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DHALIWAL'S NEW CAREERS ACADEMY

GHATAK

AUGUST 2026 CURRENT AFFAIRS

INDIA & THE WORLD



COMPLETE MONTHLY EDITION

NATIONAL • INTERNATIONAL • DEFENCE • ECONOMY

SCIENCE & TECHNOLOGY • ENVIRONMENT • SPORTS

NDA • CDS • AFCAT • CAPF • UPSC

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FROM THE DESK OF NCA ACADEMY

Dear Aspirant,

Welcome to the August 2026 edition of the Ghatak Series — NCA Academy's flagship monthly current affairs compilation, reworked for NDA, CDS, AFCAT, CAPF, SSB and UPSC aspirants.

This edition covers 25th July to 24th August 2026 and spans all eight current affairs domains — Polity & Governance, Nation & States, Economic Scenario, International Relations, Environment & Ecology, Science & Technology, History Art & Culture, and Social Issues — with 98 topics and 63 Facts-for-UPSC entries across nine categories.

Independence Day's 'Sapt Dhara' framework for Viksit Bharat 2047, the SHANTI Act's nuclear liability debate, the FCRA Bill's referral to a Joint Parliamentary Committee, Kargil Vijay Diwas, and India's Commonwealth Games 2026 campaign headline a month rich in exam-relevant material.

HOW TO USE THIS COMPILATION

- Read each section once thoroughly within the first 7 days of receiving this PDF
- Mark topics already covered in your NCA notes — focus revision on the rest
- For NDA/CDS: Polity, Economic Scenario, Defence & Security, Important Days are HIGH priority
- For AFCAT: Defence, Awards, Sports, Science & Tech, History Art & Culture
- For CAPF: All sections — Paper 1 GA spreads questions widely across current events
- For SSB Lecturette: Pick 3-4 strategic topics from Polity, Nation & States and International Relations

Key high-probability themes: Sapt Dhara framework for Viksit Bharat 2047, SHANTI Act nuclear liability, FCRA Amendment Bill 2026, Electoral Black Money, Naxal-Free India strategy, Kargil Vijay Diwas, India at Commonwealth Games 2026, Total Solar Eclipse, Fields Medal 2026, Gallantry Awards 2026.

Jai Hind!

Hartaj Dhaliwal

Director, Dhaliwal's New Careers Academy

On behalf of three generations: Late Lt. Col. Hardit Singh Dhaliwal → Capt. Nirmal Dhaliwal → Hartaj Dhaliwal

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POLITY & GOVERNANCE

SC Eases 3-Year Practice Rule for Judicial Services

SC has modified the operational framework of its May 2025 judgment mandating a three-year legal practice requirement for entry into the judicial services by introducing a transitional structured training mechanism for fresh law graduates.

- May 2025 SC ruling: Restored 3-year legal practice requirement for entry-level judicial services, reversing the 2002 All India Judges' Association case that allowed fresh graduates to directly appear.
- Transition Relief Window (20 May 2025 – 31 March 2027):
  - Fresh law graduates can appear without prior practice.
  - They will be considered to have completed 1 year of practice.
- Trainee Judicial Officer Framework: Selected candidates will initially be appointed as Trainee Judicial Officers and receive half the remuneration of a Judicial Magistrate First Class (JMFC) during training.
- Training as Practice Equivalence:
  - One year of State Judicial Academy training will count as one year of Bar practice.
  - One year of supervised judicial clerkship (six months under a District/Sessions Judge and six months under a High Court Judge) will count as another one year of Bar practice.
- Regular Appointment: Full judicial rank, regular pay scales and service benefits will be granted after satisfactory completion and evaluation of the two-year academy and clerkship programme.
- Long-Term Rule (From 1st April 2027): Candidates appearing for the Civil Judge (Junior Division) examination must have at least one year of actual certified practice in effective court proceedings. The remaining requirement will be fulfilled through structured training after selection.
- Implementation & Review: High Courts and State Governments must amend subordinate judicial service rules within three months. The scheme will remain operational for five years and will be reviewed based on empirical data.
- Rationale: SC held that Civil Judges handle issues of life, liberty, property and personal rights from day one, making familiarity with courtroom procedures and Bench–Bar dynamics essential. n c e Constitutional Provisions Governing Subordinate Judiciary Article Provision Recruitment of persons other than District Judges: Appointments are made by the Governor according to Article 234 rules framed after consultation with the State Public Service Commission and High Court. Vests administrative, disciplinary and operational control Article 235 of district and subordinate courts in the High Court. Governor appoints, posts and promotes District Judges in consultation with the High Court. A Article 233 person from outside government service must have 7 years' experience as an advocate/pleader and be recommended by the High Court.

SHANTI Act, 2025 and Nuclear Liability Concerns

SC is examining whether liability caps under the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025 can restrict constitutional courts from awarding fair and adequate compensation to nuclear-disaster victims.

- SC is also examining whether Section 17(4) on appointments to the Atomic Energy Regulatory Board (AERB) creates a conflict of interest.
- A three-judge Bench headed by the CJI issued notices to the Union Government and AERB on petitions alleging inadequate victim compensation under statutory caps. SHANTI Act, 2025
- About: Replaced the Civil Liability for Nuclear Damage (CLND) Act, 2010 to facilitate private-sector participation by easing liability norms and creating a predictable civil- liability framework.
  - "Company" follows Section 2(20), Companies Act, 2013, but excludes foreign-incorporated companies.
  - Gives AERB statutory status.
- Strategic State Control: Uranium enrichment, spent-fuel reprocessing, high-level waste management and heavy- water production remain reserved for the Central Government/wholly owned institutions.
- Dispute Redressal: Creates an Atomic Energy Redressal Advisory Council; Appellate Tribunal for Electricity is the appellate authority.
- Nuclear Liability under Previous Framework: CLND Act, 2010
  - Established a no-fault regime: victims had to prove damage, not negligence.
  - Operator liability for large reactors: ₹1,500 crore; overall maximum liability: 300 million SDR per nuclear incident.
  - Operators had a statutory right of recourse against suppliers for accidents caused by defective equipment, patent or latent defects.
- Nuclear Liability under SHANTI Act: Based on the thermal capacity and risk profile of the nuclear installation: Nuclear Installation Operator Liability Above 3,600 MW thermal power `3,000 crore Above 1,500 MW–3,600 MW `1,500 crore Above 750 MW–1,500 MW `750 crore Above 150 MW–750 MW `300 crore Up to 150 MW, specified fuel-cycle facilities and `100 crore nuclear-material transport
  - State Absorption: After the operator limit is exhausted, the Central Government pays remaining compensation. Total liability per incident is capped at the rupee equivalent of 300 million SDR, or a higher amount notified by the Central Government. Beyond this, the Government may take additional measures, including seeking funds under the Convention on Supplementary Compensation (CSC).
  - Supplier Recourse Diluted: Domestic and foreign suppliers are largely shielded unless liability is expressly contractual or the incident is caused intentionally.
- Adjudication & Information Control: Claims handled by specialised bodies such as a Claims Commissioner/Nuclear Damage Claims Commission; ordinary civil courts are excluded.
  - Claims must be filed within 10 years for property damage and 20 years for personal injury.

- Union Government may classify certain nuclear operational information as restricted, limiting disclosure under the RTI framework.

- India is not a party to the Paris Convention or Vienna Convention.

- India ratified Convention on Supplementary Compensation (CSC), 1997 in 2016 and is a State Party.

  - India is not party to the 2026 Amendment, which revises the public-fund contribution formula for States without nuclear reactors. Nuclear Liability Concerns Regarding the SHANTI Act, 2025

- Inadequate Liability Ceiling: 300 million SDR, about ₹3,900–4,000 crore, may be insufficient for catastrophic accidents.

  - Chernobyl: Estimated losses of USD 235–700 billion.

  - Fukushima: Around USD 400–445 billion in clean-up, decommissioning and compensation.

  - Nuclear disasters can cause multi-generational health damage, environmental contamination, displacement, livelihood losses and long-term land-use/economic restrictions.

- Restrictive Time Limits: 10 years for property and 20 years for personal injury may exclude radiation-induced cancers, genetic damage and congenital anomalies appearing decades later.

- Weaker Safety Incentives: Liability caps may reduce incentives for advanced safety systems, rigorous maintenance and operational redundancy; excessive supplier protection may further weaken accountability.

- Constitutional and Legal Fault Lines:

  - Absolute Liability, Article 21: M.C. Mehta (1987) held enterprises engaged in inherently hazardous activities absolutely liable for all damage without exception; statutory caps may conflict with this principle.

  - Polluter Pays: Indian Council for Enviro-Legal Action (1996) recognised that polluters must bear environmental costs. GC Under SHANTI, Government assumption of residual liability may shift costs of private nuclear activities to taxpayers.

  - Article 14: Reactor-size-based liability, including only ₹100 crore for small reactors, is challenged as arbitrary because even smaller failures may cause severe radiation hazards.

  - Article 19(1)(a): Section 39 restricting information under the RTI Act, 2005 may weaken safety transparency and victims' ability to obtain evidence for claims.

  - AERB Independence: Government control over appointments may create conflict between promotion and regulation of nuclear energy. GC Effective regulation requires institutional, financial and technical autonomy from executive, political and commercial influence. Measures to Strengthen the Nuclear Liability Framework

- Independent Nuclear Safety Regulator: CAG reported an 85% shortfall in regulatory inspections of hazardous sites and absence of a National Nuclear Safety Policy.

  - Revive a modern Nuclear Safety Regulatory Authority (NSRA) framework based on the Raja Ramanna Committee, 1997 and NSRA Bill, 2011.

  - Raja Ramanna Committee, 1997: Recommended amending the Atomic Energy Act, 1962 to strengthen nuclear regulation.

  - NSRA Bill, 2011: Proposed a stronger regulator after the Mayapuri radiation accident, 2010 and Fukushima disaster, 2011; it lapsed and did not establish a truly autonomous regulator.

  - Would address the structural conflict arising from the Department of Atomic Energy (DAE) being involved in both nuclear promotion and regulation.

- Use CSC Compensation Mechanism: Develop mechanisms to access the CSC international supplementary compensation pool when domestic liability limits are exceeded, reducing pressure on the Indian exchequer.

- Strengthen India Nuclear Insurance Pool (INIP): Expand the INIP, managed by General Insurance Corporation of India, and supplement it with international reinsurance and Sovereign Catastrophe Bonds (Cat-Bonds).

- Contractual Supplier Liability: Since statutory recourse has weakened, NPCIL and private operators should make the contractual right of recourse mandatory.

Foreign Contribution (Regulation) Amendment Bill, 2026

The FCRA Bill, 2026 has been referred to a Joint Parliamentary Committee (JPC) for detailed examination and stakeholder consultations.

- The move follows notification of the FCRA Amendment Rules, 2026 aimed at improving compliance, transparency and accountability in regulation of foreign contributions received by NGOs and associations.

  - Quarterly status reports must be submitted to the ECI.

- Income Tax Coordination: Static Surveillance Teams must report cash above ₹10 lakh to Income Tax authorities.

- Speedy Trials: High Courts must ensure expeditious disposal, including through designated courts where required.

- Withdrawal of Cases: Withdrawal of election-cycle criminal cases against candidates requires HC approval.

- Compliance: ECI and State Governments must submit compliance reports by 18th Nov 2026.

Supreme Court on Electoral Black Money

Sc observed that removing black money from elections is a responsibility of the ECI.

- Illicit money can distort free voter choice and undermine democracy, rule of law and the electoral process.

- Court directed time-bound investigations, seizure reporting and speedy trials in election-related black money cases. Key Directives Issued by the SC

- Seizure Reporting: Cash/assets seized must be reported within 24 hours to the District Magistrate, Additional District Magistrate or competent court, with a prima facie link to an electoral offence.

- Time-Bound Investigation: Election-related FIR investigations should be completed within 1 year; delays must be justified to the ECI.

  - Procurement contracts should expressly impose supplier liability for latent design defects, while remaining CSC-compliant. The SHANTI Act, 2025 seeks to promote private

participation in nuclear energy while restructuring nuclear liability. Examine whether its liability framework adequately balances investment interests with citizens' right to life under Article 21. Mains Question

Black Money as a Threat to Electoral Democracy

- Subversion of Constitutional Rights: Monetary inducements undermine free voter choice and the principle of Universal Adult Suffrage under Article 326.
  - PUCL v. Union of India (2013): Right to cast a negative vote (NOTA) is important for free democratic choice.
- Destruction of the Level Playing Field (Article 14): Unaccounted wealth disadvantages resource-poor candidates and promotes plutocratic influence.
  - Kanwar Lal Gupta v. Amar Nath Chawla (1974): Financial disparity can distort electoral competition.
  - Indira Nehru Gandhi v. Raj Narain (1975): Free and fair elections are part of the Basic Structure.
- Policy Capture and Crony Capitalism: Illicit funding can produce quid pro quo, biased procurement and policies favouring financiers.
  - ADR v. Union of India (2024): Electoral Bonds Scheme struck down; anonymous funding violated citizens' Right to Information under Article 19(1)(a) and could facilitate quid pro quo.
- Criminal-Political Nexus: Vohra Committee (1993) highlighted links between criminal networks and political financing.
  - Public Interest Foundation v. Union of India (2018): Court stressed decriminalisation of politics and electoral transparency. Legal and Institutional Framework to Curb Black Money in Elections
- Section 123(1), RPA 1951: Bribery is a corrupt practice.
- Conduct of Election Rules, 1961: Framework for candidate expenditure limits.
- Common Cause v. Union of India (1996): Political parties must maintain and submit election-related financial statements.
- Union of India v. ADR (2002): Voters have a right to know candidates' criminal records, assets, liabilities and qualifications.
- ECI monitoring: Expenditure Observers, Static Surveillance Teams, Flying Squads and Video Surveillance Teams.
- cVIGIL App: Enables real-time citizen reporting of MCC violations and voter inducements.
- Income Tax Act, 2025 and PMLA, 2002: Used to investigate unaccounted money and proceeds of crime. Persisting Challenges in Curbing Black Money in Elections
- Expenditure Loophole: Section 77, RPA 1951 caps candidate expenditure, but there is no overall ceiling on political-party expenditure.
- Anonymous Small Donations: Section 29C, RPA 1951 does not require donor disclosure for contributions below ₹20,000, enabling donation splitting.
- Limited ECI Enforcement Capacity: ECI depends on State police and administration and lacks an independent financial-forensics wing.
- Inter-Agency Coordination: Tracking hawala, shell companies and complex financial flows requires multiple agencies.
- MCC Enforcement Gap: Model Code of Conduct is largely non-statutory.
- Cash-Based Economy: Makes it difficult to establish the source and electoral link of seized cash.
- Last-Mile Inducements: Cash, liquor and gifts are often distributed 24–48 hours before polling.
- Detection–Conviction Gap: Seizures and FIRs often do not translate into convictions. Measures Needed to Ensure the Integrity of the Electoral Process
- Statutory Capping of Party Expenditure: Introduce enforceable expenditure limits for political parties and empower the ECI to deregister non-serious/shell parties.
- Complete Digitization of Political Funding: Phase out cash donations and route contributions through traceable digital banking channels with independent auditing.
- Empowering ECI with Financial Intelligence: Create an autonomous financial enforcement wing and integrate real-time data from Financial Intelligence Unit (FIU-IND) and CBDT.
- Partial State Funding of Elections: As recommended by the Indrajit Gupta Committee (1998), provide state support in kind.
- Judicial Fast-Tracking and Decriminalisation: Create specialised fast-track courts, enforce the SC's 1-year investigation timeline, and strengthen disqualification for serious electoral offences. Black money in elections compromises not merely electoral finance but the very autonomy of the voter. Discuss. Mains Question

80th Independence Day: 'Sapt Dhara' Framework for Viksit Bharat 2047

On India's 80th Independence Day, PM outlined the 'Sapt Dhara' (Seven Streams of Strength) framework for Viksit Bharat by 2047. The full version of 'Vande Mataram' was rendered at the Red Fort for the first time during Independence Day celebrations, marking its 150th anniversary.

- The development draws attention to Panch Pran (Five Resolves), outlined in the 2022 Independence Day address, to guide India's journey towards Viksit Bharat 2047.
- Developed India: Transform India into a prosperous global power with high living standards.
- Removal of Colonial Mindset: Eliminate colonial mentality from institutions, systems and society.
- Pride in Heritage: Promote pride in India's culture, traditions and heritage.
- Unity and Integrity: Strengthen national unity beyond caste, region and language divisions.
- Sense of Duty: Emphasise Kartavya and responsible citizenship in nation-building. India's journey towards Viksit Bharat requires a balance between cultural confidence, civic responsibility and economic competitiveness. Discuss in the light of Panch Pran and Sapt Dhara. Mains Question

Relevance of Regional Parties in India

The relevance of regional parties has come under debate following electoral setbacks, defections and concerns that the proposed One Nation, One Election (ONOE) framework may strengthen dominant national narratives at the expense of State-specific politics. Classification of the Party System in India

- Political Party: An association/group of Indian citizens registered with the ECI under Section 29A of the Representation of the People Act, 1951.
  - India follows a multi-party system.
  - ECI classifies parties as recognised and unrecognised. Recognised Parties: National Parties and State Parties under the Election Symbols (Reservation and Allotment) Order, 1968.
- State Parties are commonly called regional parties because their influence is concentrated in particular States.
- The term political party was not expressly mentioned in the original Constitution; it entered the constitutional framework through the 52nd Constitutional Amendment Act, 1985, which inserted the Tenth Schedule. Why is the Political Space for Regional Parties Shrinking in India?
- Dominance of National Parties: As of August 2026, regional parties independently headed governments in only Andhra Pradesh, Meghalaya, Nagaland and Puducherry, the lowest level in nearly 2.5 decades, compared with nine States during 2015–20.
- Changing Political Phases:
  - 1952–67: One-party dominance.
  - 1967–89: Rise of linguistic, cultural and regional aspirations.
  - 1989–2014: Coalition politics, with regional parties acting as kingmakers.
  - Renewed single-party dominance has reduced their role in national policymaking.
- FPTP Effect: Even a small decline in vote share can cause disproportionate seat losses, while concentrated gains can yield large seat increases; therefore, seat losses may exaggerate actual erosion of voter support.
- Dynastic/Leader-Centric Politics: Weak internal democracy and dependence on dominant leaders or families can produce succession crises, factionalism, splits and loss of emerging leaders.
- Resource Asymmetry: Candidate expenditure limits are ₹95 lakh/₹40 lakh for Lok Sabha/Assembly seats in larger States and ₹75 lakh/₹28 lakh in smaller States, but parties themselves have no overall election-expenditure ceiling, benefiting larger national parties.
- Defections: Concerns over misuse of the Tenth Schedule's merger provision, party splits and defections can weaken regional parties.
- Political Pressure: Allegations concerning selective use of central investigative agencies, corruption and money power may further affect organisational stability and bargaining capacity.
- Reduced State Policy Space: Governor-related disputes, delayed assent to State laws, dependence on Centrally Sponsored Schemes, and greater use of cesses and surcharges outside the divisible pool under Article 271 can constrain States' fiscal autonomy and their ability to pursue region-specific development policies.
- ONOE Concern: Simultaneous elections may allow national-security and macroeconomic narratives to overshadow State-specific issues, potentially favouring better-resourced national parties.
- Identity to Aspirational Politics: Voters increasingly emphasise development, infrastructure, employment and national security alongside regional identity; regional parties must combine identity politics with credible governance. Evidence of Resilience
- Stable Vote Share: Regional parties secured about 33.52% of total votes in the 2024 Lok Sabha election.
- Assembly Strength: Their performance remains stronger in State Assembly elections, indicating continued regional political preferences.
- Coalition Relevance: They remain dominant coalition partners in Andhra Pradesh, Meghalaya, Nagaland and Puducherry and participate in governments in Bihar, UP, Assam, Goa, Maharashtra, Tripura, Jharkhand, J&K & Kerala. Significance of Regional Parties in Indian Democracy
- Checks Centralisation: Act as a counterweight to excessive centralisation and demand greater administrative and fiscal devolution.
- Electoral Federalism: During 1989–2014, coalition politics "federalised" the party system by compelling the Centre to accommodate State aspirations.
- Welfare Innovation: State-level models can influence national policy; the Midday Meal Scheme in Tamil Nadu is a key example.
- Democratic Choice: Regional parties widen electoral competition and participation.
  - Tamil Nadu recorded 84.69% voter turnout in the 2026 Assembly election, its highest ever.
- Voice to Regional Interests: Bring linguistic, ethnic and cultural concerns into national politics.
- National Agenda Setting: Highlight issues such as inter- State river disputes, State-specific financial needs, agricultural concerns and regional infrastructure in Parliament and national policymaking. Measures to Strengthen Regional Parties
- State Funding of Elections: Partial State funding, as recommended by the Indrajit Gupta Committee (1998), can reduce resource asymmetry.
- Curb Wholesale Defections: Tighten/remove the two- thirds merger exemption under the Tenth Schedule.
  - Dinesh Goswami Committee (1990): Disqualification by President/Governor on ECI advice.
  - Law Commission, 170th Report (1999): Transfer decision-making to an independent tribunal.
  - Reiterated by the National Commission to Review the Working of the Constitution (2002).
- Intra-Party Democracy: Build a second rung of leadership and reduce personality-centric organisation.

- Re-evaluate ONOE: Safeguard State-level issues and regional political narratives during simultaneous elections.
- Fair Delimitation: Ensure Southern States are not politically marginalised due to demographic differences.
- Developmental Regionalism: Shift from purely caste/language mobilisation towards State-specific governance focused on infrastructure, health and fiscal prudence. "Strong regional parties are essential for maintaining political competition and preventing excessive centralisation." Critically examine. Mains Question

Deepening Inclusive Development in Rural India

As India marks its 80th Independence Day, the Government highlighted initiatives for rural and tribal welfare, inclusion, livelihoods, infrastructure, education and financial security. India's Shift from Welfare Delivery to Decentralised and Inclusive Development From Welfare Delivery to Decentralised Partnerships

- Direct Fiscal Transfers: Panchayat transfers increased from ₹2.36 lakh crore under 15th Finance Commission (2021–26) to ₹4.35 lakh crore under 16th Finance Commission (2026–31).
- Rural Development Budget: ₹87,765 crore (2016–17) → ₹2.73 lakh crore (2026–27).
- Tribal Affairs Budget: ₹4,826 crore (2016–17) → ₹15,421.97 crore (2026–27). Foundations of Dignity: Universal Access to Basic Needs
- Jal Jeevan Mission: Tap-water coverage rose from 3.23 crore households (2019) to 15.91+ crore (August 2026); 2.89 lakh villages reported 100% household coverage.
- Swachh Bharat Abhiyan-Grameen: 12.19+ crore household toilets constructed; India declared ODF in 2019. 1,288+ GOBARdhan biogas plants operational by August 2026.
- Pradhan Mantri Ujjwala Yojana: 10.57+ crore LPG connections provided to poor women; total LPG connections rose from 14.52 crore (2014) to 33.39 crore (2026).
- Universal Village Electrification: 100% willing household electrification achieved by March 2019 under SAUBHAGYA; 100% village electrification achieved by 2025 under DDUGJY.
- Ayushman Bharat: 45.51+ crore Ayushman Cards, 96.43 crore ABHA accounts and 1.86+ lakh Ayushman Arogya Mandirs by August 2026.
- Food Security for All: PMGKAY covers 81.35+ crore beneficiaries.
  - 99.8% Fair Price Shops automated for Aadhaar-based distribution.
  - Ration cards 100% digitised across States/UTs.
  - 221+ crore ONORC portability transactions recorded.
- Samagra Shiksha Abhiyan: During 2018–19 to 2025–26, 4,073 schools upgraded, 1.49 lakh ICT/digital initiatives implemented and 25,000 schools covered under skill education.
  - 97.3% schools had functional sanitation facilities for girls.
  - Female dropout: Primary 4.6% → 0.1%; Secondary 14.5% → 8% between 2013–14 and 2025–26.
- EWS Reservation and Improved Enrolment: 103rd Constitutional Amendment Act, 2019 enabled up to 10% EWS reservation in education and public employment.
  - GER 2025–26: Primary 89.4, secondary 81.5; higher-secondary increased from 46.4 (2014–15) to 61.7.
- Beti Bachao Beti Padhao: Girls' secondary GER increased from 75.5% (2014–15) to 83.4% (2025–26).
- Kasturba Gandhi Balika Vidyalayas and PM eVidya: Sanctioned KGBVs increased from 3,609 to 5,639; 5,133 operational in 2024–25.
  - Enrolment increased from 3.52 lakh to 7.11 lakh.
  - SWAYAM: 6.5+ crore enrolments.
  - DIKSHA: 2.35 crore registered users. Building the Backbone: Infrastructure and Connectivity
- Pradhan Mantri Awaas Yojana–Grameen: 3.91+ crore houses sanctioned and 3.13 crore completed by August 2026.
- Pradhan Mantri Gram Sadak Yojana: 99.6% eligible habitations connected by all-weather roads by June 2026.
  - Rural roads completed: 3.86 lakh km (2000–14) vs 4.13 lakh km (2014–2026).
  - Bridges completed: 484 → 10,404 over the same periods.
- Digitalisation of Gram Panchayats:
  - BharatNet: 2.19 lakh Gram Panchayats connected.
  - eGramSwaraj: ₹3.16+ lakh crore online transactions processed.
  - SabhaSaar: Used by 1.28+ lakh Gram Panchayats for AI-enabled meeting summaries. Pathways to Prosperity: Livelihoods, Skills and Financial Security
- DAY-NRLM: 10.19 crore households mobilised into 94.46 lakh SHGs.
  - Lakhpati Didi: 3.46 crore created by July 2026.
- Community Resource Persons for Last-Mile Delivery: 9+ lakh CRPs, including 50,548 Bank Sakhis, 1.91 lakh Krishi Sakhis, 2,012 Matsya Sakhis and 1.70 lakh Pashu Sakhis.
- Self-Help Entrepreneur Mart (SHE-Mart): Announced in Union Budget 2026–27; aims to benefit 1 crore women through community-owned retail spaces.
- Deendayal Upadhyaya Grameen Kaushalya Yojana: 18.45 lakh trained and 12.35 lakh placed by August 2026.
- Pradhan Mantri Kaushal Vikas Yojana: 1.64+ crore youth trained up to June 2026.
- Rural Employment Guarantee: Under the predecessor MGNREGA framework, person-days increased from 1,660 crore (2006–14) to 3,036.7 crore (2014–25); women's participation rose from 48% to 58.19%.
  - From 1 July 2026, MGNREGA was replaced by the Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) Act, 2025, guaranteeing 125 days of wage employment per rural household.
- e-Shram Portal: Registrations rose from 14.40 crore (2021) to 31.87 crore (August 2026).
- PM Vishwakarma Yojana: 30+ lakh artisans registered; 24.32 lakh trained and 17.70 lakh received toolkits.

