Centre** (WHO GTMC) in Jamnagar, India.
- **Promoting Regional Language:** Greater use of Indian languages in Parliament, judiciary, and government administration.
- **Mission Karmayogi (2020):** Moving bureaucracy from colonial command-control culture to citizen-centric service orientation.

10 MISCELLANEOUS

PARAM VIR CHAKRA (PVC)

Portraits of all 21 Param Vir Chakra awardees have been installed in Rashtrapati Bhavan, replacing 96 portraits of British Aides-de-Camp as part of broader efforts to remove colonial symbols.

About

Institution & Meaning

Instituted on 26 January 1950 with effect from 15 August 1947, the Param Vir Chakra literally means "Wheel of the Ultimate Brave" and is India's highest wartime gallantry award.

Design & Inspiration

- Designed by Savitri Khanolkar, inspired by the sacrifice of Sage Dadhichi, whose body was used to forge the divine Vajra (thunderbolt).
- Bronze medal bearing the State Emblem in the centre, encircled by four Vajras and Shivaji's sword, suspended from a bar and worn on a 32 mm purple ribbon.

Aide-de-Camp (ADC)

A senior military or police officer serving as a personal staff officer to dignitaries like the President, Governors, or Service Chiefs, responsible for protocol, logistics, and official coordination.

NATIONAL MATHEMATICS DAY

National Mathematics Day is observed every year on 22 December to commemorate the birth anniversary of Srinivasa Ramanujan.

Srinivasa Ramanujan

- Srinivasa Ramanujan was an Indian mathematician born in 1887 in Kumbakonam, Tamil Nadu.
- **Contribution to Mathematics:** Despite having almost no formal training in pure mathematics, he made substantial contributions to mathematical analysis, number theory, infinite series, and continued fractions, including solutions to mathematical problems then considered unsolvable.
- In 1913, he wrote to British mathematician G.H. Hardy, leading to his invitation to Cambridge.
- He became one of the youngest Fellows of the Royal Society and the first Indian Fellow of Trinity College, Cambridge.
- He passed away at the age of 32.

What is the Hardy–Ramanujan number

The Hardy-Ramanujan number is 1729, the smallest number that can be expressed as the sum of two cubes in two different ways:

- $1^3 + 12^3 = 1 + 1728 = 1729$; and
- $9^3 + 10^3 = 729 + 1000 = 1729$.

VINOD KUMAR SHUKLA

The literary world mourns the demise of Eminent Hindi litterateur and Jnanpith Award winner Vinod Kumar Shukla.

About

- **Literary Style:** Renowned for a simple yet deeply sensitive narrative style that transformed mundane everyday life into profound observations.
- **Pioneer Status:** He was the first writer from Chhattisgarh to be conferred with the prestigious Jnanpith Award.
- **Seminal Works:**
  - Naukar Ki Kameez (The Servant's Shirt)
  - Deewar Mein Ek Khidki Rahti Thi (A Window Lived in the Wall)
  - Khilega To Dekhenge

Jnanpith Award

Eligibility
Open to Indian citizens writing in any of the 22 languages listed in the Eighth Schedule of the Constitution; English was included post-2013.

Evolution
Originally given for a specific work, since 1982 it recognizes an author's lifetime contribution to literature.

Institution
Established in 1961 by the Bharatiya Jnanpith Trust to honor excellence in Indian literature.

Selection Process
Administered by an independent Selection Board and Language Advisory Committees to ensure national representation and merit.

CHAMPIONS OF THE EARTH AWARD 2025

Tamil Nadu IAS officer Supriya Sahu received the UNEP's Champions of the Earth Award for environmental leadership.

About the Award

- **Launch & Prestige:** UN's highest environmental honour, instituted in 2005, recognising transformative impact by public/private/civil society leaders.

- **Categories:** Policy Leadership, Entrepreneurial Vision, Science & Innovation, Lifetime Achievement, **Inspiration & Action (Sahu honoured in this category).**

Supriya Sahu's Environmental Contributions

Key Initiatives:

- **Operation Blue Mountain (2000):** Launched a campaign to eliminate single-use plastics in the Nilgiris region.

Climate Solutions:

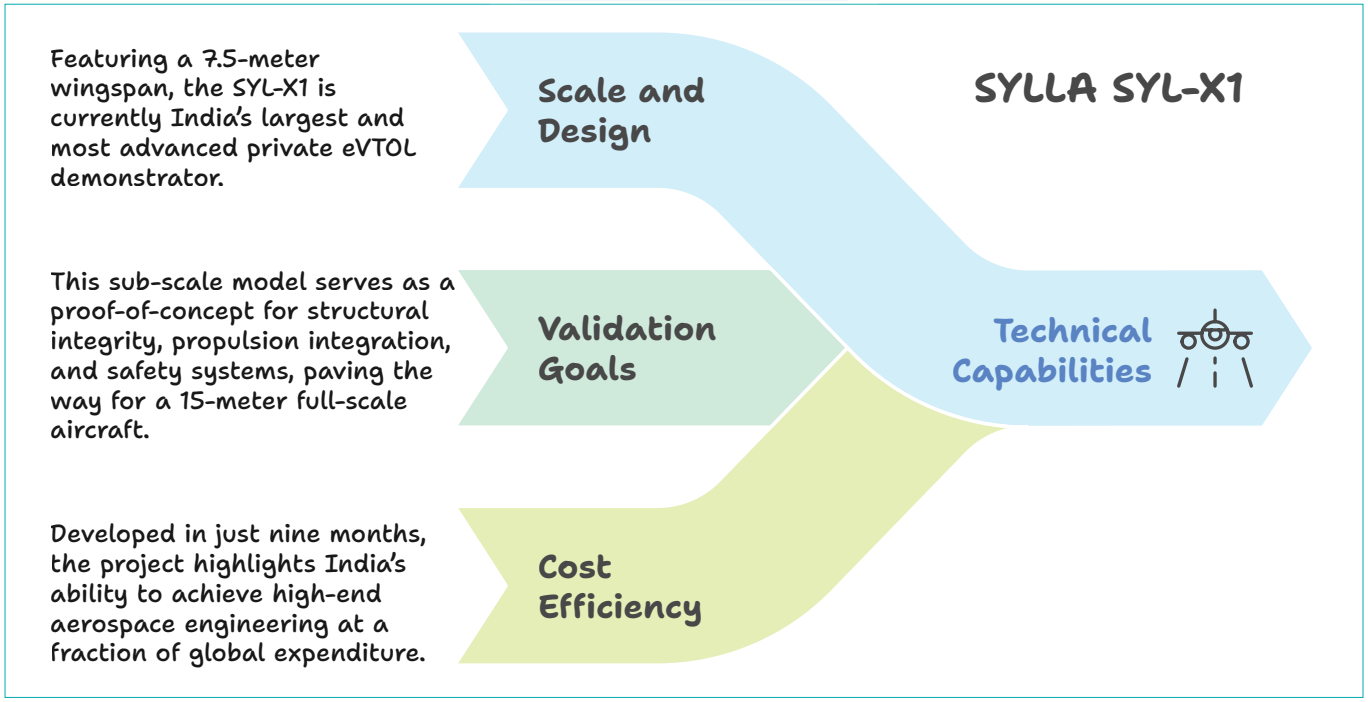
- **Introduced low-cost measures:** Started Cool Roof Project (white-painted school roofs), mangrove/wetland restoration and created 65 new reserve forests.
- **Impact & Legacy:** Nature-first approach generated 2.5 million green jobs; significantly advanced India's emissions-reduction targets.

SYLLA SYL-X1

Sarla Aviation recently conducted ground tests for its half-scale electric Vertical Take-off and Landing (eVTOL) demonstrator, the SYLLA SYL-X1, at its Bengaluru facility.

Additional Information

- **The Vision:** Sarla Aviation aims to deploy a **six-seater electric flying taxi** to bypass ground congestion in mega-cities like Bengaluru, Mumbai, Delhi, and Pune.
- **Collaboration:** A partnership with **Bangalore International Airport Limited (BIAL)** focuses on integrating sustainable air mobility into airport infrastructure.
- **Public Debut:** The firm recently showcased a full-scale static model at **Bharat Mobility**, following a $13 million capital infusion.



11 DATA RECAP

Aravalli Hills & Environment

- The Supreme Court stayed its November 2025 order defining Aravalli Hills as ≥100 m relief after protests, halting mining approvals and forming an expert panel to reassess ecological criteria, mapping, and sustainable mining norms.

Nuclear Energy Reform – SHANTI Act 2025

- The SHANTI Act ended India's nuclear monopoly, allowed private players and 49% FDI, introduced tiered liability up to ₹3,000 crore, made AERB independent, and targeted 100 GW nuclear capacity by 2047.

Indian Maritime Doctrine 2025

- The updated doctrine recognised "no-war, no-peace" scenarios, stressed multi-domain operations, and aligned naval strategy with MAHASAGAR, Sagarmala, Maritime India Vision 2030, and Viksit Bharat 2047.

Rural Employment – VB–G RAM G Act 2025

- Replacing MGNREGA, the Act increased guaranteed work to 125 days, adopted a 60:40 Centre–State funding model, capped allocations, linked planning to PM Gati Shakti, and introduced AI-based monitoring.

Defence Production & Exports

- India's defence production reached about ₹1.51 lakh crore in 2024–25, exports crossed ₹23,600 crore, import bans covered 5,500 items, and domestic sourcing rose to nearly 65%.

India–Russia Relations

- The 23rd India–Russia Summit set a $100 billion trade target by 2030, prioritised INSTC and Chennai–Vladivostok routes, expanded nuclear and defence co-production, and reaffirmed support for India's UNSC bid.

Governance 4.0 & Digital Reforms

- Governance reforms delivered ₹1.78 lakh crore DBT savings, GeM transactions worth ₹4.4 lakh crore, 96% grievance disposal via CPGRAMS, and integration of 1,600 services on UMANG.