- PM SVANidhi: Beneficiaries increased from 26.37 lakh (2021) to 78.17 lakh (2026); ₹18,971.18 crore loans disbursed; 46% beneficiaries are women.
- PM MUDRA Yojana: Loans sanctioned increased from 3.49 crore (2016) to 59.14+ crore (July 2026).
- Pradhan Mantri Jan Dhan Yojana: Beneficiaries increased from 17.9 crore (2015) to 58.90 crore (2026).
- Expanding Social Security Coverage:
  - NPS: 1.05 crore → 2.17 crore beneficiaries.
  - Atal Pension Yojana: 48.80 lakh → 9.29 crore beneficiaries.
  - PMJJBY: 27.90 crore people covered.
  - PMSBY: 58.78 crore people covered.
  - PM Shram Yogi Maan-dhan: 54+ lakh workers registered. Accelerating Tribal Development through Integrated Interventions
- PM-JANMAN: 540 Van Dhan Vikas Kendras sanctioned, benefiting 46,042 PVTG persons.
- Pradhan Mantri Janjatiya Vikas Mission (PM-JVM): 4,172 VDVKs sanctioned, benefiting about 12.48 lakh tribal people.
- Pradhan Mantri Janjatiya Unnat Gram Abhiyan (PM- JUGA): Integrates 17 Ministries for tribal-majority villages and PVTG habitations.
  - 7.60 lakh tribal houses completed; 28,303 villages gained drinking-water access.
  - 59,812 households/public institutions electrified; 657 Anganwadi Centres operationalised.
  - 692 hostels sanctioned for tribal students.
- Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM- AJAY): 4.16+ lakh SC houses, 4.17+ lakh SC households under health protection and 3.57+ lakh households with individual toilets.
  - 17,578 villages declared Adarsh Grams.
- Eklavya Model Residential Schools (EMRSs): Operational schools increased from 129 (2014–15) to 511 (2026); enrolment around 1.68 lakh.
- PM-YASASVI: In 2024–25, 20.61 lakh pre-matric and 24.53 lakh post-matric scholarships provided.
- Scholarships for Scheduled Tribe Students:
  - Pre-Matric Scholarship: Benefited 28.99+ lakh tribal students between April 2024 and August 2026.
  - National Fellowship for ST Students: Supported 2,961 research scholars in 2025–26; 56% women.
- Scholarships for Higher Education for Young Achievers Scheme (SHREYAS): 8,571 SC students studied in institutions including IITs, IIMs, NITs and AIIMS in 2025–26.
- National Action for Mechanised Sanitation Ecosystem (NAMASTE): 89,915 sewer/septic-tank workers and 2.81+ lakh waste pickers validated.
- Scheme for Economic Empowerment of De-Notified Tribes (SEED):
  - ₹26.75 crore disbursed for education of 4,485 DNT students in 2025–26.
  - 73,569 Ayushman Bharat cards issued to DNT families. India's rural and tribal development strategy is moving from welfare delivery to empowerment and decentralised partnerships. Discuss. Mains Question

PM CARES Fund Under Scrutiny Over Transparency

The PM CARES Fund's transparency has come under scrutiny, as no audited financial statements have been publicly available since FY 2022-23. Major Concerns

- Public Authority Ambiguity:
  - Despite PM/Union Ministers as trustees and PMO administrative support, government maintains PM CARES is neither a government fund nor a "public authority" under RTI Act, 2005; RTI status remains under judicial consideration.
- Limited Parliamentary Scrutiny:
  - In 2026, PMO told Lok Sabha Secretariat that PM CARES questions were inadmissible as it is not primarily a Government of India concern; critics see weaker accountability, though the Speaker has final say on admissibility.
- No CAG Audit: Audited by an independent chartered accountant, not CAG; critics seek stronger public audit/ disclosure due to public purpose, official association and significant PSU contributions.
- PSU Contributions: CSR contributions by government- owned PSUs strengthen the debate over public accountability and disclosure.
- Institutional Overlap: Questions arise over separate PM CARES alongside PMNRF and statutory NDRF under Section 46, Disaster Management Act, 2005; Supreme Court (2020) held PM CARES and NDRF are distinct with different objects/purposes. Key Facts Aspect: Quick Revision Nature & Origin: Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund; Public Charitable Trust established in March 2020 for emergencies, calamities and distress situations such as COVID-19. Objectives: Relief during public-health emergencies and natural/man-made calamities; healthcare/pharmaceutical facilities, infrastructure, research and other assistance. Trust Structure: Prime Minister: ex-officio Chairperson; Defence, Home and Finance Ministers: ex-officio Trustees; PM may nominate other pro bono Trustees. Funding: Entirely voluntary contributions; no budgetary support; eligible CSR contributions from companies and PSUs accepted. Tax/CSR Status: Donations qualify for 100% deduction under Section 133, Income-tax Act, 2025 (earlier Section 80G, 1961); company contributions qualify as CSR under Companies Act, 2013. Foreign Contributions: Exempt from FCRA, 2010 provisions; may receive overseas donations through a separate foreign-contribution account. FY 2022-23: Receipts ~`6,723 crore; payments ~`439 crore; closing balance ~`6,284 crore as on 31 March 2023. Steps to Enhance Accountability
- Clarify Legal/RTI Status: Government or Parliament should define whether PM CARES is a public authority under RTI Act, 2005 through a clear statutory framework.
- Stronger Audit/Oversight: Adopt stronger public-audit standards, detailed auditor observations, utilisation certificates and periodic independent scrutiny, especially given PSU contributions.

- Time-Bound Disclosure: Publish audited accounts, receipts, expenditure, project-wise utilisation and closing balances annually within a fixed timeline.
- Parliamentary Accountability: Consider questions case- by-case under Lok Sabha rules, with admissibility decided by the Speaker rather than blanket exclusion.
- Outcome-Based Disclosure: Publish major donor categories, project-wise allocations, beneficiary criteria, implementing agencies and measurable outcomes while protecting legitimate privacy. Transparency and accountability are essential for public trust in emergency relief funds. Discuss in the context of the PM CARES Fund and the debate over its legal and institutional status. Mains Question

Tribunals Reforms Bill, 2026

The Lok Sabha passed the Tribunals Reforms Bill, 2026 by voice vote without debate. It seeks to replace the Tribunals Reforms Act, 2021 and establish a National Tribunals Commission (NTC) to oversee tribunal appointments and service conditions. Key Provisions of the Bill

- Repeal of 2021 Act: Repeals the Tribunals Reforms Act, 2021 and aligns tribunal appointments/service conditions with SC directions on judicial independence and separation of powers.
  - Madras Bar Association v. Union of India rulings (2010–2025) restricted executive overreach in tribunals.
- National Tribunals Commission: Establishes the NTC for appointments, performance review, complaints, and the National Tribunals Data Grid.
  - Composition: Chairperson (who has been a Judge of SC or a Chief Justice of HC), 2 Judicial Members and 2 Technical Members.
  - Technical members require 25 years' relevant experience.
  - Tenure: 5 years or up to 70 years for Chairperson and 67 years for members, whichever is earlier.
  - Appointments by Central Government; CJI consultation for Chairperson and judicial members; Secretariat headed by a Central Government Secretary.
- Selection of Tribunal Members: Search-cum-selection committee recommends one candidate plus one waitlisted name; appointment must be finalised within 3 months.
- Reappointment: Based on previous performance, with consultation of the concerned Tribunal Chairperson for members.
- Removal: Grounds include insolvency, moral-turpitude conviction, incapacity, abuse of position and conflict of interest; tribunal members may also be removed for incompetence, inefficiency or paid assignments.
- Service Conditions: Central Government Rules will govern qualifications, selection, salaries, allowances, resignation, removal and other service conditions. 2021 Act Provisions Struck Down by Supreme Court Provision Supreme Court Position Arbitrary; excluded younger advocates/experts 50-year minimum despite eligibility based on 10 years' legal age practice. Invalid; undermined judicial independence and Four-year tenure continuity. Minimum five-year tenure restored. Two names per Invalid; increased executive discretion. Committee vacancy should recommend one name per post. Parliament cannot re-enact struck-down Re-enacting invalid provisions without curing defects; judicial review provisions is part of the Basic Structure. Tribunals in India: Background
- Initial Establishment: Tribunals developed parallel to courts to reduce workload and provide expertise; Income Tax Appellate Tribunal (ITAT) (1941) was the first tribunal.
- Constitutional Incorporation (1976): Tribunals were absent from the original Constitution. Based on Swaran Singh Committee (1976) recommendations, Part XIV-A and Articles 323A & 323B were added by the 42nd Constitutional Amendment Act, 1976.
- Part XIV-A:
  - Article 323-A: Parliament can establish Administrative Tribunals for recruitment and service conditions of public servants.
  - Article 323-B: Parliament and State Legislatures can establish tribunals for matters such as taxation, foreign exchange, labour disputes and land reforms.
- Expansion and Consolidation: Sector-specific tribunals expanded from the 1980s; the Finance Act, 2017 merged several tribunals. In 2010, the SC held that legislatures may create tribunals for any Seventh Schedule subject, not only Article 323B matters.
- Judicial Review: In S.P. Sampath Kumar (1986), the SC allowed alternatives to High Courts if equally effective.
- In L. Chandra Kumar (1997), the SC held tribunal decisions subject to High Court and Supreme Court writ jurisdiction; tribunals cannot fully substitute higher constitutional courts. Major Issues
- Executive Dominance: Government controls appointments, salaries, service conditions and removals despite being a major litigant. Rojer Mathew v. South Indian Bank (2019) stressed judicial dominance in selection.
- Vacancies and Pendency: Chronic vacancies cause large backlogs; ITAT had ₹6.7 trillion in disputes in 2024, affecting revenue and investor confidence.
- Short Tenures and Reappointment: Short terms limit experience; reappointment may increase executive dependence and affect impartiality.
- Administrative Dependence: Reliance on parent ministries for finance, infrastructure and staff weakens autonomy.
- Additional Litigation: L. Chandra Kumar v. Union of India (1997) upheld High Court judicial review, creating a possible additional litigation layer.
- Inadequate Infrastructure: Tribunals face shortages in infrastructure, digital facilities and staff, along with non-uniform procedures and service conditions. Reforms Needed
- Independent Administration: Shift financial and administrative control from litigating parent ministries to an independent nodal authority with separate budgetary allocations.
- Streamline Appeals: Create dedicated Tribunal Appellate Benches in High Courts; consider a UK-style two-tier tribunal

system with First-tier and Upper Tribunals, supported by specialised subject-specific Chambers.

- Judicial Impact Assessment: Conduct Judicial Impact Assessments (JIA) before expanding tribunal jurisdiction to estimate required infrastructure, judges and resources.
- Capacity Building: Cross-train technical members in law and judicial members in domain expertise through the National Judicial Academy.
- Pre-Institution Mediation: Mandate mediation for suitable disputes to reduce frivolous litigation and pendency.
- Performance Audits: Independent annual audits of disposal rates, adjournments, pendency and judicial quality, with transparent publication. "Tribunalisation was intended to deliver specialised and speedy justice, but institutional weaknesses have often undermined this objective." Critically examine. Mains Question

Supreme Court's New Handbook on Gender Sensitivity

SC's 2026 report, 'Judgments and Gender: Sensitivity and Compassion in Writing Judgments', seeks trauma-informed, survivor-centric judicial language and courtroom practices, building on its 2023 Handbook on Combating Gender Stereotypes. Key Highlights of SC's New Handbook on Gender Sensitivity

- Evolution of Gender Jurisprudence: Judicial jurisprudence evolved from protective discrimination to stronger safeguards for dignity, autonomy and protection against gender discrimination. Case Key Principle Yusuf Abdul Aziz v. State of Upheld protective discrimination Bombay (1954) (affirmative action) under Article 15(3). Supported in-camera trials and cautioned State of Punjab v. Gurmit against doubting survivor testimony without Singh (1996) corroboration. Established guidelines against workplace V i s h a ka v. S t a t e o f sexual harassment, paving the way for the Rajasthan (1997) POSH Act, 2013 NALSA v. Union of India Recognised transgender identity, dignity (2014) and constitutional rights. Joseph Shine v. Union of Struck down Section 497 IPC on adultery India (2019) as unconstitutional. Prohibited gender stereotyping and Aparna Bhat v. State of suggestions of compromise in sexual- MP (2021) offence cases. State of Jharkhand v. Banned the unscientific two-finger test in Shailendra Kumar Rai rape examinations. (2022) X v. Principal Secretary, Affirmed reproductive autonomy of Health, Delhi (2023) unmarried women. A hostile work environment can constitute Vaneeta Patnaik v. Nirmal continuing sexual harassment, requiring a Kanti Chakrabarti (2025) survivor-sensitive interpretation under the POSH Act, 2013. Key Recommendations
- No Stereotyping: Building on Aparna Bhat v. State of Madhya Pradesh (2021), the Court directed judges to avoid gender stereotypes and marriage/compromise suggestions in rape cases; clothing, marital status, sexual history or lifestyle must not determine consent or credibility (Section 146, Indian Evidence Act, 1872; Section 48, BSA, 2023).
- Rights-Based Language: Replace stereotypical expressions such as "prosecutrix", "modesty", "lust" and "chastity" with terms such as "survivor", "sexual assault" and "bodily autonomy violated"; use inclusive LGBTQIA+ terminology, including SOGIESC (Sexual Orientation, Gender Identity, Expression and Sex Characteristics).
- Victim/Witness Protection: Strengthen Witness Protection Scheme, 2018 (upheld in Mahender Chawla v. Union of India (2018)) and provide mandatory legal aid from the FIR stage (Delhi Domestic Working Women's Forum v. Union of India (1995)).
- In-Camera & Child-Sensitive Trials: Use in-camera rape/ POCSO trials under Section 366(2), BNSS, 2023; video-link/ screen testimony (Sakshi v. Union of India, 2004), support persons for children (Bachpan Bachao Andolan v. Union of India, 2013) and time-bound POCSO trials.
- Witness as Guest: Treat witnesses with dignity; avoid repeated adjournments and long waiting (State of U.P. v. Shambhunath Singh, 2001).
- Pre-Trial Counselling: Provide counselling to reduce anxiety and secondary victimisation. Significance Advances Article 21 (dignity, fair trial), Articles 14 & 15 (substantive equality), and aligns with Convention on Constitutional the Elimination of All Forms of Discrimination against Women (CEDAW), 1979. Reduces Insensitive language and hostile cross-examination deter Secondary reporting. Rights-based judicial language can reduce Victimisation secondary victimisation and promote survivor support. Institutional Promotes a survivor-sensitive, trauma-informed justice Accountability process beyond an exclusively adversarial approach. Complements BNSS 2023 (in-camera trials), Bharatiya Legal Sakshya Adhiniyam, 2023 (BSA) (rape-shield Consistency provisions), POCSO Act 2012, and POSH Act 2013. Related Concerns Non-binding Guidelines are recommendatory; effectiveness Nature depends on judicial training and internalisation. Uniform glossary is difficult to implement in Linguistic Diversity vernacular trial-court proceedings. 80.7% of respondents were unaware of the Low Awareness Witness Protection Scheme. Continuous Sensitisation is an "ongoing process"; language Sensitisation and social attitudes keep evolving. Judicial sensitisation alone cannot remove gender Deep-rooted bias without broader societal behavioural and Gender Bias attitudinal change. How can gender stereotypes embedded in judicial reasoning undermine the constitutional guarantees of equality and dignity? Mains Question

10 Years of Government e-Marketplace (GeM)

GeM completed 10 years of operations on 9th August 2026. Key Features of GeM

- About GeM: Unified digital platform for paperless, cashless, contactless, transparent and competitive government procurement.
- Purpose: Uses digital technology and standardised processes to simplify public procurement.
- Coverage: Serves Central/State Ministries, Departments, PSUs, Autonomous Bodies, local bodies, Panchayats and Cooperatives.
- End-to-End Procurement: Covers seller registration, product listing, bidding, contract award, order fulfilment and payment.

- Transparency & Competition: Supports direct purchase, comparison, e-bidding and reverse auctions with digital records and real-time monitoring.
- Data-Driven Procurement: Uses GeM Availability Report, Past Transaction Summary, Last Purchase Price and price- trend analytics for informed purchasing.
- Integration: Being integrated with Central Public Procurement Portal (CPPP), Indian Railway Electronic Procurement System (IREPS) and Defence Public Procurement Portal (DPPP).
- Scale: Department of Military Affairs crossed ₹1.35 lakh crore cumulative GMV as of 6 Aug 2026. GeM's Role in Expanding the Scale and Inclusiveness of Public Procurement
- Expanding Procurement Scale: Connects 1.37 lakh+ government buyer organisations with nearly 25 lakh sellers/service providers; cumulative procurement exceeds ₹20 lakh crore.
- Broad Marketplace Coverage: Offers 10,660+ product and 350 service categories.
- Digital Procurement Ecosystem: Supports Digital India, Make in India, Aatmanirbhar Bharat, Vocal for Local and Ease of Doing Business through multiple procurement modes, integrated payments and online contracts.
- Ease-of-Business Reforms: Rate Contracts and removal of Caution Money reduce seller compliance burden.
- Innovation Partnerships: Partnered with IN-SPACe for space-tech and Drone Federation India for drone procurement in April 2025.
- Seller Financing through GeMSahay: Provides eligible proprietorship sellers instant, collateral-free, paperless working-capital loans without buyer consent.
- Capacity and Compliance Support: Partnerships with Arun Jaitley National Institute of Financial Management (AJNIFM), CareEdge Ratings, National Centre for Good Governance (NCGG) and Indian Institute of Public Administration (IIPA) support training, research and policy; EPFO integration strengthens manpower-service compliance.
- Last-Mile Support through Suvidha Kendras: 50 GeM Suvidha Kendras being piloted under the June 2026 CSC- SPV partnership for registration, vendor assessment, catalogue creation, capacity building and grievance redressal.
- MSE Participation: In 2025–26, 11 lakh+ MSEs executed 51 lakh+ orders worth ₹2.36 lakh crore+.
- Women-Led Enterprises: 2.1 lakh+ women-led MSEs secured ₹28,000 crore+ procurement, supported by Womaniya and UN Women partnerships.
- SC/ST and Startup Participation: SC/ST enterprise procurement exceeded ₹6,000 crore with nearly 28% annual growth; startup procurement crossed ₹19,000 crore with over 36% annual growth.
- Inclusive Procurement through SWAYATT: Promotes participation of startups, women entrepreneurs, MSEs and SHGs.
- Dedicated Market Platforms: Womaniya supports women entrepreneurs/SHGs, SARAS Collection links rural SHGs with buyers, and Startup Runway 2.0 showcases startup innovations.

Supreme Court Directs Measures to Curb 'Digital Arrest' Scams

SC directed coordinated action by the Centre, States/ UTs, RBI, telecom authorities and investigators to curb digital-arrest fraud and speed up recovery of victims' money.

- SC Directions: RBI to issue an SOP within four weeks for temporary debit holds on mule accounts linked to cyber fraud/money laundering; States/UTs to establish grievance-redressal and money-restoration mechanisms aligned with MHA SOPs for the National Cyber Crime Reporting Portal and Cyber RMS.
- Digital Arrest: Fraudsters impersonate law-enforcement agencies, use spoofed numbers/fake documents, falsely link victims to criminal cases and threaten arrest or account freezing to extract fake fines or security deposits.
- Complaints Declined: I4C data: 1,23,672 complaints in 2024 → 58,249 in 2025 → 16,377 by June 2026.
- Related Initiatives:
  - Money Restoration Mechanism: Data-sharing MoU between RBI Innovation Hub and I4C; covers 1,23,590 branches of 69 banks, with 57 banks participating; ₹18.05 crore restored in 36,290 cases.
  - e-Zero FIR & Cyber Centres: e-Zero FIR operational in 19 States; 14 States have Cyber Crime Coordination Centres. SC directed remaining States/UTs to implement both within four weeks.
  - Telecom Rules: Radio Equipment Possession Authorisation Rules, 2025 notified; User Identification Rules, 2025 in final notification stage.
  - Committee Recommendations: Consider lowering the ₹10-crore CBI threshold and include multiple frauds by the same network that cumulatively exceed it.

Digital Transformation of Indian Judiciary

The e-Courts Mission Mode Project has transformed India's paper-based judiciary into a digitally enabled, transparent and trackable system through e-filing, virtual courts, digitised records, e-Sewa Kendras, video conferencing, AI tools and integrated criminal-justice platforms. Key Features of e-Courts Mission Mode Project

- Phase I – Basic Computerisation (2011–2015): Computerised 14,000+ courts and created basic network infrastructure.
- Phase II – Citizen-Centric Digital Services (2015–2023): Introduced NJDG, eFiling and eSewa Kendras and expanded video-conferencing infrastructure over fivefold.
- Phase III – Digital and Intelligent Courts (2023–2027):
  - Focuses on a digital, paperless and technology-driven judiciary.
  - 4,519 courts have e-filing and 474 courts have paperless infrastructure.

- 538 courts support virtual hearings, 1,806 eSewa Kendras are functional, and VC Video Conferencing (VC) facilities cover 7,553 courts, jails and hospitals.

GOBARdhan: National Circular Bioenergy Scheme

Recently, the Union Cabinet approved GOBARdhan, Natio clean energy and promote rural prosperity.

- National Service and Tracking of Electronic Processes (NSTEP): 6,895 courts; Inter-operable Criminal Justice System (ICJS): all High Courts; 734 court websites migrated to Secure, Scalable and Sugamya Website as a Service (S3WAAS) platform; Software-Defined Wide Area Network (SD-WAN): 174 sites.
- Uses AI, OCR and analytics; IIT Madras is developing the Learning Management System (LMS); solar facilities cover 1,626 court complexes. AI-Assisted Judicial Processes

- Funding: ₹53.57 crore of the ₹7,210 crore Phase III outlay is earmarked for AI/ML applications in HCs through 2027.
- Tools: LegRAA supports legal research/document analysis; Digital Courts 2.1 enables paperless case management; ASR-SHRUTI provides voice-to-text; PANINI assists translation and dictation of orders/judgments.
- Multilingual Judgments: eSCR portal translates judgments into 18 Indian languages; 83,000+ translations, including 36,344 in Hindi, were completed by March 2025.
- AI Filing Scrutiny: An IIT Madras tool detects defects and extracts case metadata from e-filed petitions; prototype access given to 200 Advocates-on-Record, with e-filing/ ICMIS integration underway. onal Circular Bioenergy Scheme, to convert organic waste into Key Facts about the Scheme
- About: GOBARdhan, or the National Circular Bioenergy Scheme, aims to convert organic waste such as animal waste, crop residue, kitchen waste and market waste into compressed biogas and bio-slurry.
- Implementation: Approved on 6th August 2026, the scheme will be implemented from FY 2026–27 to FY 2035–36 under the Ministry of Petroleum and Natural Gas.
- Financial Outlay: The scheme has a total outlay of ₹23,731 crore and consolidates the previously fragmented CBG ecosystem under a unified national framework.
- Support Framework: The scheme is structured around six growth engines covering assured offtake, pricing, capital support, pipelines, credit guarantees and ecosystem development.
- Objectives and Vision: The scheme seeks to increase domestic CBG production nearly ten-fold, attract private.

SC Extends Protection Against Domestic Cruelty to Live-in Relationships

In Dr. Lokesh B.H. & Ors. v. State of Karnataka & Anr. (20 apply to a live-in relationship that is in the nature of marriage, investment and develop a circular bioeconomy in which waste supports growth, villages become clean-energy centres and farmers contribute to national energy security.

- Need: India imports nearly half of its natural gas requirements, while disruptions around the Strait of Hormuz—through which about 55–60% of its LNG imports pass—highlight the urgent need to strengthen domestic energy production and security.
- GOBARdhan Unified Registration Portal:
  - The GOBARdhan Unified Registration Portal enables existing and proposed CBG/Bio-CNG plants to obtain the registration number required for accessing MoPNG support.
  - As of 6th August 2026, 1,908 plants were registered, including 217 commissioned plants producing 0.4 MMSCMD and 339 plants under construction. 026), SC held that Section 498A IPC (now Section 85 BNS) may provided intent to marry is established.
- Purposive Interpretation of Law: The Court held that Section 498A IPC aims to prevent domestic cruelty, irrespective of a formal marriage. Though it originally protected only legally married women, courts later extended it to women deceived into void or voidable marriages.
  - Denying protection to women in eligible live-in relationships while protecting married women violates Article 14, as the distinction has no rational nexus with preventing domestic violence.
  - The Court adopted the DV Act concept of a "relationship in the nature of marriage", identified through shared finances, domestic life, relationship stability, and public recognition as spouses.
- Initial Burden of Proof: The female live-in partner must initially establish the intent to marry. No fixed parameters were prescribed, but a higher standard of proof applies because criminal liability is involved.
- DV Act vs Criminal Law: The Protection of Women from Domestic Violence Act, 2005 mainly provides civil remedies such as maintenance and protection orders, while Section 498A IPC/Section 85 BNS provides criminal sanctions and deterrence; therefore, both laws are distinct.
- Safeguard Against Arrest: The Court directed strict compliance with Arnesh Kumar v. State of Bihar (2014), requiring a mandatory preliminary inquiry before arresting the live-in partner or their relatives.

Indian Statistical Institute Bill, 2026

The Bill introduced in Lok Sabha seeks to reform ISI governance, strengthen research and interdisciplinary collaboration, and develop it as a global centre of excellence, but has raised concerns over Central control and institutional autonomy. Key Provisions

- Legal Status: Repeals the Indian Statistical Institute Act, 1959 and converts ISI from a registered society into a not- for-profit statutory body corporate.
- Visitor: The President of India will review functioning, order inquiries and issue binding directions based on reviews.
- Board of Governors: Replaces the 33-member Council with an 11-member Board comprising a Visitor-nominated Chairperson, two Central officials, four eminent persons and four ISI representatives.
- Board Functions: Administration, budgets, departments and centres, degrees, regulations, posts and periodic performance reviews.

- Councils and Director: Creates an Academic Council, Finance Committee and centre-level Management Councils; the Director is appointed by the Board with the Visitor's prior approval and serves as Chief Executive Officer.
- Regulations: Central approval is required only for the first set of regulations, unlike the 1959 Act's requirement for every amendment. Associated Concerns An 11-member Board may reduce faculty participation Institutional compared with the existing representative 33-member Autonomy Council. Executive Visitor and Central Government roles in appointments, Oversight reviews and directions may increase executive influence. Academic The Academic Council remains the principal academic body, Authority but final authority rests with the Board. Research Industry collaboration and revenue generation may shift Priorities focus from fundamental research to market-driven work. Historical Evolution of ISI
- Historical Status: Founded in 1931 by P.C. Mahalanobis as a laboratory at Presidency College; declared an Institution of National Importance under the Indian Statistical Institute Act, 1959.
- Current Reach: Headquartered in Kolkata with centres in Delhi, Bangalore, Chennai and Tezpur.
- Apex Authority: A 33-member council with an elected chairman, independent scientists, and six Central representatives from MoSPI, the Ministry of Finance, and RBI.
- Executive Independence: The council directly appoints the institute's director, who is the academic and administrative head. Measures for Effective Reform
- Balanced Governance: Ensure representation of government nominees, elected faculty and independent experts to combine efficiency with academic independence.
- Protect Academic Freedom: Define limits on the Visitor's powers and safeguard research, curricula and publication of statistical findings from executive interference.
- Merit-Based Leadership: Use an independent Search-cum-Selection Committee with eminent academicians and peer institutions for appointing the Director.
- Research Funding: Maintain adequate public funding for fundamental statistical and socio-economic research while encouraging industry collaboration. Discuss the importance of institutional autonomy in Institutions of National Importance. How can governance reforms balance accountability with academic freedom? Mains Question

Pradhan Mantri Viksit Bharat Rojgar Yojana

PM-VBRY completed one year on 1st Aug 2026, advancing formal employment and social security coverage. Key Points

- About: PM-VBRY incentivises first-time employment and additional job creation by supporting employees and employers.
- Implementation: Administered by the Employees' Provident Fund Organisation (EPFO), it expands formal employment and social security coverage.
- Implementation Period: Operational from 1st August 2025 to 31st July 2027, with an outlay of ₹99,446 crore.
- Employment Target: Aims to create over 3.5 crore jobs, including 1.92 crore first-time employees.
- Social Security Expansion: Promotes EPFO-linked employment across sectors, with emphasis on labour- intensive manufacturing and emerging industries.
- Support to National Manufacturing Mission: Strengthens the industrial workforce by encouraging formal job creation.
- Two-Part Incentive Framework: Provides separate incentives to first-time employees and employers.
- Incentive to First-Time Employee: Employees earning up to ₹1 lakh per month receive one month's EPF wage, capped at ₹15,000. The first instalment is paid after six months, and the second after 12 months of continuous service and completion of a financial literacy programme. Part of the incentive is placed in a designated savings instrument.
- Support to Employers: Employers receive up to ₹3,000 per month for two years for each eligible additional employee earning up to ₹1 lakh and retained for at least six months. In manufacturing, support continues for the third and fourth years. Impact of PM-VBRY
- Employment and Workforce Formalisation: In its first year, PM-VBRY promoted new and first-time hiring, expanded EPFO-based social security and strengthened the organised workforce.
- Beneficiary Reach: Since Aug 2025, over 72 lakh first-time employees joined the formal workforce, while more than 15 lakh beneficiaries received employment-linked incentives.
- Women's Participation: Women account for nearly 30% of beneficiaries.
- Digital Implementation: The scheme uses an EPFO-linked digital platform, Aadhaar authentication, UANs, ECR filings and Face Authentication Technology through the UMANG App.
- Transparent Benefit Delivery: Incentives are transferred through DBT to Aadhaar-linked bank accounts, while the PM-VBRY portal enables real-time beneficiary and sector- wise monitoring.
- Outreach and Support: Nationwide campaigns and joint teams of EPFO, ESIC and the Chief Labour Commissioner support grassroots participation and implementation.

PM-KISAN Scheme

The Union Cabinet approved PM-KISAN's continuation for 2026–27 to 2030–31 with an outlay of ₹3.15 lakh crore.

- The Budget 2026–27 allocated ₹60,000 crore. Key Points
- About: Central Sector Scheme launched in 2019 to provide assured income support to landholding farmer families with cultivable land.
- Assistance: ₹6,000 annually in three instalments of ₹2,000.
- Transfer: Directly to Aadhaar-seeded bank accounts through DBT.
- Objectives: Support farm inputs, income, productivity and reduce informal credit dependence.
- Identification: Eligible farmer households identified by State Governments.

- Monitoring: Multi-tier national, State and district framework; national review chaired by the Cabinet Secretary.
- Digital Delivery: PM-KISAN portal and app enable registration, verification, tracking and e-KYC.
- Key Achievements:
  - Over ₹4.47 lakh crore transferred through 23 instalments.
  - Over ₹1.71 lakh crore disbursed during Covid-19.
  - Women farmers received over ₹1.06 lakh crore and form nearly one-fourth of beneficiaries.
- Impact: Over 92% of beneficiaries used PM-KISAN assistance for agricultural activities and investment (NITI Aayog).
  - 85% of beneficiaries reported higher agricultural income and reduced dependence on informal credit.
  - Contributed to agricultural growth between 2020–21 and 2025–26 - cultivated area increased by about 9.65%, productivity by 10.53% and total foodgrain production by 21.18%.

Pradhan Mantri Surya Sarovar Yojana

The Union Cabinet approved PM-SSY to boost India's renewable energy capacity and energy security. PM-SSY

- About: A Central Sector Scheme promoting Floating Solar Photovoltaic (FSPV) projects integrated with Energy Storage Systems (ESS).
  - FSPV: Solar panels are mounted on buoyant platforms over inland water bodies, expanding renewable capacity without competing for land.
- Outlay and Target: ₹5,070 crore to develop 5,000 MW of FSPV capacity between FY 2026–27 and FY 2030–31.
- Implementing Basis: NISE estimates India's floating solar potential at 102.18 GWp across reservoirs and inland water bodies, against about 700 MW installed capacity.
- Storage Mandate: Co-located ESS with at least 2-hour storage, totalling 10,000 MWh.
- Financial Support:
  - Central Financial Assistance: ₹1 crore per MW after successful commissioning of eligible projects.
  - Project De-risking: Up to ₹50 lakh per project for bathymetry, hydrography, feasibility and environmental studies.
- Significance:
  - Capacity Addition: Increase floating solar capacity from about 700 MW to 5,700 MW.
  - Climate Goals: Reduce nearly 10 million tonnes of CO_2 emissions annually.
  - Employment: Generate about 16,000–17,000 full-time equivalent jobs.
  - Aatmanirbhar Bharat: Promote domestic production of floatation systems, PV cells, modules and energy storage systems.
  - Grid Stability: 2-hour BESS will improve grid reliability and manage peak demand.
- Omkareshwar Floating Solar Park: India's largest operational floating solar project at 278 MW on the Narmada River, Madhya Pradesh; planned capacity 600 MW.
- Global Status: Floating solar capacity reached about 9.6 GW in 2024, with Asia accounting for nearly 90%. Status of Solar Energy in India
- Capacity: Increased from 3 GW in 2014 to about 129 GW in 2025; supports the 500 GW non-fossil capacity target by 2030.
- Leading States: Rajasthan, Gujarat, Maharashtra and Tamil Nadu.
- Grid Integration: Green Energy Corridor strengthens transmission and renewable energy evacuation.
- Rooftop and Agricultural Solar: PM Surya Ghar Yojana enabled around 24 lakh rooftop installations by December 2025; PM-KUSUM promotes grid-connected solar pumps.
- BESS: ₹5,400 crore VGF scheme supports 30 GWh battery storage to improve renewable energy reliability.
- Domestic Manufacturing: India achieved 100 GW solar PV module manufacturing capacity under ALMM.
- International Solar Alliance: India-led initiative headquartered in Gurugram, mobilising solar investment and demand among sun-rich countries between the Tropics of Cancer and Capricorn.

Jan Aushadhi Nutraceuticals

The Union government highlighted affordable nutraceutical products under the Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP), available through Janaushadhi Kendras.

- Aim: Make quality nutritional supplements affordable and accessible, especially for low-income families. To advance the vision of "Quality Healthcare and Nutrition for All".
- Coverage: Includes protein supplements, immunity products, nutritional foods and specialised formulations for children, women, senior citizens, fitness enthusiasts and people with specific health conditions. Nutraceuticals
- Biologically active products derived from food that combine nutritional and therapeutic benefits.
- The term combines "nutrition" and "pharmaceutical" and was coined by Dr Stephen De Felice in 1989.
- Include vitamins, minerals, proteins, probiotics, functional foods, herbal products and foods designed for specific medical needs.
- Support health promotion, disease prevention and management of conditions such as cardiovascular diseases, diabetes, cancer, skin disorders and immune- related problems.
- Challenges include low bioavailability, instability, poor taste and formulation difficulties for children and old adults.
- Nanoformulations, liposomes, nanoemulsions and lipid-based carriers can improve stability, absorption, controlled release and effectiveness.
- Require strict regulation to prevent contamination, adulteration and harmful drug interactions. PMBJP
- Launched: November 2008 by the Department of Pharmaceuticals, Ministry of Chemicals and Fertilisers.
- Implemented by: Pharmaceuticals and Medical Devices Bureau of India.

- Objectives: Affordable generic medicines, lower out-of-pocket expenditure, menstrual hygiene and employment generation by encouraging individual entrepreneurs to establish Jan Aushadhi Kendras.
- Coverage: Over 19,000 Kendras by March 2026; target of 25,000 by March 2027.
- Products: Around 2,100 medicines and 300 surgical and medical items.
- Savings: Medicines are generally 50–80% cheaper than branded equivalents.
- Quality Assurance: WHO-GMP manufacturers and NABL-accredited laboratory testing.
- Special Incentive: A one-time special incentive of ₹2 lakh is provided for Kendras opened by women, ex-servicemen, Divyangjan and Scheduled Caste or Scheduled Tribe entrepreneurs, as well as those established in Aspirational Districts, Himalayan regions, island territories and North-Eastern States.
- Janaushadhi Suvidha: Oxo-biodegradable sanitary pads at ₹1 (menstrual hygiene); sales crossed 100 crore pads by March 2026.
- Jan Aushadhi Sugam App: Helps in locating Kendras, medicine availability and comparison of prices of generic and branded medicines.

Revamped Khelo India Scheme

Union Cabinet approved an expanded Khelo India Scheme and enhanced Assistance to National Sports Federations (ANSFs) with a combined financial outlay of ₹36,441 crore for the period 2026–27 to 2030–31.

- Objective: Promote youth development and nation- building through opportunities from grassroots to elite sports.
- Policy Alignment: Aligned with Khelo Bharat Niti 2025 and NEP 2020, integrating sports with education, fitness, technology and high-performance training.
- Athlete Development Pathway: Talent identification → scientific training → competitions → international exposure → Olympic preparation through Khelo India and TOPS.
- Institutions: National and Khelo India Centres of Excellence, SAI Training Centres, accredited academies, Khelo India Centres and Armed Forces' Youth Sports Companies.
- School and Talent Initiatives: Khelo India Feeder Schools, Khelo India Utkrishta Vidyalayas and Emerging Khelo India Athletes (E-KIAs) to expand the athlete pool nearly ten- fold.
- Coaching and Technology: National Coach Accreditation Board, unified digital sports platform and partnerships with private and corporate institutions.

Prevention of Insults to National Honour (Amendment) Act, 2026

The Prevention of Insults to National Honour (Amendment) Bill, 2026, passed by Parliament, became an Act after receiving Presidential assent. Key Provisions

- Amends the Prevention of Insults to National Honour Act, 1971 to include Vande Mataram within its scope.
- Section 3 of the Act, 1971: It prohibits intentionally preventing the singing of the National Anthem (Jana Gana Mana) or causing disturbance to an assembly during its singing.
  - The offence is punishable with imprisonment up to 3 years, a fine, or both, while repeat offenders face a minimum imprisonment of 1 year.
- Seeks to give the National Song statutory protection similar to the National Anthem.
- Based on Dr. Rajendra Prasad's 24 January 1950 statement according equal honour to Vande Mataram and Jana Gana Mana. Vande Mataram
- Composed by Bankim Chandra Chattopadhyay in Sanskritised Bengali.
- Published in Bangadarshan on 7th November 1875 and included in Anandamath (1882).
- Set to music by Rabindranath Tagore.
- First two stanzas adopted as the National Song by the Congress Working Committee in 1937.
- Accorded equal honour with Jana Gana Mana on 24 January 1950.
- The Constitution does not expressly recognise a National Song.
  - Article 51A(a) makes it a Fundamental Duty to abide by the Constitution and respect its ideals and institutions, the National Flag, and the National Anthem.
- Role in Freedom Struggle:
  - Rallying cry of the Swadeshi and anti-colonial struggle.
  - First sung by Tagore at the 1896 Calcutta Congress Session.
  - Became a political slogan during the 1905 Partition of Bengal agitation.
- Nationalist Organisations & Press: Bande Mataram Sampradaya (1905) promoted patriotic awareness, while the English daily Bande Mataram (1906), led by Bipin Chandra Pal and Sri Aurobindo, became an influential nationalist publication.
- Hyderabad-Karnataka Movement (1938): Students defied restrictions by singing Vande Mataram, leading to arrests and expulsions.
- Global Influence: Madam Bhikaji Cama unfurled India's tricolour bearing "Vande Mataram" at Stuttgart (1907), Madan Lal Dhingra reportedly uttered "Bande Mataram" before his execution in 1909, and nationalist publications carrying the same name were circulated from Geneva.

Tackling Non-Revenue Water for a Water-Secure Viksit Bharat

India's Viksit Bharat goal depends on water-secure cities, but groundwater over-exploitation, rapid urbanisation and climate change are intensifying urban water stress.

- Urban utilities lose over 30% of supplied water as Non-Revenue Water (NRW), weakening municipal finances, service efficiency and long-term water security. Non-Revenue Water (NRW)

- NRW: NRW is treated water supplied into the distribution network but lost before delivery or billing.
  - Physical Losses: Leakage from old pipelines, broken valves and overflowing reservoirs.
  - Commercial Losses: Faulty meters, illegal connections and unbilled public use.
- NRW is below 10% in advanced global cities but around 40–50% in many Indian metropolitan areas.
  - Nearly half the water treated at a high cost yields zero municipal revenue and never reaches the tap. Challenges in Urban Water Governance
- Financial Unsustainability: Urban Local Bodies (ULBs) recover less than 55% of operation and maintenance costs, limiting infrastructure repair and expansion.
- Dependence on Distant Sources: Reliance on distant rivers and deep aquifers increases pumping costs, drought vulnerability and inter-state disputes.
- Infrastructure and Treatment Gaps: Only about 28% of urban wastewater is treated, while wastewater reuse remains limited.
  - Weak Monitoring: Lack of GIS mapping, SCADA systems and District Metered Areas (DMAs) prevents early detection of leaks and efficient network management.
- Inequitable Distribution: Poor households often depend on expensive tankers, while connected households receive subsidised piped water.
- Institutional Fragmentation: State agencies develop infrastructure, while financially and technically weak ULBs operate it, creating accountability gaps.
- Ecological Degradation: Encroachment of wetlands, lakes, floodplains and recharge zones increases both urban flooding and summer water scarcity. Measures Needed for Effective Urban Water Governance
- Mandate Sponge City Infrastructure: Integrate permeable pavements, bioswales and restored peri-urban wetlands into master plans for aquifer recharge and flood mitigation.
- Decouple Water Supply: Legally separate potable and non-potable networks and enforce Zero Liquid Discharge (ZLD) for heavy industries and large commercial complexes using recycled municipal effluent.
- Price Groundwater Extraction: Introduce volumetric charges on private borewells in affluent and commercial areas to curb groundwater depletion.
- Integrate GIS and SCADA: Digitise underground assets through GIS and use SCADA for real-time pressure monitoring and predictive leak management.
- Ring-Fence NRW Budgets through DMAs: Divide networks into District Metered Areas (DMAs) and link state fund devolution to verified reductions in Non-Revenue Water (NRW).
- Conduct Concurrent Sewer Audits: Audit sewer networks alongside water systems to prevent sewage leakage, groundwater contamination and disease outbreaks.
- Regulate the Tanker Market: Mandate municipal licensing, GPS tracking and water-quality testing for private tankers.
- Redefine Service Benchmarks: Measure success through equitable water security, prioritising pressure management and smart standposts in informal settlements.
- Create Water Regulatory Authorities: Establish statutory State Urban Water Regulatory Authorities to set NRW targets, standardise pumping-energy audits and rationalise tariffs.
- Use Hybrid Annuity Models: Link private concessionaire payments under HAM-based PPPs to verifiable long-term reductions in NRW. What is Non-Revenue Water (NRW)? Discuss its implications for urban governance and suggest measures to reduce NRW in Indian cities. Mains Question

Gen Z Protests: Redefining Democratic Participation in India

Generation Z-led protests, spearheaded by the satirical CJP, have emerged over alleged NEET irregularities, rising graduate unemployment, and the increasing cost of education.

- The demonstrations, compared with youth movements in Bangladesh, Nepal, Indonesia, and Peru. How are Gen Z Protests Reshaping Global Politics?
- Gen Z: Gen Z, or Zoomers, generally includes people born from the mid-1990s to early 2010s.
  - It is marked by digital nativity, social media use, and strong civic awareness.
- Global Examples Country — Trigger — Outcome Bangladesh — Student protests over job quotas — Government change and formation of an interim administration Nepal — Anti-corruption protests — Political change and rise of youth-backed leadership Indonesia — Lawmakers' privileges amid economic hardship — Withdrawal of several controversial measures Peru — Crime and political instability — Further political instability and leadership changes India — Alleged NEET paper leak and demand for exam reforms — Greater pressure for accountability and examination reforms Evolution of Youth Movements
- Ideological Politics (1950s–1960s): Campus-based movements led by organisations such as SFI and ABVP.
  - Focused on language, education, and ideological mobilisation.
  - Key Developments: Anti-Hindi Agitation (1965) in Tamil Nadu & Naxalbari Movement (1967) with significant student participation.
- Anti-Establishment Mobilisation (1970s): Youth movements expanded beyond campuses to oppose corruption, inflation, and authoritarianism.
  - Key Developments: Nav Nirman Andolan (1974) in Gujarat & JP Movement (1974–75) against corruption and misuse of power.
  - Student activism influenced developments preceding the Emergency (1975–77).
- Identity and Social Justice (1980s–1990s): Movements centred on regional identity, migration, and reservation policies.
  - Key Developments: Assam Agitation (1979–85) led by AASU, resulting in the Assam Accord (1985).

- Anti-Mandal Protests (1990) against reservation in education and public employment.

- Rights-Based Activism (2000s–2010s): Internet and social media strengthened campaigns for transparency, accountability, civil rights, and gender justice.
  - Key Developments: India Against Corruption Movement (2011) demanding the Jan Lokpal Bill. Nirbhaya Protests (2012), contributing to reforms in criminal laws concerning women's safety.

- Role in Politics:
  - Gen Z has become a major political force against corruption, unemployment, inequality, and governance failures.
  - Its movements are usually decentralised, digitally coordinated, and youth-led.
  - Sustained mobilisation has contributed to policy reversals, leadership changes, and political reforms.

- Gen Z and Issue-Based Activism (2020s–Present): Movements are increasingly digital, decentralised, and issue-specific, focusing on education, employment, governance, and social justice.
  - Key Developments: Anti-CAA/NRC protests (2019–20); Agnipath protests (2022).
  - CJP movement (2026) over alleged NEET irregularities, unemployment, and rising education costs. Major Shifts in Youth Movements

- From Charismatic Leaders to Decentralised Networks: Movements have shifted from leaders like JP Narayan and Anna Hazare to leaderless, digitally coordinated networks.

- From Ideology to Issue-Based Activism: Focus has moved from ideological politics to issues such as education, unemployment, climate action, examination integrity, and gig workers' rights.

- From Party-Linked to Independent Mobilisation: Recent movements often function outside political parties, using memes, satire, and online campaigns.

- From Physical to Hybrid Protests: Modern movements combine social media mobilisation with street demonstrations, enabling faster and wider participation.

- From Campus Issues to National Policy Debates: Youth movements increasingly shape debates on education, employment, governance, accountability, and institutional reforms. Underlying Causes of Youth Disillusionment Macroeconomic Asymmetries: The "Educated Unem- ployed"

- Jobless Growth and Skill Mismatch: Economic growth has not generated enough secure jobs for educated youth.
  - The ILO Report 2024 states that youth constitute 83% of India's unemployed, while graduate unemployment is 29.1%, compared with 3.4% among those without schooling. AI and automation may further displace routine jobs, making large-scale reskilling essential.

- Informalisation of Employment: Many new opportunities are concentrated in the gig economy, which often lacks social security, stable incomes, and career progression.

- Educational Inflation: Expansion and privatisation of higher education have increased the number of degrees without matching improvements in employable skills, reducing the economic value of qualifications. Institutional Decay and Compromised Meritocracy

- Shattered Social Contract: Paper leaks, proxy candidates, exam cancellations, and recruitment delays weaken trust in competitive examinations as fair routes to social mobility.

- Regulatory Deficit: Weak oversight of examination systems and the commercialisation of coaching have made education increasingly costly and exclusionary. Sociological and Psychological Dimensions

- Anomie and Relative Deprivation: The gap between aspirations and available opportunities creates frustration, while exposure to global lifestyles through digital media intensifies feelings of deprivation.

- Student Suicides: Financial pressure, education loans, and examination failure have increased psychological distress. The NCRB ADSI 2024 reported that those aged 18–45 accounted for 65.6% of suicides, while students formed 8.5% of total cases.

- Brain Drain: Repeated institutional failures are pushing skilled and middle-class youth to seek education and employment abroad, causing loss of human and financial capital. Political Economy and Democratic Alienation

- Failure of Interest Aggregation: Mainstream politics often gives limited attention to Gen Z concerns such as housing, inflation, employment, and economic security.

- Shrinking Space for Dissent: Use of Section 163 of the BNSS, internet shutdowns, surveillance, and prohibitory orders against protests deepens youth distrust and democratic alienation. Measures Needed to Address Youth Discontent

- Adopt a Youth-Centric Policy Framework: Introduce Youth in All Policies (like Finland's Youth Policy) so that major policies assess their impact on young people.

- Expand New-Age Employment: Promote the creative, creator, sports, care, space, and green economies through finance, incubation, and intellectual property support.

- Institutionalise Youth Participation: Establish a National Youth Council and strengthen Youth Parliaments for structured involvement in policymaking.

- Restore Trust in Examinations: Strengthen fast-track courts under the Public Examinations Act, 2024, reform the NTA, and use secure technologies such as blockchain verification and encrypted testing.

- Reform Education and Skills: Implement the NEP 2020 by integrating AI, entrepreneurship, climate literacy, financial literacy, and apprenticeships into higher education.

- Strengthen Youth Mental Health: Create a National Youth Well-being Mission providing counselling, career guidance, and suicide-prevention services in educational and coaching institutions.

- Create Multiple Success Pathways: Reduce dependence on single high-stakes examinations through multiple testing windows, micro-credentials, PARAKH, and skill-based recruitment.

- Promote Digital Democracy: Develop MyGov into an interactive platform for youth participation in draft policies, budgets, and legislation.
- Support Civic Innovation: Establish Youth Innovation Missions and civic-tech incubators aligned with Atal Innovation Mission and Startup India.
- Prepare a National Youth Strategy 2047: Set measurable targets for education, employment, entrepreneurship, mental health, civic participation, and digital inclusion.
- Generate Employment-Intensive Growth: Support labour-intensive sectors such as textiles, tourism, leather, footwear, and food processing, alongside the PLI Scheme.
  - Improve affordable credit through OCEN, integrate MSMEs into Global Value Chains, and implement the Code on Social Security, 2020 for gig-worker welfare and insurance. Youth aspirations increasingly shape democratic governance in India. Examine the structural factors driving youth disillusionment and suggest policy reforms. Mains Question

Public Examinations Amendment Bill, 2026

The Union Government dismissed 47 NTA officials, introducing the Public Examinations (Prevention of Unfair Means) Amendment Bill, 2026, and forming a high-powered task force chaired by former UIDAI chief Nandan Nilekani to strengthen public examination integrity amid concerns over NEET and CJP protests. Key Reforms to Ensure Integrity of Public Examinations

- Public Examinations (Prevention of Unfair Means) Amendment Bill, 2026
  - Harsher Imprisonment Terms: General offences, including paper leaks and OMR tampering: 5–10 years' imprisonment, up from a minimum of 3 years.
  - Organised examination fraud: Minimum imprisonment increased from 5 to 7 years.
- Steep Financial Penalties: General offences: Maximum fine increased from ₹10 lakh to ₹50 lakh.
  - Organised crime networks: Minimum fine increased from ₹1 crore to ₹10 crore.
- Accountability of Service Providers: Complicit private IT vendors or printers may face fines up to ₹5 crore, against ₹1 crore earlier. Debarment from public examinations increased from 4 to 8 years.

Right to Protest and Excessive Policing

Violent clashes during the youth-led 'Chalo Sansad' march in New Delhi have reignited debate over the constitutional limits of policing public protests and the State's power to restrict civil and digital liberties. Constitutional Basis for the Right to Protest

- Right to Protest: The Constitution guarantees the right to protest through FR (Part III) but does not explicitly mention the term "protest".
  - Article 19(1)(a): Freedom of speech and expression.
  - Article 19(1)(b): Right to assemble peacefully and without arms.
  - Article 19(1)(c): Right to form associations or unions.
  - Article 21: Right to life and liberty, including right to live with dignity and voice grievances against the State.
  - Essential to hold the executive accountable, ventilate public grievances & foster informed public discourse.
- Limitations: It is not absolute. State can impose "reasonable restrictions".
  - Under Article 19(2): Restrictions on freedom of speech in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality, or in relation to contempt of court, defamation, or incitement to an offence.
  - Under Article 19(3): Restrictions on the freedom of assembly in the interests of the sovereignty and integrity of India or public order.
- Statutory Framework:
  - BNSS 2023, Section 163: Empowers Executive Magistrates to issue prohibitory orders in urgent situations.
  - Delhi Police Act, 1978: Authorise law enforcement to regulate assembly routes, timings, and conditions.
- Unlawful Assembly: Under the BNS 2023, a gathering of 5 or more individuals becomes unlawful, only if its common object involves using criminal force, resisting the law, committing an offence, or compelling others by threat. A lawful assembly can turn unlawful if its conduct changes during the event. Standards and Laws Govern Police Action and Crowd Control
- Democratic Policing Framework: Police are guardians of citizen rights and the rule of law (NHRC Manual). Excessive force undermines public trust and may escalate unrest.
- International Guidelines: UN Basic Principles on the Use of Force and Firearms (1990) mandate that force be lawful, necessary, and proportionate.
- Principle of Minimum Force: Under the BNSS, 2023 and police code, warnings and persuasion must precede only the irreducible minimum force necessary.
- Identification and Accountability: BNSS, 2023 and D.K. Basu (1997) requires arresting officers to wear visible name tags, but no similar rule exists for crowd-control personnel, creating accountability gaps. Supreme Court Judgments on Protests and Police Excess
- Ram Manohar Lohia v. Bihar (1965): SC distinguished between "law and order" and "public order." Protests can be restricted only if public order is genuinely threatened.
- Himat Lal K. Shah v. Commissioner (1973): State may regulate but cannot impose arbitrary restrictions on right to protest. Assemblies cannot be arbitrarily restricted.
- Re: Ramlila Maidan (2012): Peaceful protest is a constitutional right; force only as last resort.
- Anita Thakur v. J&K (2016): Excessive force violates fundamental rights.
- Mazdoor Kisan Shakti Sangathan v. Union of India (2018): Right to assemble cannot be extinguished.
- Amit Sahni v. Commissioner (2020): Protests cannot indefinitely occupy public spaces or block traffic. Concerns Regarding Excessive Policing

- Political Interference: Influence over transfers, postings, and investigations undermines police independence and impartiality.
- Training and Legal Gaps: Inadequate police training in human rights, de-escalation, forensic investigation and community policing increases the risk of excessive force. Although India signed the UN Convention Against Torture (UNCAT) in 1997, it has neither ratified it nor enacted a specific anti-torture law.
- Manpower Shortages & Stress: With 155 personnel per lakh (Jan 2024) against the UN norm of 222 and 21% vacancies, long hours cause high stress (83.8% of personnel), leading to coercive practices.
- Disproportionate Force: Tear gas, lathi charges, preventive detention, and mass arrests against peaceful protesters often violate the Doctrine of Proportionality and UN Basic Principles on Use of Force, which mandate minimum necessary force.
- Accountability Issues: Masked or unidentified officers and absent name badges violate transparency norms (D.K. Basu v. West Bengal, 1997).
- Gender-Sensitive Safeguards: Inadequate deployment of women police and reports of harassment breach Article 21 and statutory protections.
- Digital Restrictions: Internet shutdowns and communication blackouts during protests can unduly limit Articles 19(1)(a) & 19(1)(g). Courts require legality, necessity, proportionality, and periodic review (Anuradha Bhasin v. India, 2020).
- Weak Civilian Oversight: Poor implementation of Prakash Singh (2006) directives, including ineffective Police Complaints Authorities and State Security Commissions, fosters impunity.
- Colonial Structure: Most States retain the Police Act, 1861, making the force executive-controlled rather than public-accountable, despite the Model Police Act, 2006. Way Forward
- SOPs & Training: Implement BNSS/BNS provisions; focus on non-lethal crowd control and negotiation.
- Independent Oversight: Enforce Prakash Singh directives by operationalising empowered State and District Police Complaints Authorities.
- Separate Investigation & Law & Order: Adopt 2nd ARC and Malimath Committee recommendations to enhance forensic-based investigations and reduce coerced confessions.
- Modernisation & Capacity Building: Fill 21% manpower gap via the MPF scheme; improve officer-to-citizen ratio; integrate technology like body-worn cameras and CCTV.
- SMART Policing: Transform policing to be Strict & Sensitive, Modern & Mobile, Alert & Accountable, Reliable & Responsive, Tech-savvy & Trained. "The right to protest is fundamental but not absolute." Examine the constitutional and statutory framework governing public protests in India. Mains Question

Amrit Bharat Station Scheme

Recently, the Prime Minister inaugurated 75 redeveloped railway stations across 20 States under the Amrit Bharat Station Scheme, as part of efforts to modernise railway infrastructure and transform stations into passenger-centric transit hubs.

- This is the second major nationwide dedication of redeveloped stations under the scheme. Earlier, on 22 May 2025, the Prime Minister dedicated 103 redeveloped Amrit Bharat Stations across 18 States and Union Territories. Amrit Bharat Station Scheme
- About: Launched by the Ministry of Railways in December 2022, the Amrit Bharat Station Scheme (ABSS) is a long- term, phased initiative to transform railway stations into modern city centres instead of undertaking one-time facelifts.
  - As of July 2026, redevelopment work had been completed at 261 of the 1,340 stations covered under the scheme, with station-specific plans prepared according to local needs, passenger footfall and future growth.
  - The scheme focuses on improving passenger experience, integrating regional architecture, enhancing accessibility, and supporting urban development.
- Key Features:
  - Customised & Culturally Integrated Redevelopment: Stations are redeveloped with location-specific designs combining modern facilities with local heritage, culture, and architectural themes.
  - Passenger Amenities & Modern Facilities: Provides improved entry and exit points, modern waiting areas, covered platforms, clean restrooms, lifts, escalators, free Wi-Fi, executive lounges, business areas, food courts, kiosks, and enhanced passenger information systems. Includes aesthetically designed façades, landscaping, roof plazas, improved lighting, parking facilities, and better circulation areas.
  - Inclusive & Accessible Design: Aligned with the Accessible India Campaign (Sugamya Bharat Abhiyan), the scheme ensures facilities for Divyangjan and passengers with reduced mobility through ramps, accessible parking, low-height counters, Braille signage, tactile pathways, accessible toilets, and lift-equipped subways/foot overbridges.
  - Local Economic Promotion (One Station One Product): Promotes indigenous and regional products by providing kiosks and outlets at railway stations for local artisans, weavers, tribal communities, handicrafts, handlooms, and region-specific food products.
  - Urban Connectivity & Sustainability: Develops stations as multimodal urban centres by integrating railways with bus and metro networks and connecting both sides of cities through improved station planning. Incorporates eco-friendly measures such as green spaces, sustainable infrastructure, and improved environmental planning.