Maritime Security of India

- With a coastline of ~11,100 km, India expanded NC3I networks, IFC-IOR data fusion, AI-enabled maritime awareness, and anti-piracy deployments to protect critical sea lanes.

Supreme Court & Climate Rights

- In 2024–25 rulings, the Supreme Court recognised protection against adverse climate change impacts as part of Articles 14 and 21, strengthening environmental justice, precautionary principle, and state accountability.

Nuclear Energy & Climate Goals

- Nuclear power emits under 15 g CO_2/kWh versus coal's ~800 g, with projected investments near ₹10 lakh crore and employment potential of around 200,000 skilled jobs.

Defence Acquisition Reforms

- Reforms under DAP-2020 expanded FDI up to 74% automatic, strengthened iDEX and TDF for startups, simplified procurement, and prioritised mission-mode R&D in AI, cyber, space, and jet engines

Urbanisation & Infrastructure

- PM Gati Shakti integrated logistics, roads, railways, ports, and pipelines into a unified planning platform, reducing project delays and lowering logistics costs toward the 8% GDP target.

Social Justice & Inclusion

- Women's participation rose across governance and labour schemes, while targeted support expanded for SC/STs, elderly, disabled, and transgender persons under inclusive development frameworks.

Health System Strengthening

- Ayushman Bharat expanded coverage, digital health IDs crossed hundreds of millions, and focus increased on preventive healthcare, telemedicine, and district-level health infrastructure.

Education & Skill Development

- NEP implementation deepened through digital classrooms, skilling missions, and industry-linked training to align workforce capabilities with emerging sectors like AI, defence, and renewables.

Foreign Policy & Global South

- India strengthened its leadership among developing nations through G20 outcomes, BRICS expansion, development partnerships, and advocacy for multipolar global governance reforms.

Space Sector Reforms

- Private sector participation expanded through IN-SPACe, with over 150 startups, rising commercial launches, and progress on Gaganyaan human spaceflight and NavIC-based services.

TEST YOURSELF

Objective Questions

Visit: www.nextias.com for monthly compilation of Current based MCQs

SUBJECTIVE QUESTIONS

GS PAPER-I

1. The Aravalli mountain system is often described as the "ecological spine of north-western India." Examine its geological antiquity, hydrological role, and significance in preventing desertification. ***(15 marks)***
2. Discuss how ancient mining activities in the Aravalli region reflect the continuity of resource utilisation from the Harappan civilisation to the medieval period. How does this historical legacy complicate contemporary environmental governance? ***(15 marks)***
3. Communist ideology in India followed a trajectory distinct from classical Marxist predictions. Analyse this evolution with reference to the Tashkent and Kanpur debates. ***(15 marks)***
4. Explain the role of the Aravalli Range in groundwater recharge in north-western India. ***(10 marks)***
5. Briefly examine the geographical and ecological significance of Mount Abu within the Aravalli system. ***(10 marks)***
6. Why is the Kanpur Conference of 1925 considered a milestone in the indigenisation of the Communist movement in India? ***(10 marks)***

GS PAPER-II

7. Critically examine the Supreme Court's attempt to evolve a uniform definition of the Aravalli Hills. How does this reflect the tension between environmental protection and administrative objectivity? ***(15 marks)***
8. Discuss the constitutional basis of environmental protection in India. How have judicial doctrines expanded the scope of Articles 14 and 21 in recent years? ***(15 marks)***
9. Good Governance Day symbolises a transition from authority-centric administration to citizen-centric governance. Analyse this transformation in the context of Governance 4.0. ***(15 marks)***
10. India–Russia relations have transitioned from a buyer–seller dynamic to strategic co-development. Analyse this shift in the context of defence cooperation, connectivity initiatives, and the emerging multipolar global order. ***(15 marks)***
11. How does the Public Trust Doctrine strengthen environmental governance in India? ***(10 marks)***
12. What is the significance of the All India Conference of Directors General of Police in India's internal security architecture? ***(10 marks)***
13. Briefly explain how digital governance tools have enhanced transparency and accountability in India. (10 marks)

GS PAPER-III

14. Redefining ecological boundaries through administrative criteria can create regulatory blind spots. Discuss this statement in the context of mining regulation in the Aravalli region. ***(15 marks)***
15. The SHANTI Act, 2025 marks a paradigm shift in India's nuclear energy governance. Critically evaluate its economic, strategic, and safety implications. ***(15 marks)***
16. Satellite spectrum has emerged as a strategic resource in the twenty-first century. Examine the technological, economic, and geopolitical challenges associated with its regulation. ***(15 marks)***
17. Why is the Aravalli region crucial for India's commitments under the United Nations Convention to Combat Desertification (UNCCD)? ***(10 marks)***
18. How does the Export Promotion Mission (2025–2031) aim to address the structural bottlenecks faced by MSME exporters? ***(10 marks)***
19. What are the environmental and public health consequences of unregulated mining in fragile ecosystems? ***(10 marks)***
20. Explain the concept of orbital crowding and discuss its implications for space sustainability. ***(10 marks)***