PM Announces Fast-Track Courts to Tackle Public Examination Paper Leaks

The Prime Minister announced the establishment of FTCs for swift punishment of individuals and syndicates involved in public examination paper leaks.

- The move follows protests over irregularities in NEET-UG 2026 examination.
- Delhi HC constituted a Special Fast-Track Court under the Public Examinations (Prevention of Unfair Means) Act, 2024, transferring pending cases for speedy disposal. FTCs

- About: Specialized judicial mechanisms to expedite trial and disposal of specific, high-priority or long-pending cases, reducing burden on regular judiciary.
- Constitutional Backing: SC has read the right to speedy trial into Article 21 (Hussainara Khatoon v. State of Bihar, 1979).
- No Single Central Act: FTCs are created through Finance Commission recommendations, central schemes or High Court notifications.
- Targeted Categories of Cases:
  - Heinous Crimes & Long-Pending Disputes: Eleventh Finance Commission (2000–2005) recommended FTCs for pending criminal cases; Fourteenth Finance Commission (2015–2020) expanded scope to heinous crimes, old civil disputes and vulnerable groups.
  - Vulnerable Demographics: Cases involving women, children, senior citizens, persons with disabilities and terminally ill individuals.
  - Fast-Track Special Courts (FTSCs): Established under Centrally Sponsored Scheme in October 2019 for rape and POCSO Act, 2012 cases; funded partly through Nirbhaya Fund.
  - In 2017, Supreme Court directed setting up special FTCs for criminal trials against MPs and MLAs.
- Constitutional Scrutiny: Under Article 14, classification must have rational basis; speed alone cannot be an arbitrary criterion (State of West Bengal vs Anwar Ali Sarkar, 1952).
- Efficiency vs. Structural Challenges: FTSCs dispose of about 9.5 cases/month compared to regular trial courts' 3.3 cases/month, but over 2.4 lakh cases remained pending by end-2023.
- Landmark Judicial Precedents Governing FTCs:
  - Brij Mohan Lal v. Union of India (2012): States are primarily responsible for FTC continuation; permanent judicial infrastructure is needed.
  - Anita Kushwaha v. Pushap Sudan (2016): Access to justice is a Fundamental Right under Articles 14 and 21.
  - P. Ramachandra Rao v. State of Karnataka (2002): No fixed time limit can be prescribed for criminal trials. Significance of FTCs in Public Examination Paper Leak Cases
- Restoring Institutional Trust: Reinforces meritocracy and confidence in examination systems.
- Strengthening Deterrence: Swift punishment discourages organised examination fraud.
- Protecting India's Demographic Dividend: Reduces exam disruptions and protects career prospects of aspirants. Limitations of FTCs in Tackling Public Examination Paper Leaks
- Post-Facto Remedy: FTCs act after leaks occur and cannot prevent damage caused by cancellations and loss of trust.
- Inter-State Jurisdiction Challenges: Paper leak syndicates operate across States; localised courts need coordinated investigations.
- Digital Forensics Bottleneck: Encrypted apps, dark web, IP logs and crypto transactions require strong cyber- forensic capacity.
- Investigation–Trial Gap: FTCs function only after charge sheets; multi-agency investigations may delay trials.
- Structural Deficiencies: Issues include ad hoc funding, inadequate infrastructure, shortage of judges, prosecutors and support staff.
- Funding Friction: State responsibility after central grants creates uneven performance among States.
- Witness & Prosecution Challenges: Weak witness protection and lack of cyber experts affect conviction rates. Way Forward
- Strengthen NTA: Make NTA an autonomous statutory body with accountability like UPSC.
- Dedicated Investigation SOP: Ensure time-bound investigations and charge sheets through specialised cyber cells.
- Technological Fortification: Use Quantum Key Distribution (QKD) and blockchain-based audit trails for examination security.
- Zero-Tolerance: Introduce Command-Failure Liability Clause under the Public Examinations (Prevention of Unfair Means) Act, 2024. Addressing Institutional Gaps in Public Examinations: The Dr. K. Radhakrishnan Committee Reforms
- FTCs provide post-facto remedies, while prevention requires systemic reforms.
- Dr. K. Radhakrishnan High-Level Committee (2024):
  - Examination Format: Shift from single-day OMR exams to multi- shift CBTs.
  - Examination Logistics: Reduce outsourcing of sensitive logistics.
  - Candidate Identity Verification: Implement DIGI-EXAM biometric identity layer. Fast-Track Courts can ensure speedy justice but cannot substitute systemic reforms in preventing public examination paper leaks. Discuss. Mains Question

Smart Border Architecture to Strengthen India's Border Security

MHA is spearheading a paradigm shift in internal security by developing a technology-driven, integrated command- and-control system to establish a "smart border" architecture across India's land frontiers.

- Strategic Focus Area:
  - The initiative specifically targets regions where physical fencing is not feasible, such as the 3,488-km un- demarcated border with China (Ladakh to Arunachal Pradesh) and flood-prone riverine stretches along the Bangladesh border.
- Pilot Project: The initial pilot project will commence along the Pakistan border, with a major focus on neutralizing the growing threat of cross-border drones used for smuggling and reconnaissance.
- Four-Pronged Security Strategy:
  - The architecture integrates the border guarding forces, local population, State police, and technological solutions to strengthen monitoring and response capabilities.
- Technological Integration: The system creates a common operational picture by linking AI, sensors, surveillance cameras,

and image-processing tools to local command centres, which feed live data to field and New Delhi headquarters.

- Customised Border Solutions:
  - Recognizing that "no two borders are the same," the deployment will avoid a uniform approach, instead utilizing terrain-specific technological solutions for deserts, mountains, and forests, thereby reducing the need for constant physical patrolling.
- Quadrangular Security Grid: Following the first-ever Land Border Districts' Superintendents of Police Conference–2026, a localized security grid involving border communities and police across 119 border districts (17 States/UTs) will be finalized within the next 1.5 years.

Paternity Test in Matrimonial Dispute

SC, in a matrimonial dispute involving allegations of unchastity and disputed paternity, upheld the orders of a lower Court directing a DNA test of the child. Legitimacy of a Child and Paternity test

- Presumption of Legitimacy of a Child: Section 116 of the Bharatiya Sakshya Adhiniyam (BSA), 2023 a child born during a valid marriage or within 280 days after its dissolution is conclusively presumed to be the legitimate child of the husband.
  - Section 116 of the BSA, 2023 corresponds to Section 112 of the Indian Evidence Act, 1872.
- Paternity Test: DNA tests cannot be ordered merely on disputed paternity claims but courts may direct DNA testing only in exceptional cases where it is necessary to resolve the dispute and other evidence is inadequate. Supreme Court Jurisprudence on DNA Testing
- Goutam Kundu v. State of West Bengal (1993): The Supreme Court held that DNA/medical tests cannot be ordered as a first resort and require a strong prima facie case of non-access.
- Banarsi Dass v. Teeku Dutta (2005): The Court ruled that DNA testing should not be directed routinely and must be limited to exceptional cases.
- Nandlal Wasudeo Badwaik v. Lata Nandlal Badwaik (2014): The Court held that where scientific evidence conflicts with legal presumptions, scientific truth may prevail.
- Rohit Shekhar v. Narayan Dutt Tiwari (2014): The Court allowed DNA testing, prioritising the child's right to know biological identity over privacy concerns.
- Ivan Rathinam v. Milan Joseph (2025): The Court held that DNA tests require an "eminent need" and courts must balance privacy, social stigma, and the child's interest. Nation & States

NATION & STATES

Strengthening India's Defence through Self-Reliance

On India's 80th Independence Day, the Government highlighted the transformation of India's defence sector towards greater self-reliance, technological capability and global credibility. Strengthening India's Defence Capabilities and Industrial Base Defence Investment in Strengthening Military Capabili- ties

- Defence Budget: Increased from ₹2.53 lakh crore in 2013–14 to ₹7.85 lakh crore in 2026–27, nearly 3.1-fold growth.
- Capital Expenditure: Increased from ₹94,587.95 crore in 2014–15 to ₹2.19 lakh crore in 2026–27, around 2.3-fold growth, supporting military modernisation. Investment Driving Indigenous Defence Production
- Defence Production: Reached a record ₹1.78 lakh crore in FY 2025–26 under Atmanirbhar Bharat.
- Private-Sector Participation: Public sector accounted for 76% of defence production in FY 2025-26 and private sector 24% of defence production. Domestic Industrial Base Expanding Defence Exports
- Defence Exports: Increased from ₹686 crore in FY 2013–14 to ₹38,424 crore in FY 2025–26, nearly 56-fold growth.
- Indian defence products are exported to 80+ countries; export value rose by over 5,500% in 12 years.
- FY 2025–26 exports: Private sector ₹17,353 crore (45.16%); DPSUs ₹21,071 crore (54.84%).
- 2029 Targets: ₹3 lakh crore defence production and ₹50,000 crore defence exports. Innovation Strengthening the Technological Foundation
- Defence R&D allocation: Increased from ₹13,716.14 crore in 2014–15 to ₹29,100.25 crore in 2026–27, over 112% growth.
- Since 2022–23, 25% of defence R&D budget has been opened to industry, start-ups and academia.
- Testing facilities of 24 DRDO laboratories are accessible to domestic industry through the Defence Testing Portal (DTP). Strengthening India's Defence Industrial Base Defence Acquisition Reforms
- Defence Acquisition Council (DAC): Granted Acceptance of Necessity worth over ₹6 lakh crore for DRDO-designed systems to be manufactured by Indian industry.
- Major approvals include:
  - 97 Tejas Mk-1A fighters: ₹62,000 crore.
  - 156 LCH Prachand helicopters: ₹62,700 crore.
- Defence Acquisition Procedure 2020: Strengthened indigenous procurement and domestic manufacturing.
- Defence Procurement Procedure 2016: Streamlined acquisitions and promoted Make in India.
- Defence Procurement Manual 2025: Streamlined nearly ₹1 lakh crore revenue procurement, including faster approvals and relaxed penalties for indigenous projects.
- Draft DAP 2026: Proposes simplified acquisition categories and indigenous-content requirements of up to 60%. Boosting Defence Innovation through iDEX, ADITI and TDF Initiative Key Facts Outlay `498.78 crore; engaged 676 iDEX startups, MSMEs and innovators and led to 551 contracts by March 2026. Outlay `750 crore for 2023–24 to ADITI Scheme 2025–26 for critical defence technologies. Grants up to `50 crore; 80 projects worth Technology Development `334 crore under implementation by June Fund (TDF) 2026; additional `500 crore corpus for deep-tech and emerging technologies. Technology Transfer and Industry Participation

- Development-cum-Production Partner framework: Technologies transferred to 134 partner companies.
- Around 2,180 technology-transfer agreements signed.
- Over 2,780 DRDO intellectual property rights opened for industry use by March 2026. Indigenisation and Domestic Manufacturing
- Positive Indigenisation Lists: 10 lists covering 5,521 items notified by May 2026.
- Srijan Defence Equipment Empowerment Platform: Listed over 41,000 vendors and 2.7 lakh products by May 2026.
- Uttar Pradesh Defence Industrial Corridor: ₹42,057 crore investment commitments; around ₹4,409 crore grounded.
- Tamil Nadu Defence Industrial Corridor: Around ₹32,699 crore committed; about ₹6,446 crore realised.
- BrahMos Integration and Testing Facility, Lucknow: Began manufacturing missiles. Ease of Doing Business and Defence Trade
- Industrial Licence: Validity extended to up to 18 years; lifetime validity available under the Arms Act.
- Revamped Defence Exim Portal: Enables end-to-end processing, automated verification, tracking and secure payments.
- FDI in Defence: Up to 74% under Automatic Route and 100% under Government Route; cumulative inflows reached around ₹6,670.59 crore by March 2026. Advancing Defence Self-Reliance in India in FY 2025–26 Indigenisation Strengthening Operational Self-Reliance
- Ammunition Self-Sufficiency: Army achieved around 91% self-sufficiency, indigenising 159 of 175 ammunition variants.
- Strategic Missiles: Successful tests of Agni-4 IRBM and Agni-5 long-range surface-to-surface ballistic missile.
- Precision Strike: TARA Glide Weapon and RudraM-II air- to-surface missile demonstrated indigenous strike capability.
- Air Defence: Progress on Kusha Long Range Air Defence Missile and VSHORADS.
- Hypersonic Technology: DRDO conducted a 12-minute ground test of an actively cooled scramjet combustor.
- Integrated Air Defence: Indigenous system combining missile interceptors, short-range weapons and laser technologies was successfully tested. Advancing Maritime Defence and Strike Capabilities
- Naval Fleet: Navy commissioned 12 warships and submarines, including INS Surat, INS Nilgiri and INS Vaghsheer.
- INS Mahendragiri: Stealth frigate with over 75% indigenous content.
- SHACHI: First of 11 Next Generation Offshore Patrol Vessels launched.
- INS Dunagiri, INS Sanshodhak and INS Agray: Expanded indigenous naval, survey and surveillance capabilities.
- INS Sanshodhak: Contributed to completion of the indigenous Sandhayak-class survey fleet.
- Naval Anti-Ship Missile–Medium Range: Successfully tested by DRDO to strengthen indigenous maritime strike capability.

India's defence self-reliance is being driven by indigenous production, innovation, private-sector participation and acquisition reforms. Discuss. Mains Question

Emerging Terror Threats from Social Media

Indian security agencies dismantled the Shahzad Bhatti Network (SBN), an ISI-backed terror syndicate.

- Highlights growing use of social media for extremist propaganda, radicalisation and recruitment, bringing the intersection of social media, terrorism and India's internal security into sharper focus. Social Media: A Force-Multiplier for Security Threats
- Online Radicalisation:
  - Extremist outfits exploit algorithms of platforms such as Instagram, X and YouTube Shorts.
  - Emotionally charged propaganda targets vulnerable youth, including in J&K and Punjab; engagement-driven algorithms may trap them in extremist echo chambers.
- Low Cost and Decentralized Recruitment Funnel:
  - Terrorist handlers identify users engaging with extremist content on open platforms → contact established → selected people shifted to encrypted/ private deep-web platforms, often without physical meetings.
- Advanced Digital Tradecraft:
  - Dead-Drop Emails: Credentials of a single, anonymous email account are shared; messages kept in the Drafts folder without being sent, leaving minimal digital footprint.
  - Metadata-less Apps: Decentralised E2EE platforms such as Threema, without stored metadata/phone numbers, hinder conventional cyber-forensics.
  - Multi-layered VPNs: VPNs and Dark Web used to mask IP addresses and coordinate logistics.
- Lone-Wolf Threat: Extremist content and DIY tactical manuals can enable self-radicalised lone-wolf attackers, who are difficult to detect due to absence of formal command structures.
- Digital Terror Financing: Shift from hawala towards online financing complicates tracking by FIU-IND.
  - Deceptive crowdfunding and cryptocurrencies such as Monero/Bitcoin may bypass AML mechanisms. Implications of Social Media for India's Internal Security
- Amplification of Polarisation: PsyOps can manipulate emotions/opinions, deepen social fault lines and destabilise society.
- Misinformation & Public Order: Fake news can trigger panic and communal tension, sometimes forcing the government to rely on harsh countermeasures like internet shutdowns.
  - Rapid spread of unverified rumors on platforms like WhatsApp has historically led to mob lynchings and localized riots.
- Election Interference: AI-generated deepfakes and bot-driven campaigns may distort voter perception and electoral narratives. Challenges for Law Enforcement in Curbing Social Media-Driven Threats
- Jurisdictional Barriers: Overseas servers require use of MLATs, causing delays in time-sensitive investigations.

- Volume & Decentralisation: Huge content volumes and migration to fringe/decentralised platforms complicate monitoring.
- Language & Context Gaps: Automated moderation struggles with local languages, dialects, coded terms and cultural context, risking both under-detection and excessive censorship.
- Security vs Speech & Privacy: National security measures must respect free speech and the Right to Privacy recognised in K.S. Puttaswamy (2017).
- First-Responder Limitations: Local police often lack advanced digital-forensic tools, specialised OSINT (Open Source Intelligence) training and technical expertise though the central agencies such as I4C are highly capable. India's Initiatives
- IT Act, 2000 — Section 69A: Allows blocking of online content threatening India's sovereignty, integrity, defence and security.
- IT Rules, 2021: Due-diligence obligations on significant social-media intermediaries, including mechanisms for addressing unlawful content and identifying the first originator in specified cases.
- I4C & CERT-In: I4C coordinates cybercrime/cyber-enabled terrorism response; CERT-In handles cybersecurity incidents.
- Intelligence Fusion: MAC, NATGRID and CCTNS facilitate information sharing between Central agencies and State police.
- UAPA, 1967: Principal framework against terrorism, including online recruitment, radicalisation, financing and facilitation. Suggestions
- Bilateral Executive Agreements: Direct arrangements similar to the US CLOUD Act framework could provide faster access to overseas digital evidence than MLATs.
- Traceability Rules: Enforce first-originator provisions under the IT Rules, 2021 without necessarily breaking E2EE for all users.
  - Explore Client-Side Scanning (CSS) against databases of known terror hashes before encryption.
- NATGRID & NETRA: Optimise intelligence systems and use AI/NLP for real-time surface-web monitoring, coded dialect detection and deepfake identification.
- FATF Travel Rule: Enforce PMLA-linked crypto regulations requiring exchanges to collect/share originator and beneficiary information with FIU-IND.
- State-Level Cyber-OSINT Cells: Establish specialised OSINT cells in every State police headquarters.
- Public-Private Partnerships: I4C, CERT-In and technology firms can conduct red-teaming of platforms/algorithms.
- Digital De-radicalisation: Identify vulnerable youth and use structured counselling, following models such as Maharashtra ATS.
  - Develop targeted counter-narratives against extremist messaging.
- Content Regulation: Tech companies must be mandated to conduct independent audits of their recommendation engines.
  - Platforms can use digital hashes to prevent reappearance of removed terror content.
- Digital Literacy: Improve youth capacity to identify disinformation, manipulative narratives and extremist recruitment attempts.

Parliament Passes Bill to Rename Kerala as Keralam

Parliament passed the Kerala (Alteration of Name) Bill, 2026, paving the way for Kerala to be officially renamed "Keralam", following a resolution of the Kerala Legislative Assembly.

- Meaning: "Keralam" reflects the historical demand for a united Malayalam-speaking region associated with the Aikya Kerala Movement of the 1920s.
- Constitutional Changes: The Bill amends the First and Fourth Schedules, with consequential changes to Articles 31A and 290A.
- Constitutional Procedure: Renaming a State is governed by Article 3, which empowers Parliament to alter the area, boundaries or name of a State.
  - The Bill requires the President's prior recommendation for introduction.
  - The President refers it to the concerned State Legislature for its views, which are not binding on Parliament.
  - Under Article 4, a law under Article 3 is not treated as a constitutional amendment under Article 368.
  - After Presidential assent, the change becomes law and the First Schedule is amended.
- Examples: Uttaranchal → Uttarakhand (2007); Orissa → Odisha (2011).
- Historical Roots: Ashoka's Rock Edict II (257 BCE) refers to "Keralaputra," often linked to the Chera dynasty.
  - Scholar Herman Gundert linked "Keralam" to "Cheram/ Cheralam," with cher meaning "to join" and alam "land/ region."
  - The Aikya Kerala Movement strengthened the demand for a unified Malayalam-speaking region.
  - Following the States Reorganisation Commission, 1956, modern Kerala was formed on 1 November 1956, celebrated as Kerala Piravi Day; the Constitution, however, used the anglicised name "Kerala."

National Security Guidelines for Renewable Energy Projects Near International Borders

MHA issued national security guidelines for solar, wind and hybrid renewable energy projects located near India's International Border, LoC and LAC.

- Objective: MHA guidelines seek to balance renewable-energy expansion with border security, surveillance, military mobility, foreign participation and protection of sensitive infrastructure. Key Security Norms Zone/Provision Requirement Within 1 km of IB/ No solar, wind or hybrid renewable-energy LoC/LAC activity permitted MHA security clearance mandatory, case- 1–50 km by-case 1–20 km Additional Ministry of Defence NOC required Civil/operational infrastructure height capped 1–8 km at 3 m 8–20 km Height cap 5 m 20–50 km Height cap 15 m
- Core Infrastructure Exception: Height limits do not apply to essential project infrastructure such as wind turbines.

- Centralised Approval: Proposals must be routed through MNRE, after State government's in-principle land- allotment approval and submission of project coordinates; developers/States cannot directly approach MHA or Defence Ministry.
  - MHA should, as far as possible, decide applications within 60 days.
- Foreign Personnel: Workers/engineers from land-border-sharing countries, particularly Pakistan, Bangladesh and China, require prior Central approval; foreign nationals in sensitive areas are subject to monitoring.
- Land Safeguard: Project land cannot be transferred/ allotted to a foreign company without Central approval and MHA security clearance; foreign investment must comply with FDI and DPIIT rules.
- Anti-Drone Security: Developers must provide anti-drone systems, operated by CISF or State police, with costs borne by the developer.
- Security-Oriented Design: Avoid long project stretches parallel to the border; project roads should permit use by armed forces/border-security personnel during emergencies.

India Formally Names 27 Places in Arunachal Pradesh

India formally identified 27 locations in Arunachal Pradesh on the official Survey of India map in response to China's repeated attempts to assign alternative names to places in the State.

- China's "Cartographic Aggression": China issued renaming lists in 2017, 2021 and 2023 and refers to Arunachal Pradesh as "Zangnan" (South Tibet) to reinforce its territorial claims.
- Sovereignty Assertion: Official identification strengthens India's cartographic and administrative claim over Arunachal Pradesh and improves public awareness of border geography. Key Locations Category Places / Significance Long Ju: early India-China border flashpoint in Border Flashpoints 1959; Thag La: fighting began here in the 1962 India-China War. Strategic Passes Bisa, Dzo La, Riza La, Pukur La and Thag La. Jairampur in Changlang district is an important Connectivity logistics hub for movement towards eastern Arunachal Pradesh and the Myanmar border. Jaswant Garh commemorates Jaswant Singh Rawat; Sher-e-Thapa Memorial honours 1962 Cultural/Historical war hero Trilok Singh Thapa; Sambho Sarovar is a high-altitude lake. Strategic Significance of Arunachal Pradesh
- Borders: Shares borders with China (Tibet Autonomous Region) to the north, Bhutan to the west and Myanmar to the east; Assam and Nagaland lie to the south.
- Geopolitical Buffer: As the largest northeastern State, it acts as a shield for the Brahmaputra Valley.
- Water Security: It is the upper catchment for major Brahmaputra tributaries such as Subansiri, Kameng and Lohit; Chinese control would threaten water and food security in Northeast India and Bangladesh.
- Military Geography: Control of high-altitude passes such as Thag La and Bum La shapes military dominance in the region.
- Tawang Factor: Tawang is the birthplace of the 6th Dalai Lama; China fears Indian control may give New Delhi influence in Tibetan Buddhist geopolitics and future Dalai Lama succession.
- McMahon Line: India follows the McMahon Line drawn in the 1914 Simla Convention; China rejects it as a legacy of British imperialism.

Naxal-Free India Through Integrated Strategies

India became effectively free from Left-Wing Extremism after nearly six decades, due to sustained security operations, technology-based intelligence, development, welfare and rehabilitation under Vishwaas, Nirman and Jan Kalyan. India's Efforts to Counter Left-Wing Extremism

- Background: For nearly six decades, LWE affected tribal and remote regions marked by violence, weak connectivity and poor public services.
- Historic Milestone: An integrated strategy addressing security and structural causes made India effectively free from Naxalism by 31st March 2026.
- Strategic Framework:
  - Vishwaas: Stronger security operations, inter-agency coordination, surrender and rehabilitation programmes, and community engagement.
  - Nirman: Expansion of physical and digital connectivity, governance, infrastructure and livelihoods.
  - Jan Kalyan: Focus on welfare delivery, dignity, cultural inclusion and mainstream development.
- Integrated Approach: Security enabled development, development built trust, and trust improved welfare delivery.
- Shrinking LWE Footprint: LWE-affected districts declined from 126 in 2014 to 2 in 2026; most-affected districts fell from 35 to zero.
- Decline in Violence: Incidents declined from 870 in 2014 to 234 in 2025, while fatalities fell from 310 to 100. In 2010, incidents and deaths had peaked at 1,936 and 1,005, respectively. Role of Vishwaas in Restoring Faith in the State in LWE-Affected Areas
- About: Vishwaas rebuilt trust through sustained state presence, better security-governance coordination and stronger engagement with remote communities.
- Origins: LWE began with the 1967 Naxalbari uprising. Several extremist groups merged in 2004 to form the CPI (Maoist).
- Peak of Violence: Violence peaked in 2010 with 1,936 incidents and 720 civilian deaths.
- Decadal Impact: Between 2004 and 2014, 17,542 incidents killed 1,913 security personnel and 5,019 civilians. Nearly 92% of Naxalite weapons were reportedly looted from police armouries.
- Policy Gaps: India lacked a consistent national strategy, while States acted with limited coordination. In 2009, Naxalism was acknowledged as India's gravest internal security challenge, with a wider geographical spread than insurgencies in Kashmir and the Northeast.
- Transition to Nirman: Fortified police stations, CAPF camps and cadre surrenders expanded governance into inaccessible

areas, enabling roads, schools, healthcare, banking and digital connectivity. National Policy and Action Plan

- Policy Shift: The 2015 National Policy and Action Plan replaced ad hoc responses with a structured, whole-of-government framework.
- Security and Development Measures: It combined CAPF deployment, specialised training and funding through Security Related Expenditure, Special Infrastructure Scheme and Special Central Assistance with socio- economic development.
- Three-Pronged Approach: The strategy focused on Dialogue, Security and Coordination, with the Ministry of Home Affairs providing central direction.
- Time-Bound Achievement: The target announced on 24th August 2024 to make India Naxal-free by 31st March 2026 was pursued through intensified operations, coordination, infrastructure and development outreach. Expanded Security Grid
- Strengthening the Security Grid: Security infrastructure, specialised forces and operational coordination improved state presence, mobility, intelligence and counter- insurgency capacity.
- Police and CAPF Expansion: 597 fortified police stations were built, compared with 66 before 2014. Police stations reporting Naxal incidents fell from 333 to 16, while 408 CAPF camps were established.
- Operational and Welfare Support: 68 night-landing helipads, 400 bullet- and blast-proof vehicles and five hospitals supported troop movement, evacuation and welfare.
- Specialised Security Architecture: The framework included CoBRA, CRPF, District Reserve Guard, Jharkhand Jaguar, Chhattisgarh Police units and Greyhounds.
- Integrated Operations: Joint training of the DRG, STF, CRPF and CoBRA improved interoperability, readiness and command coordination. Technology-Led Operations
- Technology-Driven Operations: After 2014, UAVs, drones, satellite imagery and AI-based analysis enabled real-time monitoring and precise surveillance.
- Intelligence and Tracking: Location tracking, call-log analysis, mobile-data analytics and social-media monitoring improved movement tracking and operational efficiency. Trace Target Neutralise Doctrine
- Operational Doctrine: The "Trace, Target, Neutralise" strategy combined sustained security action with intelligence-led operations to reclaim areas under LWE influence for over three decades.
- Major Operations: Operation Black Forest, Octopus, Double Bull, Thunderstorm, Bhimbarg and Chakrabandha dismantled Maoist strongholds and restored state presence.
- Major Operational Gains: Operation Black Forest eliminated over 30 Maoists and increased arrests and surrenders. Operation Double Bull helped make Gumla, Lohardaga and Latehar Naxal-free. Disrupting Financial Networks
- Integrated Strategy: An All-Agency approach targeted armed cadres and the wider LWE support ecosystem, combining development and security efforts.
- Disrupting Financial Networks: By December 2025, the NIA seized assets worth over ₹40 crore, the ED attached ₹12 crore, and State agencies confiscated another ₹40 crore.
- Investigation and Prosecution: By Dec 2025, 111 cases were investigated and 98 charge sheets filed. By June 2026, the figures rose to 112 cases and 100 charge sheets. Surrender and Rehabilitation
- Financial Assistance: Surrendering cadres received ₹5 lakh for higher ranks and ₹2.5 lakh for others, a ₹10,000 monthly stipend for 36 months, an additional ₹50,000 incentive—doubled for group surrenders—and compensation for deposited weapons.
- Rising Surrenders: The policy led to 2,337 surrenders in 2025 and 3,927 between 2024 and March 2026, aided by civil society members, journalists, community leaders and public representatives. Role of NIRMAN in Building a New Future in LWE-Affected Areas
- Focus of Nirman: Expanded roads, digital connectivity, public services and governance in remote areas, integrating them with mainstream development.
- Development Vision: Ensured tribal communities received essential facilities and opportunities comparable to major cities.
- Road Connectivity: Over 12,249 km of roads were built after 2014. Projects covering 17,319 km were approved with ₹20,557 crore.
- Mobile and Digital Connectivity: Over 9,600 mobile towers were installed. Connectivity reached 44,728 of 46,592 villages, covering nearly 96%.
- Financial Inclusion: Between April 2015 and March 2026, 1,804 bank branches, 1,321 ATMs, 6,025 post offices and 74,720 banking correspondents were added.
- Educational Infrastructure: 259 Eklavya Model Residential Schools were sanctioned, of which 179 were developed.
- Skill Development: 46 ITIs and 49 Skill Development Centres were established with nearly ₹800 crore. Over 90,000 youth and women received training.
- Civic Action Programmes: Works worth ₹212 crore supported health camps, medicines and community welfare.
- Community Engagement: Tribal Youth Exchange Programmes and ₹50.45 crore under the Media Plan Scheme strengthened awareness and State-community engagement. Role of JAN KALYAN in Promoting Welfare and Dignity in LWE-Affected Areas
- Focus of Jan Kalyan: Ensured dignified, inclusive and last-mile delivery of essential public services to marginalised and remote communities.
- Strengthening Tribal Livelihoods: Improved access to education, healthcare, housing, infrastructure and livelihoods reduced LWE influence and strengthened trust in democratic institutions.
- Rehabilitation of Surrendered Cadres: Former cadres received skill training, livelihood support, self-employment finance and housing under Pradhan Mantri Awas Yojana. Their children received free education up to Class XII.

- Incentives for Democratic Governance: Development grants were given to villages that ended Naxal influence and formed elected panchayats. Targeted Initiatives Accelerating the Transformation
- Special Central Assistance
- Aspirational Districts Programme
- PM-JANMAN
- Dharti Aaba Janjatiya Gram Utkarsh Abhiyan India's success against Left-Wing Extremism shows that internal security challenges require both security operations and inclusive development. Discuss. Mains Question

Cauvery Water Dispute

Cauvery Water Management Authority (CWMA) upheld the CWRC (Cauvery Water Regulation Committee) order directing Karnataka to release 3,500 cusecs (around 4.5 tmc ft) of water to Tamil Nadu despite a 60% shortfall in reservoir inflows.

- Karnataka cited inadequate rainfall; Tamil Nadu demanded 9.8 TMC ft.
- Tamil Nadu also opposed Karnataka's Mekedatu Reservoir Project. Cauvery River
- Called the "Ganga of the South"; east - flowing.
- Originates at Talakaveri, Brahmagiri Hills, Karnataka (Kodagu), and drains into the Bay of Bengal near Poompuhar.
- Basin: 81,155 sq. km across Karnataka, Tamil Nadu, Kerala and Puducherry.
- Perennial due to both Southwest and Northeast monsoons.
- Left-bank tributaries: Harangi, Hemavati, Shimsha, Arkavati.
- Right-bank tributaries: Lakshmana Tirtha, Kabini, Suvarnavathi, Bhavani, Noyyal, Amaravati.
- Major dams: Krishna Raja Sagara (Karnataka) and Mettur (Tamil Nadu). Cauvery River Water Dispute
- Originated in the 1892 and 1924 agreements between the princely state of Mysore and Madras presidency.
- Karnataka (upper riparian) seeks water for Bengaluru and irrigation; Tamil Nadu (lower riparian) seeks assured releases for Cauvery delta agriculture (particularly Kuruvai crop).
- CWDT constituted: 1990 under Article 262 and the 1956 Act.
- CWDT Award, 2007: Tamil Nadu 419 TMC, Karnataka 270 TMC, Kerala 30 TMC, Puducherry 7 TMC and environment 14 TMC.
- Supreme Court, 2018: Karnataka increased to 284.75 TMC and Tamil Nadu reduced to 404.25 TMC.
- Held inter-state rivers to be national assets and ordered creation of CWMA and CWRC. Mekedatu Project
- Proposed 48 TMC balancing reservoir at Mekedatu, Karnataka.
- Objectives: Bengaluru's drinking water, groundwater recharge and hydropower.
- Karnataka says it will not alter existing allocations.
- Tamil Nadu fears upstream storage may reduce downstream releases, especially during distress years.
  - It cites CWDT Award, which prohibits upstream projects that adversely affect scheduled water deliveries without mutual agreement and consultation with the regulatory authority. Inter-state river water disputes reflect the challenges of balancing federalism, water security, and climate resilience. Discuss with reference to the Cauvery dispute. Mains Question

India at Commonwealth Games 2026

India finished 4th at the 2026 CWG in Glasgow achieving several landmark firsts.

- At the closing ceremony, India formally took over as host of the centenary CWG 2030 in Ahmedabad. Neeraj Chopra received the Commonwealth Flag, while boxing gold medallist Jaismine Lamboria served as India's flag bearer. Anahat Singh became the first Indian to win the girls' singles title at the World Junior Squash Championships. India's Performance
- Medal tally: India won 39 medals—13 gold, 17 silver and 9 bronze—finishing behind Australia, England and Canada.
  - India achieved this despite fielding only 122 athletes due to doping-related restrictions and the exclusion of traditional medal-rich sports such as shooting, wrestling, badminton, hockey, and table tennis that had contributed 25 of its 61 medals at Birmingham 2022.
- Better conversion rate: Despite winning fewer medals than in 2022, India's medal success rate improved to 31%, compared with 29% in Birmingham.
- India's Major Achievements:
  - Top Medal Winners: Boxing emerged as India's most successful discipline with 10 medals (7 Gold, 3 Silver) - the highest boxing gold tally by any nation at a single CWG.
  - Historic Para Campaign: India recorded its best-ever CWG para campaign, winning 7 medals, equalling the combined tally from all previous editions. Commonwealth Games
- World's second-largest multi-sport event after the Olympics, involving 71 nations and territories. Brainchild of Canadian sportswriter Melville Marks Robinson. Idea originated from the 1911 Inter-Empire Championships in London. First held as the British Empire Games in Hamilton, Canada, in 1930. Canadian Gordon Smallacombe won the first CWG gold in triple jump. Held every four years, except in 1942 and 1946; renamed CWG in 1978. Governed by the Commonwealth Games Federation (CGF). India and CWG
- Debut: 1934 London Games. First medal: Rashid Anwar, wrestling bronze. First individual gold: Milkha Singh, 440 yards, 1958 Cardiff. Best performance: Delhi 2010—101 medals and 2nd position. Host the 2030 CWG.
- India recorded a 3.6% positivity rate in WADA's 2024 report—the highest among countries conducting over 5,000 tests for the third consecutive year. Anti-doping rule violations cost India one weightlifting quota at CWG 2026. Persistent doping cases undermine India's sporting credibility as it prepares to host the 2030 CWG and bids for the 2036 Olympic Games. Need for Institutional Reforms: Strengthen NADA, intelligence-led enforcement, athlete education and supplement awareness, with stricter action against complicit coaches, doctors and suppliers.

Kargil Vijay Diwas 2026

India observed the 27th Kargil Vijay Diwas on 26 July 2026 to honour soldiers who recaptured the Kargil heights during the 1999 war. The Kargil War is regarded as the only conventional conflict fought between two nuclear-armed nations. Key Facts about the Kargil War

- Background: In 1999, shortly after the Lahore Declaration, Pakistani forces occupied winter-vacated Indian posts along strategic Kargil ridges.
- Operation Badr:
  - Pakistani soldiers, disguised as armed militants, crossed the Line of Control (LoC) and occupied positions overlooking the Srinagar–Leh Highway.
- Pakistan's Objectives: To disrupt connectivity between Kashmir and Ladakh, isolate Indian troops in Siachen, and force negotiations on Kashmir.
- Detection:
  - Suspicious movement was reported on 3 May 1999; patrols and aerial surveillance later confirmed large- scale intrusion.
- Challenging Terrain: Fighting occurred at heights above 5,000 metres, amid freezing temperatures, thin air, steep slopes, and enemy fire.
- Operation Vijay: India launched Operation Vijay to evict the intruders, while directing its forces not to cross the LoC.
- Tri-Service Response: The Indian Air Force began Operation Safed Sagar on 26 May 1999, while the Navy deployed forces to demonstrate strategic readiness.
- Military Strategy: Indian forces sought to contain the infiltrators, recapture occupied posts, and prevent reinforcements.
- Tololing: India fully recaptured Tololing and Point 4590 on 13 June 1999, marking a major breakthrough.
- Tiger Hill: Tiger Hill was recaptured on 4 July 1999, decisively shifting the war's momentum.
- Other Major Battles: Intense fighting occurred at Point 4875, Batalik, Mushkoh Valley, and Kaksar.
- Successful Completion: India recaptured all occupied positions without crossing the LoC, demonstrating military professionalism and restraint.
- Declaration of Victory: On 14 July 1999, Prime Minister Atal Bihari Vajpayee declared Operation Vijay successful. E c o n o m i c S c e n

ECONOMIC SCENARIO

Surge in India's Merchandise Exports

India's merchandise exports increased by nearly 20% YoY to USD 44.2 billion in July 2026, according to the Ministry of Commerce and Industry.

- Growth occurred despite West Asia geopolitical tensions, supported by market diversification and maritime trade rerouting. Key Trends in India's Exports
- Merchandise Trade Growth: Goods exports grew 19.6% YoY, while imports increased 17.5% to USD 76.2 billion.
- Services Trade: Services exports grew 6.4% to USD 35.9 billion, while imports increased 9.5% to USD 18.9 billion.
- Trade Deficit: Combined trade deficit widened to USD 15 billion (from USD 11.4 billion) due to faster growth in services imports.
- Factors Driving Export Growth:
  - Petroleum Products: Contributed around 39% of export growth, driven by high global prices.
  - Electronics & Engineering: Electronics exports grew 30.7% (April–July 2026), while engineering goods grew 18.2%.
  - Agri & Allied Sectors: Growth in marine products, meat, dairy, poultry and handicrafts. Strategic Rerouting & Market Diversification
- Alternative Shipping Routes: Exporters reduced dependence on the Strait of Hormuz by shifting cargo through ports in Oman, Fujairah and Khor Fakkan (UAE).
- New Markets:
  - China: Exports grew by 65%; Singapore's share increased from 2.7% to 4.7%.
  - Africa: Exports to Tanzania increased by 130%, with growth in Kenya and SACU region.
- Traditional Market: The US remained the largest export destination, accounting for about one-fifth of exports. Challenges to India's Export Competitiveness
- Middle-Technology Trap (Dual Competitiveness Challenge): India faces competition from low-cost economies like Bangladesh and Vietnam while lagging behind China, South Korea and Taiwan in high-tech manufacturing.
- Low R&D Spending: GERD remains around 0.65% of GDP, limiting innovation and movement from assembly to high- value manufacturing. a r i o
- Weaponisation of Trade Standards: Non-Tariff Barriers like EU's CBAM, deforestation laws act as green protectionism, directly threatening India's carbon-intensive exports like steel, cement, and aluminum.
  - US's increasing use of "forced labor" investigations and stringent ESG compliance demands create massive compliance costs and market-entry bottlenecks for Indian MSMEs.
- Export Basket Vulnerability: Heavy dependence on refined petroleum exports makes growth vulnerable to crude prices.
- Geopolitical Risks: West Asia and Red Sea disruptions increase freight costs and transit time.
- Inverted Duty Structure: Higher duties on raw materials than finished goods reduce domestic value addition and weaken India's competitiveness in Global Value Chains (GVCs).
- Chinese Input Dependence: Pharmaceuticals and electronics remain dependent on Chinese intermediates.
- Low FTA Utilisation (25%): Indian exporters have low utilisation of FTAs due to complex Rules of Origin (ROO) and limited awareness.

- Conversely, partner countries often leverage these FTAs more effectively to capture the Indian domestic market. Measures to Strengthen Export Competitiveness

- High-Tech GVC Integration: Move beyond assembly-based PLI schemes towards deep-tier manufacturing in semiconductors, green technologies and precision engineering.
  - Strengthen Electronics Component Manufacturing Scheme (ECMS), India Semiconductor Mission 2.0 and domestic manufacturing of APIs and telecom components.
- ESG Compliance Support: Develop domestic carbon markets and assist MSMEs through the TRACE (Trade Regulations, Accreditation & Compliance Enablement) framework.
- FTA 2.0 Strategy: Must be negotiated with a dual-track strategy. Focus on greater market access for services, Mode 4 mobility and stronger ROO to prevent dumping.
- Logistics Improvement: Implement National Logistics Policy and LIFT scheme to reduce logistics costs towards global benchmark of 7–8% of GDP.
- Correct Inverted Duty Structure: Ensure inputs are not taxed higher than finished products.
- Strengthen MSME Exports: Provide affordable trade finance, export credit, insurance, branding, certification and market intelligence through initiatives like Export Promotion Mission (Niryat Protsahan and Niryat Disha).

Electronics Component Manufacturing Scheme

MeitY approved 31 additional ECMS proposals involving ₹6,844 crore investment.

- New components include electrolyte additives, hermetic terminals, metalised capacitor films and coils, being manufactured in India for the first time. Key Facts About the Scheme
- ECMS: Launched in April 2025 by MeitY to build a self-sustaining electronics component ecosystem and integrate India with Global Value Chains (GVCs).
- Incentives: Provides turnover-linked, capex-linked or hybrid incentives, partly linked to employment generation.
  - Benefits are given on a first-come, first-served basis to firms ready for early production.
- Tenure: 6 years; turnover-linked incentives have 1-year gestation, while capex incentives are available for 5 years.
- Target Segments: Covers sub-assemblies, bare components and capital equipment, together accounting for nearly 90% of mobile-phone Bill of Materials (BoM).
- Investment Commitments: By December 2025, ECMS attracted ₹1.15 lakh crore, nearly double the initial ₹59,350 crore target.
- Projected Outcomes: Expected to generate ₹10.34 lakh crore production over 6 years and create 1.41 lakh direct jobs.
- Synergy with ISM 2.0: Complements the India Semiconductor Mission 2.0 across materials, equipment and advanced packaging. Significance
- Self-Reliance: India is self-reliant in enclosures, relays, anode material and optical transceivers.
  - Domestic production meets about 80% of laminate, 75% connector, 60% lithium-ion cell and 55% transducer demand.
- Geographical Spread: Latest projects span 10 States–Himachal Pradesh, Uttarakhand, UP, Haryana, Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu and Telangana; Tamil Nadu leads with 7 approvals.
- Expected Output and Jobs: New projects are expected to generate about ₹82,243 crore production and nearly 10,000 jobs. Supporting Policy Framework
- PLI Scheme: Covers 14 sectors; nearly 70% of USD 4 billion electronics FDI since 2020 is attributed to PLI beneficiaries.
- 100% FDI permitted in electronics manufacturing, subject to applicable laws.
- Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme
- Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)
- National Policy on Electronics (NPE) 2019
- Union Budget 2026–27: Announced Basic Customs Duty exemptions for microwave-oven inputs and Social Welfare Surcharge exemptions for electronic toy parts.

Foreign Assets of Small Taxpayers Disclosure Scheme, 2026

CBDT notified the Foreign Assets of Small Taxpayers– Disclosure Scheme (FAST-DS) 2026, a one-time voluntary disclosure mechanism announced in Union Budget 2026–27. Key Facts About FAST-DS 2026

- About: One-time scheme under the Finance Act, 2026 for declaring specified undisclosed foreign assets/income or undeclared foreign assets.
  - Effective from 16 August 2026.
  - Declaration deadline: 31 December 2026.
  - Asset valuation date: 31 March 2026.
- Eligibility: Available to persons who were resident in India in the relevant previous year.
  - A current Non-Resident or Resident but Not Ordinarily Resident (RNOR) can also use it if resident in India when the relevant foreign income arose or asset was acquired.
- Grounds for Declaration: Applicable where the taxpayer:
  - Did not file an income-tax return.
  - Omitted foreign asset/income from a return filed before commencement of the Scheme.
  - Had foreign asset/income that escaped assessment.
- Tax/Fee Payable:
  - Category I: 30% tax + additional amount equal to 100% of tax = effective 60% payment. Example: ₹80 lakh declaration = ₹48 lakh payable.
  - Category II: Flat ₹1 lakh fee.
- Valuation of Foreign Assets: Fair Market Value (FMV) generally equals the higher of cost of acquisition or open-market value on 31 March 2026.

- Values must be converted into Indian Rupees using prescribed forex rules.
- Separate valuation rules apply to jewellery, securities, unquoted shares, immovable property, foreign bank accounts and interests in foreign partnerships/Limited Liability Partnerships (LLPs).

- Benefits: Valid declaration and payment provide immunity from further tax, penalty and prosecution under the Black Money Act, 2015 for the declared asset/income.
  - Declared income/investment is not included in total income under the Income-tax Act, 1961 or Black Money Act, 2015.
  - Declarant cannot later seek rectification, revision, set- off or relief regarding the declared amount.
- Exclusions: Income/assets representing proceeds of crime where proceedings under the PMLA, 2002 have been initiated or are pending.
  - Assessment years where proceedings have already been completed under the Black Money Act, 2015.
- Significance: Promotes voluntary compliance for small- value foreign assets/income while providing certainty against further penalties and prosecution.

India's Makhana Sector

Government highlighted India's growing makhana sector after launch of the National Makhana Board in Bihar on 15th September 2025 and approval of the Central Sector Scheme for Development of Makhana with ₹476.03 crore outlay for 2025–26 to 2030–31. Current Status of India's Makhana Sector

- Global Leadership: India is the world's largest producer; Bihar contributes nearly 75% of India's production and around 80–85% of global supply.
- Production Hub: Concentrated in North Bihar, especially Supaul, Saharsa, Madhepura, Mithila and Seemanchal.
- Production: Increased from 63,910 MT in 2024–25 to 80,590 MT in 2025–26; productivity rose from 2.03 MT/ ha to 2.34 MT/ha.
  - Bihar produced around 60,000 MT in 2025–26.
- Domestic Market: Grew around 17–18% annually during 2021–22 to 2024–25; projected at ₹11,000–12,000 crore by 2029–30.
- Prices: Rose from about ₹500/kg in 2020–22 to nearly ₹1,250/kg in 2025.
- Consumption: 3,000–3,500 MT/month, rising to around 5,000 MT during festivals.
- Exports: After separate HSN codes in 2025, India exported 7,264.89 MT worth ₹19,296.08 lakh in 2025–26.
- Major Markets: US 40%, Canada 20%, UAE 17%, together accounting for around 77% of exports, while markets like Germany, Nepal and Australia offer higher unit-price realisations. Key Facts about Makhana
- Makhana (Euryale ferox): Aquatic crop grown in shallow ponds, lakes and wetlands; edible seeds are processed and popped.
- Major States: Bihar, West Bengal and Assam.
- GI Tag: Mithila Makhana.
- Cultivation: Increasing shift from traditional pond cultivation to field- system farming.
- Improved Varieties: Swarna Vaidehi and Sabour Makhana-1.
- Nutrition: Rich in carbohydrates, protein, fibre, magnesium, potassium, phosphorus and iron; low in fat and sodium and cholesterol-free.
  - Growing preference for healthy, plant-based snacks has increased its premium-food demand. Government Initiatives to Strengthen the Makhana Sector
- National Makhana Board: Announced in Union Budget 2025–26 and launched in Bihar on 15 September 2025.
- Central Sector Scheme: ₹476.03 crore for 2025–26 to 2030–31.
- Focus Areas: Research, quality seeds, farmer training, harvesting, post-harvest management, value addition, branding, marketing, exports and quality control.
- Allocation: ₹30 crore in 2025–26 and ₹90 crore in 2026–27.
- Around 8,159 farmers benefited in 2025–26.
- 1,010 additional hectares brought under cultivation and 73 hectares under seed production.
- 89 Front Line Demonstrations conducted through State Agriculture Universities (SAUs), Central Agricultural Universities (CAUs) and Indian Council of Agricultural Research (ICAR) institutions. Strengthening the Makhana Value Chain through Processing, Research and Technology
- Primary Processing: Seeds undergo drying, cleaning, roasting, popping, polishing, sorting and grading.
- Value Addition: Expansion into flavoured makhana, ready- to-eat snacks and makhana flour.
- Start-ups and FPOs: Supporting processing, branding, value addition and market access.
- National Research Centre for Makhana (NRCM):
  - Promotes water-efficient and integrated farming, including makhana-cum-fish farming.
  - Distributed around 15,824.1 kg of high-yielding seeds.
  - Trained over 3,000 farmers between 2012 and 2023.
  - Supported 24 enterprises.
  - Developed seed washers, graders, roasting and popping machines for commercial use.
- Overall Potential: Can improve farmer incomes, rural employment, value addition and agri-food exports. Makhana has the potential to transform wetland-based agriculture into a high-value agri-food economy. Discuss. Mains Question

Building a Business-Ready India

On India's 80th Independence Day, the Government highlighted reforms to improve Ease of Doing Business, digital governance, compliance simplification, market access and enterprise financing. Key Initiatives Launched by the Government for Reforming India's Business Environment India's Business Environment

- National Single Window System (NSWS): Launched in 2021; integrates 32 Central Ministries and 34 States, covering 686+ Central and 7,498 State approvals. Granted 8.29 lakh+ approvals by November 2025.
- Startup India: Launched in 2016; DPIIT-recognised startups rose from 502 in 2016 to 2.47 lakh+ by 12 August 2026.
- SPICe+ Form: Introduced in 2020; integrates 11 services from 3 Central Ministries/Departments, including incorporation, DIN, PAN, TAN, EPFO, ESIC, GSTIN and bank account opening.
- MCA21 V3: AI-driven corporate registry platform for companies and Limited Liability Partnerships (LLPs).
  - Processed 3.84 crore filings during 2021-25, with 3.33 crore approved through Straight Through Process.
- Udyam Registration: Introduced in 2020 as a free, paperless, self-declaration-based MSME registration system.
  - Registrations increased from 0.10 lakh in October 2020 to 9.27 lakh+ by 13 August 2026.
- Business Reform Action Plan (BRAP): Launched in 2015 to promote State/UT reforms in single-window clearances, land, labour, inspections, taxation and environmental approvals. Unlocking Finance for Enterprise Growth
- Pradhan Mantri MUDRA Yojana (PMMY): Launched in 2015; collateral-free loans up to ₹20 lakh for non- corporate, non-farm activities.
  - By 27 March 2026, 57.79 crore loans worth ₹40.07 lakh crore were sanctioned.
- Credit Guarantee Scheme: Enables collateral-free credit up to ₹10 crore for Micro and Small Enterprises.
  - By March 2026, Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) approved ₹13.67 lakh crore coverage across 1.41 crore guarantees.
- Credit Assessment Model (CAM): Introduced by Public Sector Banks in 2025 to automate MSME loan appraisal using digital data.
  - 3.96 lakh+ applications worth ₹52,300 crore+ sanctioned during April-December 2025.
- Trade Receivables Discounting System (TReDS): Enables MSMEs to finance trade receivables through multiple financiers.
  - Invoice discounting rose from ~₹40,000 crore in 2021- 22 to ₹3.47 lakh crore in 2025-26.
  - Union Budget 2026-27 proposed credit guarantee for invoice discounting and wider TReDS use by CPSEs. From Compliance to Trust-Based Governance
- Jan Vishwas (Amendment of Provisions) Act, 2026: Decriminalises 717 provisions and amends 784 provisions across 79 Central Acts and 23 Ministries.
- Reduction in Compliance Burden: By November 2025, 47,000+ compliances reduced:
  - 16,108 simplified; 22,287 digitised; 4,458 decriminalised; 4,270 redundant compliances removed
- GST 2.0: Reforms announced in September 2025 moved towards a simplified two-rate structure.
  - GST taxpayers increased from ~60 lakh in 2017 to 1.68 crore+ by 31 July 2026.
- Faceless Assessment Scheme: Uses automated case selection, random allocation and centralised digital communication to make tax administration more objective, standardised and transparent. Expanding Markets for Indian Businesses
- Government e-Marketplace (GeM): Launched in 2016.
  - By 6 August 2026, connected 1.37 lakh+ government buyers with ~25 lakh sellers/service providers and facilitated procurement worth ₹20 lakh crore+.
  - 75 lakh+ orders executed in FY 2025-26.
- PM GatiShakti: Launched in 2021; integrates 58 Ministries/ Departments, 36 States/UTs and 3,291 data layers.
  - By February 2026, 352 projects worth ₹16.10 lakh crore evaluated; 201 sanctioned and 167 under implementation.
- Open Network for Digital Commerce (ONDC): Launched in 2022 to promote interoperable digital commerce.
  - Has 7.64 lakh+ sellers across 616+ cities. Strengthening India's Global Business Footprint
- Export Promotion Mission: Launched in 2025; focuses on MSMEs, first-time exporters, labour-intensive sectors and low-export-intensity regions.
- Trade Connect e-Platform: Provides trade information, market opportunities and global-buyer access.
  - By August 2026, crossed 20 lakh registered users and facilitated 40 lakh+ Certificates of Origin.
- Indian Customs Electronic Gateway (ICEGATE): Enables electronic customs filing, duty payment, amendments, query resolution and refunds.
  - Bills of Entry increased from 1.43 lakh+ in April 2020 to 6.14 lakh+ in June 2026. India's Ease of Doing Business reforms are shifting from compliance reduction to building an enterprise-led growth ecosystem. Discuss. Mains Question

NITI Aayog Report on India's Regulatory Regime in Professional Services

NITI Aayog released "India's Services Sector: Insights on Regulatory Regime in Professional Services" to identify regulatory bottlenecks in knowledge-intensive professional services and improve global competitiveness. Key Findings of NITI Aayog's Report

- Macro Significance: Services contributed ~55% of GDP/ GVA in FY24, grew at ~7% CAGR (2011-12 to 2023-24), account for ~30% of employment, and remain India's top FDI-recipient sector.
  - Professional and management consulting contributed ~20% of services exports in 2024-25; exports grew at 18% CAGR (FY15-FY25).
  - India's Revealed Comparative Advantage (RCA) in professional and management consulting rose from 0.95 (2005) to 3.0 (2024).
  - India is the 7th-largest services exporter, with 4.3% global share in 2024, up from 2% in 2005.
- Regulatory Landscape: Governed by laws including Companies Act, 2013; LLP Act, 2008; Partnership Act, 1932; and FEMA/RBI regulations.

- OECD's Services Trade Restrictiveness Index (STRI): Measures regulatory barriers to services trade across 22 sectors and 51 countries, updated annually. Sector India's Rank Regime Architectural 2nd most restrictive Highly restrictive Services Legal Services 3rd most restrictive Highly restrictive Accounting Services 4th most restrictive Highly restrictive Engineering Services 38th most restrictive Comparatively liberal
- India and Global Trade Rules Context: Under General Agreement on Trade in Services (GATS), services trade occurs through-
  - Mode 1: Cross-border supply
  - Mode 2: Consumption abroad
  - Mode 3: Commercial presence
  - Mode 4: Presence of natural persons
  - India has no GATS commitments in legal and architectural services; engineering has limited commitments, with Mode 3 foreign equity capped at 51%.
  - India is not a signatory to the WTO's 2017 Joint Initiative on Services Domestic Regulation, though it benefits through the Most-Favoured-Nation (MFN) principle. Challenges Facing India's Professional Services Sector
- Legal Services: Advocates Act, 1961 mainly recognises advocates; in-house counsels, Legal Process Outsourcing (LPO) professionals and legal consultants lack a clear framework.
  - India has no Mutual Recognition Agreements (MRAs) with foreign bar bodies.
  - Restrictions on corporate structures and Multi- Disciplinary Practices (MDPs) limit scalability and global competitiveness.
- Accounting and Auditing: Dual oversight by Institute of Chartered Accountants of India (ICAI) and the National Financial Reporting Authority (NFRA) creates jurisdictional concerns.
  - Foreign accountants face practice restrictions; limited MRAs constrain mobility.
  - Bookkeeping lacks a dedicated framework for qualifications, ethics and record-keeping.
- Architectural and Engineering Services: Architecture regulated by Architects Act, 1972; engineering lacks a comprehensive statutory framework.
  - Engineers Bill remains pending; AICTE mainly regulates education.
  - Overlap between architects and engineers creates accountability gaps.
  - Architects generally cannot practise through LLPs or companies, unlike in countries such as the UK, New Zealand and Singapore.
  - Multiple State requirements overlap with Council of Architecture registration; India has no MRAs for architects.
- Healthcare & Allied Healthcare Services: Jurisdictional overlap in AYUSH among the Ministry, National Commission for Indian System of Medicine (NCISM) and State bodies.
  - Interstate mobility requires NOCs between State Medical Councils. Delayed National Exit Test (NExT) and partial implementation of the NCAHP Act, 2021 hinder standardisation. Recommendations of NITI Aayog
- Continuous Professional Development (CPD) for Professionals: Introduce a uniform and enforceable Continuous Professional Development (CPD)-hour regime across professions.
- Adoption of Best (Global Regulatory) Practices: Ensure transparent qualification/licensing criteria, appeal mechanisms and processing timelines.
  - Models: Malaysia's Unified Public Consultation portal and Australia's DFAT Professional Services and Mutual Recognition Unit.
- Elevate Professional Services within the Global Value Chain (GVC): Shift towards R&D, strategic technology, engineering design and complex advisory.
  - Leverage India's ~1,700 GCCs employing over 1.9 million professionals.
- Advance Emerging Trends: Build capability in AI/ automation, carbon accounting, climate-risk advisory, sustainable finance, supply-chain restructuring and compliance advisory. India's services sector has emerged as a major pillar of economic growth, but regulatory fragmentation is limiting its potential in high-value professional services. Critically examine. Mains Question

Greenium and Sovereign Green Bonds

India's Sovereign Green Bonds (SGrBs) are trading at a persistent greenium over comparable conventional government securities, reflecting stronger investor demand.

- The average greenium in H1 FY27 reached its highest level since India began issuing SGrBs in FY2022-23, indicating scope for a larger issuance of green bonds in H2 FY27. Greenium
- Greenium (green premium): Lower yield (interest rate) accepted by investors on green bonds compared with conventional government securities.
  - Lower yield reflects willingness to pay a higher price for environmentally sustainable investments.
- Significance of a Stable Greenium:
  - Cost-Effective Climate Action: Reduces government borrowing costs for renewable energy, electric mobility and adaptation projects, supporting Net Zero by 2070.
  - Market Maturation: Indicates a maturing green finance ecosystem and investor confidence in green taxonomies and ESG project evaluation. India's Sovereign Green Bond Framework
- SGrBs: Government debt instruments introduced in Union Budget 2022-23 to finance India's transition to a low- carbon economy.
  - Proceeds are exclusively earmarked for eligible green projects.
  - Framework aligned with ICMA Green Bond Principles, 2021.
  - Issued through uniform price auctions, eligible for repo, tradable in secondary markets and eligible for Statutory Liquidity Ratio (SLR).
- Sovereign Green Bonds Framework: Released by the Finance Ministry in 2022.

- Validated by CICERO with 'Medium Green' and 'Good Governance' ratings.

- Management Sovereign Green Bonds:
  - Proceeds deposited in the Consolidated Fund of India and managed by the Public Debt Management Cell through the Green Register.
  - Project selection and evaluation by the Green Finance Working Committee (GFWC), chaired by the Chief Economic Adviser.
  - Allocation and utilisation audited by the CAG.

- Current Status of India's SGrB Market:
  - ₹877 billion SGrBs outstanding.
  - 30-year bonds dominate, with outstanding issuance above ₹500 billion.
  - Earlier issuances were cancelled/reduced due to weak demand at acceptable yields; demand has since improved, especially for longer maturities.

- Drivers of Demand:
  - Insurers' Investment Needs: Long-term assets match long-term liabilities.
  - Infrastructure Status: Green bonds are treated as infrastructure investments.
  - Asset-Liability Management (ALM) Requirements: Long-duration bonds suit insurers and pension funds, supporting demand for 30-year maturities.

National Cooperative Development Corporation (Amendment) Bill, 2026

Parliament passed the National Cooperative Development Corporation (Amendment) Bill, 2026 to amend the NCDC Act, 1962 and expand the mandate and financing powers of NCDC. Key Highlights of the Bill

- Direct Financial Assistance: Earlier, NCDC could directly provide loans and grants mainly to national-level and multi-State cooperatives.
  - The Bill extends direct loans and grants to any cooperative society or entity engaged in cooperative development, subject to prescribed conditions.
  - NCDC can continue financing cooperatives through State Governments, while gaining an additional direct- financing channel.

- Expanded Definition of "Foodstuffs": Includes processed food and other food items notified by the Central Government, expanding eligibility for NCDC assistance.

- Industrial Goods: Removes the requirement that eligible industrial cooperatives, cottage/village industries and allied industries must be located in rural areas.

- Wider Investment Powers: With prior Central Government approval, NCDC may participate in the share capital of cooperatives/entities engaged in cooperative development.

- Information Sharing: NCDC may collect and furnish credit and other information and share it with the Central Government, RBI, banks and notified financial institutions. Concerns Raised Regarding the Bill

- Federal Friction: Cooperatives confined to one State fall under Entry 32 of the State List. Direct NCDC funding may bypass State Governments, raising concerns over centralisation and federal balance.

- Implementation Challenges: Since States perform important oversight and auditing functions, direct funding without State coordination may cause overlapping jurisdiction and monitoring problems. NCDC

- About: Statutory organisation established in 1963 under the NCDC Act, 1962.
  - The Act was earlier amended in 1973, 1974 and 2002, progressively expanding NCDC's scope and direct- financing powers.

- Nodal Ministry: Ministry of Cooperation.

- Mandate: Promote and develop farmer cooperatives to improve production, productivity and post-harvest facilities.
  - Finance processing, storage, cold chain and marketing of agricultural produce.
  - Support dairy, livestock, handloom, poultry, fisheries and cooperatives led by women and SC/ST communities.

- Financial Growth: Disbursements increased from ₹5,735 crore in 2014–15 to ₹95,182 crore in 2024–25.

- National Cooperation Policy (NCP) 2025:
  - Vision: Build a supportive legal, economic and institutional environment for cooperatives aligned with Viksit Bharat 2047.
  - Implementation: Focuses on transparent, technology- driven and professionally managed cooperatives, involving NCDC, IFFCO, NAFED, Amul, KRIBHCO, NDDB, NCEL and NABARD.

Mines and Minerals (Development and Regulation) Amendment Bill, 2026

Parliament passed the Mines and Minerals Amendment Bill, 2026 to create a more uniform and predictable fiscal framework by restricting State taxes and levies on mineral rights and mineral-bearing lands.

- The Bill addresses taxation challenges while raising concerns over mineral security, fiscal federalism and Centre-State relations, especially after the Supreme Court's 2024 judgment. Key Features of the MMDR Amendment Bill, 2026

- Union Control over Mineral-Bearing Lands: Amends Section 2 of the MMDR Act, 1957 to explicitly bring mineral-bearing lands under Union regulatory control.

- Capping State Levies — New Section 9D: States cannot impose tax, cess or other levies on mineral rights or mineral-bearing lands—whether based on quantity, value or royalty—except under conditions prescribed by the Centre.

- Past Dues: Unpaid or unrecovered levies before the amendment become invalid; amounts already paid will not be refunded.

- Rule-Making: Section 13 is amended to empower the Central Government to prescribe parameters for future State levies. Significance of the MMDR Amendment Bill, 2026

- Tax Certainty: Reduces multiple and unpredictable levies.

- Uniformity: Promotes more uniform taxation across States and lowers compliance costs.
- Investment & Production: Reduces uncertainty and mining costs, potentially encouraging domestic mineral production and investment. Concerns Regarding the MMDR Amendment Bill, 2026
- Federalism: Restrictions on State taxation of mineral rights and mineral-bearing land may affect powers under Entries 49 and 50 of the State List.
  - Parliament can limit mineral-right taxation under Entry 50, but questions remain over restrictions on land taxation under Entry 49.
- Supreme Court's 2024 Judgment: In Mineral Area Development Authority v. Steel Authority of India, an 8:1 majority of a 9-judge Constitution Bench upheld State power to tax mineral rights under Entry 50 and mineral- bearing lands under Entry 49.
  - The Court also permitted recovery of past tax dues retrospectively from 1 April 2005.
  - By invalidating certain unpaid/unrecovered past levies, the Bill seeks to alter the legal consequences of this ruling, raising questions of separation of powers and legislative competence.
- Article 14: Invalidating unpaid dues while not refunding paid levies could treat compliant and non-compliant companies differently.
- Excessive Delegation: Key conditions governing State taxation are left to Central rules, raising concerns that Parliament should itself define clearer principles.
- State Revenues: Restrictions may reduce the fiscal autonomy and revenue base of mineral-rich States. Mines and Minerals (Development and Regulation) Act, 1957
- About: Enacted under Union List Entry 54 to provide central legislative control over mineral regulation and development.
- 2015 Amendment: Introduced mandatory auction-based mineral concessions, created the District Mineral Foundation (DMF) and National Mineral Exploration Trust (NMET), and strengthened penalties for illegal mining.
- 2016: Defined "leased area" and allowed transfer of captive mining leases granted otherwise than through auction, subject to prescribed conditions and charges.
- 2020: Allowed companies without prior coal-mining experience to participate in coal/lignite auctions, widening participation and FDI.
- 2021 Amendment: Removed the distinction between captive and merchant mines; captive mines could sell up to 50% of annual production after meeting end-use requirements, while auction-based allocation was reinforced.
- 2023 Amendment: Removed six critical minerals—lithium, titanium, beryllium, niobium, tantalum and zirconium- bearing minerals/ores—from the list of 12 atomic minerals reserved for State agencies.
  - Empowered the Centre to exclusively auction concessions for critical minerals and introduced Exploration Licences to attract FDI and junior mining companies.
  - Supports access to deep-seated minerals required for future technologies and India's net-zero 2070 goal.
- 2025: Introduced a Mineral Exchange for transparent electronic trading of minerals, concentrates and processed metals.
  - Removed the 50% sale cap on captive mines, allowing open-market sale after meeting end-use requirements. Measures Needed to Strengthen Mineral and Mining Regulation
- Centre-State Coordination: Create a permanent mechanism to coordinate taxation, leases, auctions, production and mineral development.
- Improve DMF Outcomes: Ensure transparent, outcome-based use of DMF funds for health, education, livelihoods and local infrastructure in mining-affected areas.
- Deep Ocean Mission: Expand exploration of polymetallic nodules and sulphides containing nickel, cobalt, copper and manganese, while developing indigenous deep-sea mining technology with strong environmental safeguards.
- National Critical Mineral Mission: Expand domestic exploration, acquire overseas assets, promote recycling, and build beneficiation, processing and refining capacity across the critical-mineral value chain.
- Mine Closure & Restoration: Make progressive mine closure, land reclamation and ecological restoration enforceable throughout the mining lifecycle.
- Curb Illegal Mining: Strengthen satellite monitoring, drone surveillance, GPS-based mineral tracking and e-permits.

Container Manufacturing Assistance Scheme (CMAS)

India's rising trade and manufacturing needs have increased demand for a strong domestic container ecosystem and reduced import dependence.

- Government has proposed CMAS to strengthen maritime, shipping and logistics capabilities. Container Manufacturing Assistance Scheme
- Budget: Announced in Union Budget 2026–27.
- Outlay: ₹10,000 crore over 5 years.
- Objective: Develop a globally competitive domestic container-manufacturing ecosystem and strengthen supply-chain resilience.
- Capacity Target: Raise annual capacity to about 7.5 lakh Twenty-foot Equivalent Units (TEUs), nearly 10 times the existing capacity.
- Financial Support: Assistance for new greenfield units, expansion of brownfield units and operational competitiveness.
- Ecosystem Development: Supports testing infrastructure, skilling and capacity building.
- Policy Alignment: Complements Make in India, Maritime Amrit Kaal Vision 2047 and multimodal logistics development. Shipping Containers
- Standardised steel freight boxes enabling seamless movement across ships, railways and roads without repacking.
- Manufactured according to international ISO standards.
- Common sizes: 20-foot and 40-foot containers.

- Capacity is generally measured in TEUs. Other Government Initiatives Supporting Container Manufacturing and Maritime Development Building an Integrated Maritime Ecosystem
- Established through an MoU in Feb 2026.
- Partners: Shipping Corporation of India (SCI), Container Corporation of India (CONCOR), Jawaharlal Nehru Port Authority, V.O. Chidambaranar Port Authority and Sagarmala Finance Corporation Limited.
- Envisages about ₹99,149 crore investment for 51 container vessels and domestically manufactured containers. Integrated Maritime Ecosystem
- PM Gati Shakti: Improves port-rail-road-industrial connectivity.
- National Logistics Policy: Promotes digital integration, efficiency and lower logistics costs.
- Sagarmala Programme: Sagarmala, along with CMAS and BCSL, supports port-led development and maritime infrastructure.
- Shipbuilding Support: ₹70,000 crore Shipbuilding Financial Assistance Package.
- Digital Platforms: One Nation One Port Process, Maritime Single Window and e-Samudra.
- Modern Laws: Merchant Shipping Act, 2025; Coastal Shipping Act, 2025; Indian Ports Act, 2025.
- Major Projects: Vadhavan Port, Galathea Bay transshipment port, Tuna Tekra Container Terminal and Outer Harbour Container Terminal at V.O. Chidambaranar Port.
- Port Competitiveness: Three Indian ports ranked among the world's top 30 in the Container Port Performance Index 2025. Recent Progress in Container Manufacturing
- In July 2026, India rolled out its first domestically manufactured export-import (EXIM) shipping container for A.P. Moller–Maersk at the Maersk–CONCOR ICD, Dadri, UP.
- Manufactured according to ISO standards and International Convention for Safe Containers (CSC).
- Maersk placed an order for 1,000 additional Made-in-India containers with DCM Shriram Group. Why Does India Need Domestic Container Manufacturing?
- Around 80% of global merchandise trade by volume moves by sea.
- Containerised cargo accounts for nearly two-thirds of international trade by value.
- Geopolitical tensions and shipping disruptions have exposed supply-chain vulnerabilities and freight-rate volatility.
- India's expanding manufacturing and EXIM trade are increasing domestic container demand.
- India imports nearly 2 million empty containers annually, creating dependence on global prices and availability.
- Domestic manufacturing can improve container availability, supply-chain resilience and trade competitiveness. Domestic container manufacturing is essential for strengthening India's maritime logistics, supply-chain resilience and trade competitiveness. Discuss. Mains Question

Ship Recycling in India

India became the world's leading ship-recycling nation in 2025, with global share rising from 30.1% (2024) to 35.4% (2025) (UNCTAD).

- Recycling volume increased from 1.86 million GT to 2.99 million GT, nearly 60% growth.
- India achieved the Maritime India Vision 2030 target of global leadership five years early. How Has India Emerged as a Global Leader?
- Alang-Sosiya, Gujarat: Backbone of the sector, accounting for about 98% of India's ship recycling, with annual capacity of around 6 million GT.
- Capacity Expansion: India plans to raise recycling capacity to about 9 million light displacement tons (LDT) through expansion of Alang.
- Steel Recovery: Alang recovers around 3.50 MMT of steel annually, supporting resource conservation and the circular economy.
- Integrated Ecosystem: Includes authorised recycling yards, steel re-rolling mills, waste-management facilities and allied infrastructure.
- Worker Training: Alang's Safety Training and Labour Welfare Institute has trained 1.5 lakh+ workers in safety, hazardous-material handling and emergency response.
- Other Facilities: Ship recycling also takes place at Amar Iron Udyog, Kolkata and Steel Industrials Kerala Limited (SILK), Kerala.
- Modernisation: Yards now use engineered plots, impermeable surfaces, drainage systems, mechanised handling, segregated hazardous-waste storage and authorised disposal systems. Regulatory Framework Legal and Institutional Architecture
- Ship Recycling Act, 2019: It provides the principal statutory framework for ship recycling in India, designates the Directorate General of Shipping as the National Authority, and provides for authorisation, certification, inspection and enforcement mechanism.
- Ship Recycling Rules, 2021: The Rules operationalise the Act by prescribing requirements relating to facility authorisation, ship-recycling plans, hazardous-material management, worker safety, training and reporting.
- Ship Recycling Regulations, 2026: These Regulations strengthen implementation through more detailed operational, environmental and safety standards, promoting uniform compliance across recycling facilities. Provision Detail Principal law; Directorate General of Shipping Ship Recycling Act, is the National Authority; covers authorisation, 2019 certification, inspection and enforcement. Covers facility authorisation, recycling plans, Ship Recycling Rules, hazardous-material management, worker 2021 safety, training and reporting. Ship Recycling Strengthen operational, environmental and Regulations, 2026 safety standards and uniform compliance. Hong Kong Convention Compliance

- Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships became legally binding on 26 June 2025.
- India aligned its Ship Recycling Act, Rules and Regulations with Convention standards.
- Government provided ₹53.5 crore for modernisation, helping 115 facilities achieve compliance.
- EU Green Listing– 35 Alang yards have applied; Shree Ram Vessel Scrap and Y. S. Investments were included in the draft 16th European List. Inventory of Hazardous Materials (IHM) Identifies hazardous substances aboard ships and facilitates their safe handling, traceability, transparency and risk management throughout the ship lifecycle. Ship-breaking Credit Note Scheme
- Introduced under Ship Building Financial Assistance Scheme (SBFA) 2.0.
- Recycling a vessel at a compliant Indian yard generates a Credit Note equal to 40% of the vessel's scrap value.
- Credit Note can finance up to 5% of the value of a new Indian-built vessel.
- Objective: Promote both sustainable ship recycling and domestic shipbuilding. Ship recycling can strengthen India's maritime economy, resource security and circular economy goals. Discuss. Mains Question

Taxation and Other Laws (Amendment) Act, 2026

The Taxation and Other Laws (Amendment) Bill, 2026, passed by Parliament, became an Act after receiving Presidential assent, replacing the Income-tax (Amendment) Ordinance, 2026 and amending the Income-tax Act, 2025, Finance Act, 2026, and Payment and Settlement Systems Act, 2007. Key Provisions of the Act

- Push for Electronics Manufacturing: Under the Income Tax Act 2025, foreign companies supplying capital goods or utilizing Indian factories for contract manufacturing of electronics were exempt from income tax for five years.
  - The new Act explicitly defines eligible goods (mobile phones, laptops, servers, wearables) and extends this tax holiday by another ten years (up to 2040-41).
- Support for Electronics and Diamond Sectors: Grants tax exemptions to eligible foreign diamond companies and electronics manufacturers, including income from rough diamond sales and storage of electronic components in customs bonded warehouses.
- Tax Exemption for FIIs and BIS: Exempts Foreign Institutional Investors (FIIs) and the Bank for International Settlements (BIS) from income tax on interest and capital gains from government securities.
- Easing Rules for Foreign Fund Managers: The Act simplifies tax rules to allow foreign fund managers to relocate to India without making their foreign funds taxable, while retaining safeguards against tax avoidance and round- tripping.
- Boost for Data Centres: It removes complex, multi-layered government approval requirements previously mandated for foreign cloud companies to claim tax exemptions when using Indian data centers.
  - It also allows Indian data centers to operate on a leased basis rather than strictly under direct ownership, fostering a flexible ecosystem.
- Tax Benefits for Investment Trusts (REITs & InvITs): Restores tax-free dividend income for investors in Real Estate Investment Trusts (REITs) and Infrastructure Investment Trusts (InvITs) by exempting unit holders, while increasing the surcharge on Special Purpose Vehicles (SPVs) of business trusts from 10% to 25%.
- UPI Transactions: Amends the Payment and Settlement Systems Act, 2007 to empower the Central Government to permit banks and payment service providers to levy charges on Unified Payments Interface (UPI) and other notified electronic payment modes, replacing the existing prohibition on such charges.
  - The measure aims to create a sustainable revenue model for banks, payment service providers (PSPs), and payment infrastructure firms while supporting the growth of the digital payments ecosystem.
  - The amendments would allow the Central Government to enable the Merchant Discount Rate (MDR) on UPI and other notified electronic payment modes.
  - Currently, banks and payment system providers are prohibited from levying any charges, directly or indirectly, on notified electronic payment modes under Section 269SU of the Income-tax Act, 1961. Significance
- Encourages foreign direct investment (FDI) and global capital inflows.
- Strengthens the Make in India initiative by supporting electronics manufacturing.
- Promotes India as a global hub for data centres and cloud infrastructure.
- Positions India as an attractive destination for global investment fund management.
- Encourages greater investment in real estate and infrastructure through REITs and InvITs.
- Improves ease of doing business by reducing regulatory hurdles and providing tax certainty. Concerns Associated with the Act
- Impact on Digital Payments: The removal of the Zero- MDR provision may allow charges on UPI transactions, potentially affecting digital payment adoption, especially among small merchants and low-income users.
  - However, the move comes amid concerns that the zero-MDR regime has made the UPI ecosystem financially unsustainable. With UPI expected to add 600 million users and process 100–150 billion monthly transactions, sustained investment beyond government support will be essential.
- Revenue Implications: Long-term tax exemptions for foreign companies, FIIs, and other entities could reduce government tax revenues and affect fiscal consolidation.
- Risk of Round-Tripping: Relaxed rules for foreign fund managers may increase the risk of tax avoidance and round-tripping, despite anti-abuse safeguards.

- Uneven Competition: Targeted tax incentives for foreign companies may place domestic Micro, Small and Medium Enterprises (MSMEs) at a competitive disadvantage. Way Forward
- Link Tax Incentives to Performance: Make long-term tax exemptions performance-based, with periodic reviews and sunset clauses linked to outcomes such as job creation, exports, and technology transfer.
- Ensure Data Security: Align incentives for foreign cloud companies and data centres with the Digital Personal Data Protection (DPDP) Act, 2023 to balance investment promotion with data protection and cybersecurity.
- Strengthen Domestic Manufacturing: Complement tax incentives with expanded Production Linked Incentive (PLI) schemes and R&D support for MSMEs to build a resilient domestic electronics supply chain.
- Prevent Tax Abuse: Strengthen SEBI and Central Board of Direct Taxes (CBDT) oversight through AI-based monitoring and strict enforcement of the General Anti-Avoidance Rules (GAAR) to curb tax avoidance and round-tripping. Relaxation of tax rules for foreign investment funds can attract capital but also raises concerns regarding tax avoidance. Examine. Mains Question

National Handloom Day 2026

India observed the 12th National Handloom Day on 7th August 2026. Instituted in 2015, it commemorates the launch of the Swadeshi Movement in 1905 and recognises handloom weavers and allied workers. Key Features of India's Handloom Sector Dates to the Indus Valley Civilisation; spinning, weaving and Indian cotton/silk are mentioned Legacy in the Rigveda, Ramayana, Mahabharata and Kautilya's works. Manual, household-based and region-specific craftsmanship; contemporary design, digital Nature & Market platforms and exhibitions are widening market reach. Four censuses: 1987-88, 1995-96, 2009-10 and 2019-20. Pehchan/e-Pehchan identifies Census & workers; the portal launched in January 2025 Registration and approved about 84,000 additional workers by July 2026. Fourth All India Handloom Census 2019–20: 31.45 lakh handloom households and 35.22 lakh Employment weavers/allied workers; 8.48 lakh in pre- and post-loom work. Women: over 72% (about 25.46 lakh). Workforce Women & Inclusion includes 4.84 lakh SC, 6.28 lakh ST and 12.67 lakh OBC workers. Of 28.20 lakh looms, 25.30 lakh were rural and Rural Base 2.90 lakh urban - nearly nine in ten looms are in rural India. Government Initiatives Related to the Handloom Sector National Handloom Development Programme: NHDP (2021-22 to 2025-26) supports welfare, infrastructure, production, credit and marketing through public bodies, cooperatives, producer companies and banks. About 200 Handloom Producer Companies were formed during 2020-21 to 2026-27. Key components

- Small Cluster Development Programme: Up to ₹2 crore per cluster for looms, lighting, worksheds, design and marketing. 357 clusters sanctioned from 2021-22 to June 2026-27; ₹94 crore released in 2025-26.
  - Up to 100% workshed subsidy; daily output +53%, working hours +60%, monthly working days +28% and daily earnings +42% (₹328 to ₹465).
  - Electronic Jacquard Impact: Raised daily production by 55%, wages by 56% (₹360 to ₹560) and monthly income from ₹9,600 to ₹15,000; 96% reported productivity gains. Handloom Marketing Assistance: Over 960 expos, craft melas and exhibitions held during 2021-22 to June 2026-27. Sant Kabir Award: ₹3.5 lakh plus honours; National Handloom Award: ₹2 lakh plus honours. The 2024 award cycle honoured 24 recipients. Concessional Credit: Weaver MUDRA loans at 6% for three years, with interest subvention up to 7%, margin money and guarantee-fee support; over 40,000 loans worth more than ₹280 crore. PMJJBY: ₹2 lakh life cover; PMSBY: ₹2 lakh for accidental death/total disability and ₹1 lakh for partial disability. Expansion of Social Security: Insurance enrolment rose 80.8%, from 1,11,957 (2021-22) to 2,02,393 by May 2026-27; released funds rose 63.6%, from ₹204.83 lakh to ₹335 lakh. Scholarships up to ₹2 lakh annually for two children; 531 applications sanctioned by June 2026. Mega Cluster Development: Each covers at least 10,000 handlooms and can receive up to ₹30 crore over five years. Eight functional and four under implementation; ₹370.72 crore released for 1,62,682 weavers. Special Infrastructure: Need-based projects receive up to ₹12 crore for product development, quality, productivity, value addition and marketing. Six Craft Handloom Villages are operational and three under implementation.
- Raw-Material Supply Scheme (RMSS): Freight reimbursement on all yarn and 15% price subsidy on specified yarns. NHDP and RMSS continued in 2026- 27 with allocations of ₹205 crore and ₹200 crore, respectively. Union Budget 2026–27 and GST Rationalisation
- GST Rationalisation: GST on 36 handicraft items, cotton handloom rugs, handwoven carpets, and sewing machines reduced from 12% to 5% after the 56th GST Council meeting (September 2025).
- National Fibre Scheme: Strengthen the textile raw-material base and self-reliance in natural, man-made, and new-age fibres.
- Textile Expansion and Employment Scheme: Modernise traditional clusters through machinery support, technology upgrades, and common testing and certification centres.
- National Handloom and Handicraft Programme: Integrate existing schemes for coordinated and targeted sectoral support.
- Mahatma Gandhi Gram Swaraj Initiative: Support khadi, handloom, handicrafts, village industries, rural youth, and ODOP products through branding, skilling, quality improvement, and global market linkages.
- ODOP Integration: Promote district-specific products, local entrepreneurship, balanced regional development, branding, and wider market access. Strengthening Market Access and Buyer Confidence
- Growing Export Presence: Handloom exports reached ₹1,330.96 crore in 2025–26; major destinations were the UAE, US, France, UK, and Spain.
- Digital Market Access: Around 1.50 lakh weavers and handloom entities joined GeM to supply directly to government buyers.

- Direct-to-Consumer Platform: Indiahandmade enables verified weavers and producer groups to sell authentic and GI-tagged products directly to consumers; 4,186 weavers and artisans were onboarded between 2023–24 and June 2026.
- Handloom Mark: Launched in 2006 to certify genuinely handwoven products and identify manufacturers; 29,402 registrations and 815 retail outlets by 30 June 2026.
- India Handloom Brand: Launched on 7 Aug 2015 for premium natural-fibre products meeting standards on design, colourfastness, skin-friendly dyes, social compliance, zero defects, and environmental impact; 2,305 registrations across 184 categories by June 2026.
- GI Protection: Under the Geographical Indications of Goods Act, 1999, GI registration prevents unauthorised use and enables legal action against counterfeit production and marketing.
  - GI Coverage: By Aug 2026, registrations covered 106 handloom products, six product logos, and 227 handicraft products.
- Legal Reservation for Handlooms: The Handlooms (Reservation of Articles for Production) Act, 1985 reserves 11 textile articles exclusively for handloom production, protecting weavers from powerlooms and mills.

RBI to Resume Licensing of Urban Cooperative Banks

RBI will resume 'on-tap' UCB licensing after over two decades; new licences had been paused in 2004 following governance and financial instability under the 1993-2001 liberalised regime.

- The Union Cooperation Ministry has urged UCBs to join the National Urban Cooperative Finance and Development Corporation (NUCFDC) to strengthen technology, cybersecurity, employee training, and depositor confidence. Draft Eligibility Conditions Condition Requirement Operational Track Credit cooperative society must have at least Record 10 years of active operations. Minimum deposits of `10,000 crore and net Capital Base worth of at least `300 crore. Capital to Risk-Weighted Assets Ratio (CRAR) Financial Health of at least 12% and net NPA ratio not above 3% at the time the license is granted. Initial priority to societies registered under Geographical Footprint Multi-State Co-operative Societies Act, 2002 with operations across multiple States. RBI also proposes rationalising Marginal Cost of Funds Based Lending Rate (MCLR) and External Benchmark Lending Rate (EBLR) to Interest-Rate Reform standardise interest calculation and benchmark resets, improve transparency, transmission and consumer protection. NUCFDC
- It is a specialised NBFC registered with the RBI and the apex umbrella organisation for UCBs.
- It supports UCBs through shared digital banking technology, cybersecurity, liquidity assistance, regulatory compliance and capacity building, helping smaller banks reduce costs and improve governance.
- NUCFDC aims to secure official Self-Regulatory Organisation (SRO) status after meeting the required Rs 300 crore paid- up capital threshold, strengthening self-regulation, governance and compliance among UCBs.
- NUCFDC is currently headquartered in New Delhi and is proposed to be shifted to Maharashtra, as Maharashtra, Gujarat, Goa and Karnataka account for nearly 70% of UCBs.

Geographical Indications in India

GI tags link distinctive products to their geographical origin, protect cultural heritage and misuse, and improve market recognition for artisans, farmers, weavers and producer groups.

- Government support in finance, exports, tourism, and marketing is strengthening rural incomes, consumer trust, and global visibility. Geographical Indication
- Meaning: A designation for products whose quality, reputation or other characteristics are essentially attributable to a specific geographical origin.
- International Framework: Article 22(1) of TRIPS defines GIs; they are recognised under the Paris Convention for the Protection of Industrial Property and the WTO's TRIPS Agreement. Indian GI Framework Aspect Key Point Geographical Indications of Goods (Registration Law and Protection) Act, 1999 and Rules, 2002. GI Registry administers registration and Administration protection; registration lasts 10 years and is renewable for successive 10-year periods. Section 27 permits cancellation, variation or rectification where registration was improperly Cancellation obtained, misleading, generic or legally non- compliant. Application and related fees reduced by 80%; 2025 Amendment renewal fee lowered from `3,000 to `500. Over 800 registered GI products; 607 granted Growth since 2014; authorised users increased from 365 to about 29,000 by Jan 2025. As of Dec 2025– UP (81), Tamil Nadu (76) and Leading States Maharashtra (55) GI-tagged products. Darjeeling Tea was India's first registered GI; First Registrations early registrations included Aranmula Kannadi and Pochampally Ikat. Significance
- Heritage and Authenticity: Preserve traditional knowledge and craftsmanship while assuring consumers of origin, quality and cultural value.
- Livelihoods: Greater visibility, bargaining power and premium-market access can raise artisan incomes by 20- 30% and support local livelihoods.
- Exports: GI recognition improves global access; 30 metric tonnes of Muzaffarnagar jaggery were exported to Bangladesh in 2025, benefiting 545 farmer-members. Government Initiatives to Strengthen India's GI Ecosystem Initiative Key Provision / Outcome `5,000 crore allocated for dedicated retail PM Ekta Malls spaces for GI products, ODOP items and handicrafts across States. Railway stalls enable artisans, farmers, One Station One Product weavers and producer groups to directly sell regional products. Weaving-village and tea-estate trails; Assam GI-Based Tourism proposed the Muga Silk Trail, Silk Tourism Park and Muga Utsav. IPR component reimburses up to 100% of MSME Innovative GI-registration expenses, capped at `2 lakh Scheme per registered GI. Development Commissioner for Handicrafts Legal Support provides up to `1.5 lakh for GI enforcement and legal expenses. By June 2026, 104 GI-registered handloom products and 53 registrations were Handloom Promotion supported under Handloom Marketing Assistance. Supports GI agricultural

exports; examples APEDA & Export include Karnataka GI fruits to Maldives, Markets Salem Sago to Canada, Joha Rice to UK and Italy, and Tezpur Litchi to Dubai. GI protection included in trade talks; Indi Lime exported to Oman after India-Oman Trade & Promotion CEPA, while exhibitions and events promote GI goods. Geographical Indication tags can transform India's traditional products into instruments of cultural preservation and rural economic growth. Discuss. Mains Question

Critical Minerals: The Foundation for Strategic Resource Security

The IEA's Global Critical Minerals Outlook 2026 warns that concentrated refining capacity, supply disruptions, and China's 2025 rare earth export controls are increasing global mineral supply risks. In response, India is accelerating the National Critical Mineral Mission, overseas acquisitions, and global partnerships to reduce import dependence and support clean energy and manufacturing. Critical Minerals and Their Importance

- Meaning: Non-fuel metallic or non-metallic elements vital for advanced technologies; countries classify them by economic importance, substitutability and supply risk.
- India's List: 30 minerals identified by the Ministry of Mines, including Lithium, Cobalt, Nickel, Graphite, Copper and Rare Earth Elements (REEs).
- Clean Energy: Essential for EVs, batteries, solar cells and wind turbines—Silicon/Tellurium/Indium/Gallium for solar; Neodymium/Dysprosium for wind; Lithium/Cobalt/Nickel for storage.
  - NITI Aayog's Net Zero Scenario projects India's cumulative demand for Critical Energy Transition Minerals (CETMs) at ~169 Mt by 2070, nearly 51% higher than the Current Policy Scenario.
- Strategic Uses: Inputs for semiconductors, AI, electronics, telecom, missiles, jet engines and rare-earth magnets; support SDGs 7 (Affordable & Clean Energy), 9 (Industry, Innovation & Infrastructure), and 13 (Climate Action).
- Security Dimension: Export controls and resource nationalism (e.g., China's 2025 rare earth export controls) have turned critical minerals into the "new oil" of the clean-energy era; access is vital for energy, industrial, technological and defence security. Major Reserves/Occurrence in India Mineral Major Occurrence Lithium Karnataka and J&K. Associated with copper ores; small deposits in Odisha Cobalt & Nickel and Jharkhand. Andhra Pradesh, Karnataka, Odisha and Kerala; Kerala monazite sands are rich in REEs. Gujarat REEs and Rajasthan also hold 1.29 Mt of in-situ rare-earth oxide (REO) in hard-rock deposits. Graphite Arunachal Pradesh, Jharkhand and Tamil Nadu. How Geopolitics Is Reshaping Supply Chains
- Weaponised Controls: China's licensing restrictions exposed global vulnerabilities; European prices of gallium, dysprosium and terbium reached nearly five times Chinese prices (IEA's Global Critical Minerals Outlook 2026).
- Friendshoring: US-led Minerals Security Partnership, US–Australia Compact and EU Critical Raw Materials Act seek trusted parallel supply chains.
- Chokepoint Risks: China's May 2026 sulphuric-acid restrictions and Strait of Hormuz disruptions affected copper, lithium, cobalt, sulphur and aluminium flows.
- China+1: Countries are diversifying sourcing, domestic mining/refining and partnerships with trusted suppliers. Global Approaches Country/Bloc Approach Dominance across mining, processing, refining and China exports; uses minerals for geoeconomic influence. Friendshoring, alliances, domestic processing and US overseas investment to de-risk from China. Strategic autonomy through extraction, processing, EU recycling and supplier diversification. Trusted supplier using reserves, downstream Australia processing and partnerships. Resource diplomacy, overseas assets, long-term Japan contracts and strategic stockpiles. Integrated "Mine-to-Market" strategy: domestic India exploration, overseas acquisitions and global partnerships. Major Steps Taken by India in this Regard
- NCMM (2025): Implemented from FY 2024–25 to FY 2030–31; covers exploration, mining, processing, recycling, R&D, skills and stockpiling. Targets 1,200 exploration projects, production of 15 critical minerals, 270 kt annual recycling capacity to recover 40 kt, 1,000 patents and 7 Centres of Excellence.
- MMDR Amendment, 2023: Empowers the Centre to auction 24 of India's 30 identified critical minerals. •Khanij Bidesh India Limited (KABIL): Secured 15,703 hectares in Catamarca, Argentina, for lithium exploration; target of 50 overseas mining assets by 2030–31.
- International Partnerships: India–US Critical Minerals and Rare Earths Framework (May 2026), Pax Silica Initiative (2026), and Quad Critical Minerals Initiative (2025), which plans to mobilise up to USD 20 billion.
- Rare Earth Corridors: Proposed in Odisha, Kerala, Andhra Pradesh and Tamil Nadu under Budget 2026–27.
- Scheme to Promote Manufacturing of Sintered Rare Earth Permanent Magnets (REPM): Seeks a 6,000 Metric Tonnes Per Annum (MTPA) integrated ecosystem from rare-earth oxides to finished permanent magnets.
- PLI Schemes: Support ACC batteries, solar PV modules, electronics and semiconductors. Key Challenges
- Heavy Import Dependence: Lithium is almost fully imported; cobalt mainly from DRC (processed mainly in China), nickel from Indonesia and rare-earth magnets from China.
- "Missing Middle": India lacks battery-grade chemicals, high-purity graphite, rare-earth separation, advanced smelting and refining, where 70–90% of global value addition is concentrated.
- China's Midstream Monopoly: Refines over 90% of REEs and graphite, around 75% of cobalt and nearly 70% of lithium chemicals.
- Inadequate Exploration: Current surveys are largely shallow, while deep-seated minerals require geophysical, geochemical, hyperspectral and airborne techniques.
- Weak Project Economics: Small/low-grade or remote/ LWE-affected deposits and weak logistics, power and water reduce viability.

- Limited Private Capital: High-risk, patient funding is constrained by weak junior-mining and risk-sharing ecosystems.
- Weak Circular Economy: Limited recovery from e-waste, batteries, tailings, fly ash and red mud due to fragmented collection and technology gaps.
- Resource Nationalism: Export restrictions by producers such as Indonesia (Nickel) and Latin American countries increase overseas-sourcing uncertainty.
- No Strategic Stockpile: India lacks comprehensive critical-mineral reserves comparable to Strategic Petroleum Reserves. Measures to Secure Supply
- Explore Deep-Seated Deposits: Use AI, airborne geophysics, hyperspectral mapping and 3D geological modelling under NCMM.
- Build Processing Capacity: Create battery-grade lithium, nickel, cobalt and rare-earth refining, mineral parks and integrated value chains through incentives and PPPs.
- Diversify Overseas Sources: Use KABIL and long-term acquisitions in Australia, Argentina, Chile, Namibia and African countries.
- Create Strategic Reserves: Establish Strategic Critical Mineral Reserves to cushion geopolitical and supply shocks.
- Strengthen Circular Economy: Scale urban mining and recycling of e-waste, batteries, end-of-life vehicles, tailings, fly ash and red mud through EPR.
- Improve Ease of Mining: Streamline clearances, improve geological data and introduce risk-sharing to attract private investment.
  - Adopt a National Critical Minerals Strategy: Set mineral-specific risk thresholds, strengthen inter- ministerial coordination, monitor supply chains and integrate minerals into industrial, energy and national- security planning. “Critical minerals are the new oil of the 21st century.” Examine the strategic significance of critical minerals in the context of global energy transition and geopolitical competition. Mains Question

India's Solar Growth Enters a New Era

India’s installed solar capacity rose more than fiftyfold— from about 3 GW in 2014 to 162.15 GW on 30 June 2026— making solar the largest component of renewable-energy capacity.

- Growth has been driven by policy support, infrastructure, domestic manufacturing and public participation, with PM Surya Sarovar Yojana as the latest push. Solar Capacity Snapshot Indicator Status Added 37 GW in 2025, surpassing the US in Global Position annual additions and becoming the world’s second- largest solar growth market. National Solar Mission, Solar Parks Scheme, Policy Foundation Green Energy Corridor Programme and competitive bidding. Rajasthan, Gujarat, Karnataka, Tamil Nadu, Regional Expansion Andhra Pradesh and Maharashtra account for a major share. About 118.79 GW, including Bhadla, Pavagada and Utility-Scale Solar Rewa solar parks. Grid-connected rooftop systems contribute 27.88 Rooftop Solar GW; the balance comes from hybrid and off-grid systems. 44.61 GW added in FY 2025–26, nearly twice Record Addition the 23.83 GW added in FY 2024–25. Domestic module manufacturing rose from 2.3 Manufacturing GW in 2014 to nearly 172 GW by March 2026. 283.46 GW total, including 274.68 GW renewable Non-Fossil Capacity capacity; FY 2025–26 added a record 55.29 GW. Renewables met 51.5% of electricity demand Renewable Share on 29 July 2025, the highest recorded during the period. Policy Architecture Driving Expansion
- Vision and Targets: Panchamrit goals announced at COP26 include 500 GW non-fossil capacity by 2030 and net-zero emissions by 2070, reflected in India’s updated NDCs. Mission LiFE promotes sustainable consumption.
- Demand Creation: National Solar Mission created sustained demand; Renewable Purchase Obligations provide market certainty, with the 2026–27 target fixed at 35.95%. PM Surya Ghar and PM-KUSUM broaden household and farmer participation.
- Lower Costs: e-Reverse Auctions and SECI-led procurement reduced tariffs from about ₹18/unit in 2010 to ₹2.44/unit at Bhadla in 2017. In 2025, utility-scale solar LCOE was USD 35/MWh versus the global average of USD 44/MWh.
- Enabling Infrastructure
  - Solar Parks: Target raised from 20 GW to 40 GW in 2017. By February 2026, 54 parks with 39,188 MW sanctioned capacity had been approved.
  - State Leaders: Gujarat—12,150 MW across 7 parks; Rajasthan—10,726 MW across 11 parks; Madhya Pradesh—4,208 MW across 9 parks.
  - Major Parks: Bhadla (Rajasthan), Pavagada (Karnataka) and Rewa (Madhya Pradesh). Bhadla’s 2,245 MW capacity shows how common land and transmission infrastructure can attract investment and lower tariffs.
  - Grid Integration: By February 2026, the Green Energy Corridor enabled evacuation of 24,567.8 MW; planned projects in 10 States aim to support around 44 GW.
- Supporting Manufacturing
  - Manufacturing PLI: Launched in 2021 with ₹4,500 crore and expanded in 2022 by ₹19,500 crore to promote NEER and REER.
- Correction in External Valuation:
  - Average exchange rate moved from Rs 84.4 per US dollar (November 2024) to about Rs 95.5 (May 2026). NEER fell from 91.68 to 77.19; REER declined from 108.03 to 89.08 and recovered slightly to 91.26 in June 2026, indicating a shift from overvaluation to undervaluation (below 100).
- Strong Fundamentals:
  - GDP growth above 6%, moderating inflation, a stable external sector and forex reserves covering over 11 high-efficiency PV modules and reduce imports. By October 2024, it attracted about ₹35,000 crore investment and generated around 10,000 direct jobs.
  - ALMM: Introduced in 2019 to ensure prescribed quality and performance standards for modules and cells used in specified projects while supporting domestic manufacturing. India’s Solar Growth Enters a New Era
- Related Initiatives: PM Surya Ghar Muft Bijli Yojana, PM-KUSUM

- Global: International Solar Alliance, One Sun One World One Grid (OSOWOG), Green Grids Initiative (GGI)–OSOWOG– launched by India and the UK at COP26.
  - During its G20 Presidency, India helped build consensus on tripling global renewable-energy capacity by 2030.

Indian Rupee: From Overvaluation to Undervaluation

RBI Governor stated that the rupee is undervalued in nominal and REER terms despite nearly 5.8% depreciation against the US dollar in 2026. The RBI attributes the weakness mainly to global financial headwinds, not deterioration in India's macroeconomic fundamentals. months of imports suggest depreciation does not reflect underlying economic weakness.

- Global Headwinds:
  - Elevated crude oil prices, a stronger US dollar, geopolitical tensions and FPI outflows increased dollar demand and placed temporary downward pressure on the rupee.
- REER-Based Assessment:
  - The rupee is trading below its equilibrium value, implying depreciation beyond what India's macroeconomic fundamentals would ordinarily justify. Impact of an Undervalued Rupee Potential Benefits Associated Risks
- Makes Indian exports relatively cheaper and improves export IND Raises the cost of crude oil, competitiveness. fertilisers, electronics and
- S t r e n g t h e n s d o m e s t i c other imports, causing manufacturing against imports imported inflation. and supports Make in India. IND Increases input costs for
- May reduce the trade deficit if import-dependent industries. export growth exceeds import IND Raises servicing costs of growth. E x t e r n a l C o m m e r c i a l
- However, exchange-rate Borrowings (ECBs). advantage alone is insufficient IND May widen the Current without higher productivity, Account Deficit (CAD) when oil efficient logistics and stronger prices are high. manufacturing. What is the Real Effective Exchange Rate (REER)? Examine its significance in assessing currency valuation and external competitiveness. Mains Question

Minimum Support Price and the Need for Alternative Farmer Support

Madhya Pradesh farmers ended protests after the State agreed to procure 60% of estimated summer moong output, against the earlier 25% limit, reviving debate over MSP sustainability and the need for structural reforms in agricultural support. Why MSP is Difficult to Sustain

- Fiscal Burden: Extending MSP-backed procurement to all 23 notified crops could cost ₹10 -17 lakh crore, reducing funds for irrigation, R&D, storage and rural infrastructure.
- Market Distortion: A legally binding price floor means no transaction can legally occur below the MSP. This artificially inflates prices, discourages private sector participation, and forces the government into becoming the sole buyer (monopsony).
- Cropping Pattern Distortion: Assured Rice–wheat procurement incentivises monoculture, discourages diversification towards pulses, oilseeds and horticulture and undermines nutritional and import security.
- Ecological Damage: Paddy cultivation in Punjab and Haryana contributes to groundwater depletion, soil degradation and stubble burning.
- Limited & Unequal Benefits: The Shanta Kumar Committee (2015) found that only about 6% of farmers benefit from MSP procurement, mainly in Punjab, Haryana and among large surplus-producing farmers, excluding most small and marginal farmers.
- Storage Burden: Excess procurement leaves FCI with rice and wheat stocks beyond PDS and buffer needs, increasing storage costs and wastage.
- Outdated Costs: Lagged estimates may not reflect sudden rises in fertiliser, diesel, labour and other input costs.
- WTO Compliance Concerns: For developing countries, the WTO AoA (Agreement on Agriculture) caps trade-distorting Amber Box support at the 10% de minimis limit; aggressive MSP procurement risks breaching this threshold and triggering trade disputes. Minimum Support Price
- Meaning: Pre-announced price at which the government procures specified crops, protecting farmers from price crashes and distress sales.
- Announcement: Declared at the beginning of the sowing season on recommendations of the Commission for Agricultural Costs and Prices (CACP).
  - CACP is an attached office of the Ministry of Agriculture & Farmers Welfare.
  - Final MSP approved by the Cabinet Committee on Economic Affairs (CCEA).
- Coverage: MSP for 22 mandated crops and Fair and Remunerative Price for sugarcane.
- Procurement Agencies: FCI, NAFED and Cotton Corporation of India. Cost Formula
- A2: Paid-out expenses such as seeds, fertilisers, hired labour, fuel and irrigation.
- A2+FL: A2 plus imputed family labour; current basis for MSP.
- Since 2018–19, MSP is fixed at least 1.5 times the all-India weighted average cost of production.
- C2+50%: The National Commission on Farmers (NCF), chaired by Dr. M.S. Swaminathan recommended fixing the MSP at least 50% above the comprehensive C2 cost (including A2+FL, imputed rent on owned land, and interest on fixed capital).
  - Demanded by farmers but not accepted due to fiscal and market concerns. Alternatives Beyond MSP Measure Purpose Minimum Income Support Per-acre transfers and enhanced PM-KISAN (MIP) support without market distortion. Compensate the MSP–market price gap under PM-AASHA without physical procurement. A combination of PM-AASHA Price Deficiency Payment (Price Deficiency Payments), MIP, crop Systems (PDPS) diversification, FPOs, and market reforms offers a more sustainable approach to protecting farmer incomes. Expand AIF, warehouses, cold chains and Market Infrastructure e-NAM for transparent and competitive price discovery. Improve bargaining power of small farmers FPOs and Cooperatives through FPOs,

enabling better market access and price realisation. Promote pulses, oilseeds and millets through Crop Diversification agro-climatic planning - for import reduction and ecological sustainability. Enable farmer-buyer agreements with legal Contract Farming safeguards to ensure assured markets, stable prices and technology transfer. Promote climate-resilient seeds, precision R&D and Extension farming, Soil Health Cards and Per Drop More Crop. Restrict assured procurement to strategic crops and regions. Allow States to design Targeted MSP context-specific procurement models based on local agricultural conditions. Shift from Amber Box price support to Green WTO-Compatible Support Box income and infrastructure support. Discuss the limitations of the existing Minimum Support Price (MSP)-based agricultural support system. Suggest policy measures to protect farmers beyond MSP. Mains Question

India as a Tourism Hub

Govt. highlighted India's potential as a major tourism hub, driven by better infrastructure, connectivity, digital services, travel facilitation, global promotion, and sustainable tourism. Tourism as a National Growth Engine

- Economic Linkages: Supports hospitality, transport, handicrafts, food services, wellness, culture, and local enterprises.
- Domestic Tourism: Around 2.9 billion visits in 2024, exceeding pre-pandemic levels.
- International Arrivals: Nearly 2.02 crore in 2025.
- GDP Contribution: About ₹15.73 lakh crore, or 5.22% of GDP, in 2023–24.
- Employment: Supported around 84.6 million jobs in 2023–24.
- Foreign Exchange Earnings: Nearly USD 31.7 billion in 2025.
- Regional Development: Generates local livelihoods, promotes small businesses, and improves infrastructure in less-developed regions.
- Global Potential: India's heritage, landscapes, spirituality, wellness traditions, and experiential tourism strengthen its global tourism prospects.
- Heritage: 45 UNESCO World Heritage Sites showcase India's cultural and natural richness.
- Nature: 106 National Parks, 18 Biosphere Reserves, forests, beaches, islands and diverse landscapes support nature tourism. Major Tourism Segments
- Spirituality: India, the birthplace of Hinduism, Buddhism, Jainism and Sikhism, hosts major pilgrimage centres such as Char Dham, Kashi, Ayodhya, Bodh Gaya, Amritsar, Tirupati and Puri.
- Buddhist Tourism: Bodh Gaya, Sarnath and Kushinagar promote India's civilisational links with Asia.
- Heritage and Cultural Tourism: Forts, temples, museums, festivals, handicrafts, dance, music and regional cuisines showcase India's cultural heritage.
- Wellness and Medical Tourism: Yoga, Ayurveda, affordable treatment and advanced medical facilities attract international visitors.
- Eco-tourism and Wildlife Tourism: Parks, reserves, wetlands and Himalayan regions support conservation tourism and local livelihoods.
- Rural and Community Tourism: Homestays, crafts, cuisine and village experiences generate income for rural communities.
- MICE Tourism: Modern convention infrastructure supports meetings, incentives, conferences and exhibitions, creating year-round activity.
- Coastal Cruise and Adventure Tourism: India's 7,500-km coastline, islands, rivers, deserts and mountains support cruises, water sports, trekking, rafting and safaris. Role of Infrastructure-Led Development in Transforming Tourism Destinations
- Swadesh Darshan: 76 projects worth ₹5,295.24 crore sanctioned across 14 thematic circuits; 75 completed.
- Swadesh Darshan 2.0: 53 destination-centric projects worth ₹2,207.08 crore sanctioned for sustainable infrastructure and better visitor experience.
- PRASHAD Scheme: 54 projects worth ₹1,726.24 crore sanctioned for pilgrimage and heritage destinations.
- Capital Support to States: 40 projects across 23 States, worth ₹3,295.76 crore, approved for globally competitive tourist centres.
- Challenge-Based Destination Development: 37 projects worth ₹687.99 crore sanctioned, mainly for spiritual and eco-tourism destinations.
- Improved Connectivity: Highways, modern railway stations, Vande Bharat, UDAN, e-buses and last-mile transport are improving tourist access.
  - Viksit UDAN: Over ₹28,840 crore allocated for more than 100 aerodromes and 200 helipads in Tier-2, Tier- 3 and remote regions. India's Efforts to Improve Ease of Travel and Digital Tourism
- e-Tourist Visa: Available to nationals of 175 countries through 33 airports, 19 seaports and 4 land ports, simplifying international travel.
- Visa Facilitation: Expanded e-Visa categories, digital authorisation and designated entry points have eased tourist access.
- NIDHI+: Unified platform for registration, recognition and classification of tourism service providers, with online applications, payments and transparent approvals.
- Tourism Startups: 1,497 DPIIT-recognised startups across 262 districts generated nearly 13,919 jobs as of April 2023.
- Regional Entrepreneurship: About 58% of tourism startups are located in Tier-II and Tier-III cities.
- Technology-Driven Services: Startups support online booking, homestays, rural tourism, smart mobility and AI-based travel planning.
  - Notable Innovations: Highway Delite connects highway amenities, VilloTale promotes rural homestays and udChalo serves defence personnel and veterans. Role of Sustainable and Inclusive Tourism in Long-Term Growth

- Sustainable Tourism Model: Integrates environmental protection, community participation, economic inclusion and quality visitor experiences.
- Travel for LiFE: Promotes responsible travel, resource conservation and eco-friendly choices.
- Destination Diversification: Nature-based activities reduce pressure on crowded destinations and support regional tourism.
- Community Benefits: Creates jobs and income for guides, artisans, homestays and local enterprises.
- Protection: Preserves local culture, heritage, biodiversity and natural resources.
- SDG Contribution: Supports SDG 8.9, SDG 12.B and SDG 14.7. Tourism can act as a driver of economic growth, employment and cultural diplomacy in India. Discuss. Mains Question

ILO Convention No. 193 on Decent Work in the Platform Economy

At the 114th International Labour Conference, Geneva, the ILO adopted Convention No. 193 (Decent Work in the Platform Economy), the world's first legally binding treaty for app-based gig and platform workers.

- Under the ILO's tripartite voting framework (comprising government, employer, and worker representatives), India's government delegates abstained, whereas both its employer and worker delegates voted in favor of the treaty. Key Provisions
- Adopted in June 2026.
- Ensures minimum wages, timely payment, social security and occupational safety.
- Applies irrespective of classification as employees, contractors or platform partners.
- Mandates transparency in algorithms governing work allocation, wages, ratings and account deactivation.
- Requires human oversight of significant automated decisions.
- Directs governments to classify workers based on the actual nature of work rather than contractual labels, preventing the misclassification of employees as independent contractors. Why India Abstained
- Domestic Law: Code on Social Security, 2020 already covers gig and platform workers.
- Conformity Principle: India generally ratifies ILO Conventions only after ensuring full alignment with domestic laws.
- Federal Concerns: Labour is in the Concurrent List; the Centre prefers retaining flexibility for States to frame their own labour regulations.
- Economic Concerns: Provisions on worker reclassification and algorithmic transparency could increase compliance costs, affect the platform business model, and discourage digital innovation.
- Cost and Consequences of Abstention:
- May allow worker misclassification and opaque algorithmic control.
- Denies workers an international legal baseline against platform abuses.
- Widens the protection gap with ratifying countries.
- May affect India's image as the voice of the Global South. Gig Economy in India
- Workforce: 7.7 million in 2020–21, projected to reach 23.5 million by 2029–30 (NITI Aayog)—about 6.7% of the non-agricultural workforce.
- Growth drivers: Expansion of internet connectivity (96.96 crore connections in 2024), widespread smartphone adoption (85.5% of households), and app-based platforms under Digital India.
  - Rapid growth of e-commerce, quick commerce, ride-hailing, and food delivery platforms.
  - Urban demand for on-demand services.
  - High unemployment, underemployment, and a large semi-skilled workforce have made gig work an accessible source of income.
  - Preference among youth for flexible work and multiple incomes. Indian Legal Framework
- Code on Social Security, 2020: Defines gig and platform workers.
  - Aggregators must contribute 1–2% of annual turnover, capped at 5% of worker payouts, to a social security fund.
  - Benefits include life and disability cover, accident insurance, health, maternity, pension and crèche facilities.
- State Initiatives:
  - Rajasthan: Platform-Based Gig Workers Act, 2023.
  - Karnataka and Telangana: Drafted welfare boards and fund mechanisms. Electronic Gold Receipt India's EGR ecosystem is promoting transparent, standardised, and exchange-based trading of physical gold. By digitising gold ownership while allowing physical delivery, EGRs are modernising the bullion market and improving investor confidence. Electronic Gold Receipt (EGR)
- Gold Exchange Ecosystem: The SEBI-regulated Gold Exchange provides a national platform for standardised trading of physical gold. It formalises India's fragmented bullion market and enables a transparent, real-time domestic spot price.
- EGR: An EGR is a SEBI-regulated electronic security representing ownership of physical gold stored in SEBI-accredited vaults.
  - EGRs are held in demat form and traded on recognised stock exchanges. Investors can convert them into physical gold when required.
  - Each EGR is 100% backed by equivalent physical gold, generally of 995 or 999 fineness, stored with a SEBI- registered Vault Manager.
  - The holder becomes the beneficial owner of the gold without storing or transporting it.
- Need for EGR: SEBI introduced the Gold Exchange Framework, 2022 to address opaque pricing, inconsistent purity, high transaction costs, fragmented trade, and dominance of the unorganised sector.

- The framework aims to ensure transparent price discovery, standardised quality, investor protection, and easy conversion between dematerialised receipts and physical gold.
- Key Participants in the EGR Ecosystem:
  - Vault Manager: Stores, verifies, assays, and delivers physical gold under the SEBI Regulations, 2021.
  - Depository (NSDL/CDSL): Holds EGRs electronically in investors' demat accounts.
  - Stock Exchanges (NSE/BSE): Provide platforms for EGR trading.
  - Stock Brokers: Facilitate the purchase, sale, and redemption of EGRs.
  - Investors: Individuals, HUFs, NRIs, trusts, and institutions holding EGRs through demat accounts.
- Working of EGR:
  - Stage I—Creation: 995/999 purity gold is deposited with a SEBI-registered Vault Manager for verification and storage. Equivalent EGRs are issued by the Depository and credited to the depositor's demat account.
  - Stage II—Trading: EGRs are traded on the NSE and BSE Gold Exchanges at prices linked to the domestic spot market. Ownership transfers electronically on a T+1 settlement basis, while the gold remains in the vault.
  - Stage III—Redemption (Withdrawal): Investors request physical gold through a broker or Depository Participant (DP). The Vault Manager delivers the gold and extinguishes the corresponding EGR.
- Significance of EGRs
  - Unified Price Discovery: Creates a transparent "One Nation, One Price" domestic spot price based on real- time demand and supply.
  - Reduced Dependence on Foreign Benchmarks: Develops an Indian reference price, reducing reliance on LBMA and Dubai benchmarks.
  - Storage and Security: Eliminates individual locker costs and theft risks, as the gold is stored in secure, insured vaults.
  - Quality Assurance: Mandatory purity verification reduces adulteration risks in the unorganised market.
  - Tax Efficiency: Zero GST applies to EGR trading; 3% GST applies only when EGRs are converted into physical gold.
- Limitations of EGRs: EGR adoption is limited by low awareness, low trading volumes, developing vault infrastructure, storage and redemption charges, GST on physical withdrawal, and competition from Gold ETFs, digital gold, and Sovereign Gold Bonds. EGR and India International Bullion Exchange (IIBX)
- IIBX: Located in GIFT City, Gujarat, it is India's first international bullion exchange, regulated by the IFSCA. It facilitates bullion imports and international trading.
- Link with EGRs: IIBX supplies standardised bullion, while EGRs enable its domestic electronic trading.
- Gold imported through IIBX can be deposited in SEBI-accredited vaults and converted into EGRs after meeting prescribed purity and quality standards.

India Allows FDI in Inventory-Based E-Commerce Model for Exports

The government has revised the Foreign Direct Investment policy to permit foreign-funded e-commerce entities to maintain inventories exclusively for exporting goods manufactured or produced in India. Key Facts About Revised Foreign Direct Investment (FDI) Policy

- About: Foreign-owned e-commerce companies can now own and manage inventory in India, provided the goods are domestically produced and sold only in overseas markets. The Department for Promotion of Industry and Internal Trade has created an export-specific exception to the restrictions on inventory-based e-commerce.
  - However, foreign-funded inventory-based e-commerce remains prohibited for domestic retail sales, preserving safeguards for small traders and the ban on FDI in multi-brand retail.
- Objective: The policy aims to improve Indian sellers' access to global markets, promote exports and reduce the compliance burden on MSMEs. The measure could help Tier-2 and Tier-3 manufacturers, artisans and small businesses export products such as handicrafts, garments, books, art, gems and jewellery.
- Beneficiaries: Global platforms such as Amazon and Walmart-owned Flipkart can source products from Indian manufacturers, manage inventories and handle export.
- Implementation: The decision will take effect after the relevant notification under the Foreign Exchange Management Act,1999.
- Existing Policy: India earlier permitted 100% FDI under the automatic route only in marketplace-based e-commerce and B2B e-commerce, while prohibiting FDI in inventory- based models.
- Concerns: Critics argue that separating export and domestic inventories may be difficult to monitor and could eventually create pressure to permit foreign-funded inventory-based e-commerce in the domestic market. Significance
- Export Promotion: Provides Indian sellers with an additional e-commerce channel to reach global consumers and expand merchandise exports.
- Support for SMEs: Benefits small and medium enterprises in sectors such as apparel, jewellery, handicrafts, home products and organic wellness by easing access to international markets.
- Opportunities for Regional Manufacturers: Enables manufacturers in tier-2 and tier-3 cities to widen their overseas customer base and participate more actively in global trade.
- Long-Term Economic Impact: Supports India's manufacturing and export-growth objectives, including the target of achieving $80 billion in cumulative e-commerce exports by 2030. I n t e r n a t i o n a l R e

INTERNATIONAL RELATIONS

India-Japan Maritime Security Pact

India and Japan signed a Memorandum of Arrangement (MoA) on Maritime Security Cooperation in New Delhi to deepen defence and maritime security cooperation.

- About the MoA: Provides a framework for cooperation between the Indian Navy and Japan Maritime Self- Defense Force (JMSDF) in Maritime Domain Awareness, Search and Rescue, and HADR.
- Naval Shipbuilding and Repair: Both sides will explore joint naval shipbuilding and design and reciprocal ship- repair arrangements, including greater use of Indian shipyards under Make in India.
- Military Exercises: Cooperation will expand through Dharma Guardian, JAIMEX and Veer Guardian 26.
  - Veer Guardian 26 will mark the first participation of Japanese fighter aircraft in an air exercise in India.
  - Future drills may include short-notice and unmanned- system-enabled exercises.
- Defence Technology Cooperation: DRDO and Japan's Acquisition, Technology & Logistics Agency (ATLA) will deepen advanced technology cooperation; a Defence Industry Forum will promote industrial collaboration.
- UNICORN Project: The shipborne UNICORN integrated communications antenna system is being pursued as the first defence equipment transfer project between India and Japan.
- Special Operations and Theatre Commands: Both sides will promote Special Operations Forces exchanges and explore cooperation with India's future integrated theatre commands.
- Indo-Pacific Cooperation: Reaffirmed support for a free and open Indo-Pacific, freedom of navigation and opposition to unilateral alteration of the status quo by force.
  - Cooperation with third countries will expand through exercises and the Indo-Pacific Logistics Network.
- Institutional Mechanism: A Director-General/Joint Secretary-level Working Group will coordinate operational, intelligence, equipment, technology and industrial cooperation.
  - Both sides will also prepare for the 4th India-Japan 2+2 Foreign and Defence Ministerial Dialogue in Tokyo.

India's Trade Agreements in Action

The government highlighted India's growing use of FTAs, reflected in higher exports, greater use of preferential Certificates of Origin (CoOs) and wider product diversification across partner markets. I a t i o n s Expanding Export Opportunities and Global Market Access through India's FTAs

- Expanding Trade Network: India has widened its FTA network across major markets to deepen global economic integration.
- Focus: Convert negotiated market access into higher exports, investment and employment, while protecting sensitive domestic sectors.
- Record Exports: Merchandise and services exports reached USD 863.1 billion in FY 2025–26, including USD 441.8 billion merchandise exports.
- April–June 2026: Combined exports grew 11.37% year-on-year. India-UAE CEPA: Early Trade Gains
- Implemented: 1 May 2022, after negotiations completed in 88 days.
- India exported USD 37.36 billion of merchandise to UAE in FY 2025–26, making it India's largest individual FTA export market.
- Bilateral trade crossed USD 100.06 billion in FY 2024–25, growing 19.6%.
- Target: USD 200 billion bilateral trade by 2032. Export Facilitation through Certificates of Origin
- Preferential CoO: Certifies compliance with rules of origin and enables concessional or zero tariffs under FTAs.
- e-CoO 2.0: Provides end-to-end digital CoO issuance with Aadhaar- based e-signatures and QR verification.
- Simplified Rules:
  - India-EFTA TEPA and India-UK CETA: Permit self-declaration of origin. UK agreement also permits importer's knowledge and waives documentation below £1,000.
  - Australia ECTA: Allows multiple qualifying products under a single CoO.
- Trade Connect: Helps exporters, especially MSMEs, access tariff information, FTA opportunities and CoO support. India-Australia ECTA: Expanding Trade Partnership
- Implemented: 29 December 2022.
- India's exports to Australia rose from about USD 4 billion in FY 2020–21 to USD 7.28 billion in FY 2025–26, over 80% growth.
- Australia initially gave zero-duty access on 98.3% tariff lines; from 2026, all Indian exports became eligible for zero-duty access.
- ECTA is the basis for negotiations on a broader India-Australia CECA. Connecting Indian Goods and Skills to Global Markets through FTAs Expanded Market Access for Merchandise Goods Agreement Market Access India-UK CETA Nearly 99% of Indian exports duty-free India-Oman CEPA Concessions on about 98% of tariff lines 92.2% tariff lines, covering about 99.6% of India-EFTA TEPA Indian exports Preferential access for 310 Indian product India-Mauritius CECPA lines Around 97% of tariff lines, covering nearly India-UAE CEPA 99% of Indian exports India-Australia ECTA 100% of Australian tariff lines duty-free
- Awaiting Implementation:
  - India-EU FTA: Preferential treatment across about 97% of EU tariff lines, covering nearly 99.5% of bilateral trade value.
  - India-New Zealand FTA: Duty-free access for 100% of Indian exports from entry into force.
- Major beneficiaries include textiles, agriculture and processed food, leather, footwear, marine products, gems and jewellery, carpets and handicrafts.
- Tariff calibration and transition arrangements protect farmers and sensitive industries. New Opportunities for Indian Services and Professionals
- Services exports: Around USD 421.3 billion in FY 2025–26; services account for nearly 30% of employment.
- India-New Zealand FTA: Up to 5,000 skilled Indians can stay for up to 3 years.

- Commitments in 118 services sectors and MFN treatment in 139 sectors.

- India-EU FTA: Covers 144 services sub-sectors and facilitates mobility of business visitors and intra-corporate transferees, along with dependant work rights and social- security cooperation.

- India-UK CETA: Facilitates mobility of business visitors, intra-corporate transferees, contractual suppliers and independent professionals.

  - Double Contribution Convention expected to save over ₹4,000 crore in dual social-security payments.

- India-EFTA TEPA: Access to 128 sub-sectors in Switzerland, 114 in Norway, 110 in Iceland and 107 in Liechtenstein.

  - Provides for MRAs in nursing, chartered accountancy and architecture.

- India-Oman CEPA: Facilitates temporary entry of intra-corporate transferees, contractual suppliers, business visitors and independent professionals.

- India-Australia ECTA: Commitments across about 135 services sub-sectors and MFN treatment across 120 sub-sectors.

- India-UAE CEPA: Access to about 111 sub-sectors across 11 broad areas.

- India-Mauritius CECPA: Access to about 115 services sub-sectors across 11 broad areas. India's Free Trade Agreement strategy is shifting from market access creation to effective utilisation. Discuss. Mains Question

The Makkah Joint Defence Agreement

Saudi Arabia, Türkiye and Pakistan signed the Makkah Joint Defence Agreement (MJDA) at Al-Safa Palace, Makkah. An armed attack on one member will be treated as an attack on all three, creating a new "triple alliance"/"Sunni security triangle" amid shifting West Asian security dynamics. Key Features

- Background: Builds on the Saudi-Pakistan Strategic Mutual Defence Agreement (Sept 2025); Türkiye joined in August 2026, converting it into a trilateral arrangement.

- Collective Defence: An attack on one is treated as an attack on all three. It resembles NATO Article 5 in principle, but operational commitments and enforcement mechanisms remain unclear.

- Military Coordination: Regular joint training and combined military exercises to improve interoperability and readiness.

- Intelligence Sharing: Formal channels for strategic intelligence, security data and threat assessments. Why Was the Pact Formed?

- Saudi Arabia: Seeks reduced dependence on the US security umbrella; faces Houthi, Iranian missile/drone/ proxy threats and risks around Hormuz and Bab-el- Mandeb, with implications for oil exports and Vision 2030.

- Türkiye: Seeks greater strategic leverage amid concerns over Israel's military presence in Gaza and Syria.

- Pakistan: Gains strategic relevance in West Asia and stronger defence, economic and energy ties with Saudi Arabia.

- Pakistan-Türkiye-China Axis: Deeper Saudi ties with Pakistan and Türkiye, both close to China, could strengthen a network along India's western flank; Türkiye's Gulf defence push may compete with Indian systems such as BrahMos and Akash.

- India-Saudi Relations: Pakistan and Türkiye have opposed India on Kashmir in multilateral forums; greater Saudi dependence on Pakistan could give Islamabad leverage. However, India-Saudi economic, energy, investment and strategic ties remain institutionalised through the Strategic Partnership Council.

- Western Indian Ocean: The pact could extend the three countries' strategic presence into an area where India seeks to remain a net security provider.

- Conflict Threshold: The "attack on one is an attack on all" clause creates uncertainty over possible Saudi or Turkish political/military support in an India-Pakistan conflict.

- Pakistan Military Modernisation: Saudi finance plus Turkish technology could accelerate Pakistani acquisition of advanced fighters, drones and air-defence systems.

- Counter-Terrorism Diplomacy: Closer Saudi-Pakistan security ties may provide Islamabad greater diplomatic space and complicate India's efforts against cross-border terrorism.

- Nuclear Ambiguity: Pakistan's nuclear capability adds strategic weight, though no formal Pakistani nuclear guarantee to Saudi Arabia has been publicly confirmed. Way Forward

- Deepen Minilaterals: Accelerate IMEC and I2U2 to strengthen ties with Saudi Arabia, UAE and other Gulf states.

- Use Iran as a Balancer: Strengthen Chabahar Port and International North-South Transport Corridor (INSTC) to preserve connectivity with Central Asia and Europe.

- Diversify Gulf Partnerships: Deepen defence, maritime-security and technology cooperation with UAE, Oman and Qatar; strengthen ties with Greece, Cyprus, Armenia and Israel.

- Maintain UAE Defence Autonomy: Expand the India-UAE Strategic Defence Partnership without a mutual-defence commitment to avoid automatic involvement in regional conflicts.

- Build Indigenous Capability: Accelerate AI, drones, counter-drone systems, electronic warfare, hypersonic weapons and advanced air defence under Atmanirbhar Bharat.

- Strengthen Indian Ocean Security: Use India's IORA chairmanship to promote transparency and inclusive, open regional security cooperation rather than bloc-based arrangements.

- Defence Forces Vision 2047: Pursue "autonomy through capability and power" by strengthening military, economic and technological capacity and treating West Asia as a strategic hub for energy, trade and diaspora interests. How could the Makkah Joint Defence Agreement affect India's strategic and diplomatic interests in the Gulf? Mains Question

A Climate Resilience Pathway Between India and China

Experts have highlighted that shared climate vulnerabilities could serve as a pragmatic, low-risk avenue for India-China climate

cooperation following El Niño-delayed monsoons and extreme flooding in Assam, Odisha, Shaanxi and Gansu.

- The April 2026 visit of China's Special Envoy for Climate Change to New Delhi reinforced climate resilience and disaster management as potential areas of bilateral engagement despite geopolitical tensions. Shared Climate Vulnerabilities of India and China
- The Urban "Concrete Trap" & Flooding: Rapid urbanisation has paved over wetlands and natural floodplains, causing drainage failures and urban flooding in places like Mumbai and Guangxi.
- The Third Pole (Himalayan Ecosystem) Risks: Accelerating glacial retreat in the shared Hindu Kush Himalaya (HKH) region increases risks of Glacial Lake Outburst Floods (GLOFs) and threatens transboundary rivers like Yarlung Tsangpo (Brahmaputra) and Sutlej.
- Inland Heatwaves vs. Coastal Cyclones: Both countries face prolonged heatwaves, flash floods, storm surges, extreme precipitation and rising sea levels affecting densely populated regions.
- Public Health and Economic Cascades: Climate disasters disrupt supply chains, agricultural productivity and public health, threatening developmental gains. Historical Precedent for India-China Climate Engagement
- Institutional Cooperation (1990s–2020): India and China adopted Joint Statements, Joint Declarations and MoUs on climate change and disaster management.
  - The 2015 Joint Climate Statement supported an equitable global climate agreement and cooperation in renewable energy, electric mobility, low-carbon urbanisation, climate adaptation, joint R&D, data sharing and disaster governance.
  - As founding members of the BASIC Group (Brazil, South Africa, India and China), both coordinated positions in global climate negotiations.
- Strategic Economic Dialogue (SED): Facilitated cooperation in sustainable urban planning, waste management, sewage treatment, water-use efficiency and capacity building.
- Sister City Agreements: Delhi–Beijing (2013), Mumbai–Shanghai (2014) and Chennai–Chongqing (2015) promoted collaboration in urban governance, environmental management and climate resilience. Challenges Constraining India-China Climate Cooperation
- Strategic Mistrust: Border tensions since the 2020 clashes disrupted climate cooperation and transboundary hydrological data sharing, especially on the Brahmaputra River.
- Economic Competition: China's dominance in solar manufacturing, batteries and critical minerals, along with India's Atmanirbhar Bharat strategy and USD 112.6 billion trade deficit (2025–26), limits green technology cooperation.
  - India has gradually eased restrictions on Chinese firms for selective economic cooperation.
- Regulatory Barriers: India's 2020 Press Note 3 restrictions and China's export controls on critical minerals and processing technologies constrain collaboration.
- Weak Implementation: Sister City initiatives saw limited progress due to diplomatic tensions and weak institutional partnerships.
- Carbon Market Cooperation: In 2026, China, Brazil and the EU became founding members of the Open Coalition for Carbon Markets; India was not a founding member.
- Divergent Climate Leadership: India has not joined China's BRI International Green Development Coalition, while China is not part of India's International Solar Alliance (ISA) and Global Biofuels Alliance (GBA). India's Major Bilateral Climate Partnerships Across the World
- Under the India–US Climate and Clean Energy Agenda 2030, cooperation exists in clean energy, climate finance, hydrogen, EVs and clean technology innovation.
- Through Green Growth Equity Fund (GGEF), India and UK mobilise investment in renewable energy, energy efficiency and EVs and lead GGI–OSOWOG.
- Japan–India Clean Energy Partnership (CEP) and Joint Crediting Mechanism (JCM) covers EVs, hydrogen, ammonia technologies, battery storage, energy efficiency and carbon credits.
- Through Green and Sustainable Development Partnership (GSDP) and International Climate Initiative (IKI), Germany supports renewable energy, climate-resilient infrastructure, biodiversity conservation and adaptation.
- India–Denmark Green Strategic Partnership (2020)
- India and France launched International Solar Alliance (ISA) at COP21 (2015).
- Through India–EU Clean Energy and Climate Partnership, cooperation covers clean energy transition, green finance, low-carbon development, carbon markets and climate resilience. Strategic Significance for India
- Bridging the Climate Finance Gap: Partnerships provide concessional loans, blended finance models and green bonds to support India's NDC goals.
- Critical Technology Transfer: Cooperation with countries like Denmark and Germany enables access to technologies in offshore wind, green hydrogen and battery storage.
- Geopolitical Leverage: Green alliances strengthen India's role as a responsible global climate leader and support Common but Differentiated Responsibilities (CBDR). Measures for India and China to Strengthen Cooperation on Climate Resilience
- Focusing on "Low-Politics" Entry Points: Separate disaster management cooperation from border disputes and begin with areas like sustainable agriculture, urban waste management and early warning systems.
- Synergizing Subnational Best Practices: Promote city-to- city cooperation.
  - India can adopt China's "Sponge Cities" model, while China can learn from India's community-led Heat Action Plans (Ahmedabad model).
- Leveraging Minilateral Platforms: Platforms like BRICS and ADB can provide neutral spaces for technical and financial cooperation.

- Institutionalizing Blended Climate Finance: Develop frameworks for blended finance and green municipal bonds to de-risk private investment and support Global South climate finance.
- Himalayan Hydrological Surveillance: Establish continuous, year-round joint glaciological monitoring of the HKH region to predict GLOFs and manage transboundary rivers. Examine the role of climate diplomacy in strengthening India's bilateral relations. How can climate resilience contribute to confidence-building between India and China despite geopolitical tensions? Mains Question

India's Trade Balancing Act: Navigating US, China and Strategic Autonomy

India eased FDI, anti-dumping and e-commerce norms to attract investment, strengthen manufacturing and boost exports while balancing ties with the US and China. Recalibration of India's Trade and Investment Policy

- The "China Plus One" Capital Constraint: Press Note 3 (2020) restricted Chinese equity but did not curb the trade deficit, which crossed USD 112 billion in FY25-26. India requires Chinese capital and intermediate goods to diversify supply chains.
- The PLI Competitiveness Paradox: Anti-dumping duties on Chinese APIs, electronic components and specialty chemicals raised input costs, weakening the competitiveness of PLI-supported products in Global Value Chains.
- Bureaucratic Friction in Capital Formation: Inter- ministerial screening under Press Note 3 delayed investments, including global venture capital funds with minor passive Chinese investors.
- Mitigating US Trade Coercion: Easing export-oriented e-commerce FDI and banning forced-labour imports aim to protect US market access and reduce proposed tariffs on Indian exports. Balancing Trade Liberalization with Strategic Interests in India
- "Small Yard, High Fence" Doctrine: The March 2026 FDI relaxation permits up to 10% beneficial ownership from land-bordering countries through the automatic route, while retaining scrutiny over controlling stakes and critical infrastructure.
- Prioritizing Domestic Value Addition (DVA): India favours conditional local manufacturing by Chinese firms to increase DVA and exports rather than relying only on imported intermediates.
- Selective Trade Defense Application: Anti-dumping duties are eased on essential industrial inputs but retained on finished goods. China-related imports formed nearly 72% of rejected duty recommendations between 2000 and Dec 2025.
- Multi-alignment in Digital Trade: Inventory-based e-commerce FDI is allowed only for exports, supporting global integration without opening domestic retail to foreign predatory pricing. Concerns Regarding India's Trade Strategy
- The "Trojan Horse" Dilemma (Assembly vs. Manufacturing): Cheap intermediate imports and Chinese joint ventures may deepen supply-chain dependence and reduce India to a low-margin assembly hub.
- Institutional Opacity and Erosion of DGTR: Unreasoned rejection of DGTR recommendations weakens institutional credibility, creates regulatory uncertainty and exposes domestic producers to subsidised dumping.
- Weaponisation of Bilateral Dependencies: Dependence on the US for export markets and China for intermediate goods leaves India vulnerable to sanctions, tariffs and supply disruptions.
- Ideological and Domestic Friction: Diluting WTO-compliant trade defense mechanisms (anti-dumping) may weaken Atmanirbhar Bharat and reduce investment, capacity utilisation and employment among affected domestic producers. Way Forward
- Enact a Statutory "Public Interest Test": Strengthen the Customs Tariff Act, 1975 to require transparent reasons for rejecting DGTR recommendations, balancing exporter gains with MSME protection.
- Transition to Value-Addition Linked Incentives (VALI): Link incentives to verified growth in Domestic Value Addition and mandate time-bound technology transfer in joint ventures with land-bordering countries.
- Strengthen Customs Rules of Origin: Use blockchain- enabled audits under Customs (Administration of Rules of Origin under Trade Agreements) Rules, 2020 (CAROTAR, 2020) to prevent tariff circumvention through third countries without genuine value addition.
- Leverage: Use the US–India TRUST Initiative and deepen semiconductor and deep-tech partnerships with Japan and South Korea to diversify supply chains. 'What introduces friction into the ties between India and the United States is that Washington is still unable to find for India a position in its global strategy, which would satisfy India's National self-esteem and ambitions'. Explain with suitable examples. (2019) Mains Question

US-Saudi Arabia Nuclear Deal

The US and Saudi Arabia signed a 30-year Civil Nuclear Cooperation Agreement under Section 123 of the US Atomic Energy Act, 1954, along with a Bilateral Nuclear Safeguards Agreement. The US linked its implementation to Saudi Arabia joining the Abraham Accords and normalising relations with Israel.

- Abraham Accords: US-brokered agreements signed in 2020 to normalise Israel's relations with Arab countries. Signatories: UAE, Bahrain and Morocco (2020); Sudan (2021). Strengthened India's ties with Israel and Gulf countries and supported the I2U2 Group—India, Israel, UAE and US—for cooperation in energy, food security, water, health, transport, space and emerging technologies.
- Civil Cooperation: Transfer of US nuclear materials, equipment, technology and expertise; US companies to.
- Fuel Supply: Saudi Arabia will initially import nuclear fuel.
- Enrichment: A two-year feasibility study will assess uranium enrichment in Saudi Arabia under a possible "black box"

arrangement, keeping sensitive enrichment technology under US control.

- Safeguards: Unlike the US–UAE Civil Nuclear Agreement, 2009, Saudi Arabia is not required to permanently renounce uranium enrichment or spent fuel reprocessing (the so-called 'Gold Standard').
  - Adoption of the IAEA Additional Protocol is not mandatory, limiting intrusive inspections.
  - Concern: The deal may weaken global non-proliferation norms by legitimising dual-use nuclear technologies. Strategic Significance
- Saudi Arabia: Supports Vision 2030, energy diversification, rising electricity demand, AI data centres, industries and mega projects. Uranium reserves, Iran's nuclear programme and regional instability also drive its search for energy security and strategic deterrence.
- United States: Secures contracts for US nuclear companies and counters Chinese and Russian influence in West Asia.
- Iran: Iran has advanced centrifuges and uranium enriched up to 60%. Saudi enrichment rights may harden Iran's position on retaining enrichment, complicating nuclear negotiations and regional non-proliferation. Implications for India
- Energy Security: Saudi–Iran rivalry may intensify and threaten Strait of Hormuz oil supplies and raise India's import bill; nearly 40% of India's crude imports come from West Asia.
- Tests India's multi-alignment policy as it has strategic partnerships with Saudi Arabia, Iran, Israel and the US.
- Regional instability and delayed Saudi–Israel normalisation may slow the India–Middle East–Europe Economic Corridor.
- Economic Opportunities: Indian engineering and infrastructure firms may participate in non-sensitive Saudi nuclear infrastructure projects.

President's State Visit to Romania

President Droupadi Murmu visited Romania during her State Visits to Moldova, North Macedonia and Romania, marking the first State Visit by an Indian President to Romania in nearly three decades.

- India and Romania reaffirmed their 70-year partnership and agreed to enhance cooperation in trade, investment and resilient supply chains, with a target to double bilateral trade within three years.
  - India has a trade surplus with Romania. In FY 2024–25, Romania accounted for 0.24% of India's exports and was India's 56th largest export destination.
  - Major Indian exports: petroleum products, engineering goods and pharmaceuticals. Major imports: machinery, vegetable oils and iron & steel.
- Importance of India–EU FTA: Romania's role as an EU partner was highlighted, with the India–EU FTA expected to create opportunities for industries and skilled professionals.
- Strengthening Education & Cultural Ties: Three agreements were signed on education, culture and people-to-people exchanges.
- Cooperation: Both countries agreed to expand joint R&D under the Programme of Cooperation in Science and Technology.
- Promotion of Indian Culture: An Indian Studies Chair will be established at the University of Bucharest with support from ICCR.
- Capacity Building: India will double training opportunities for Romania under the ITEC Programme.
- India–Romania Year of Innovation: Both countries will celebrate 2028 as the "India–Romania Year of Innovation" to mark the 80th anniversary of diplomatic relations. Romania
- Location: A South-Eastern European country bordered by Ukraine, Moldova, Black Sea, Bulgaria, Serbia and Hungary. Capital: Bucharest.
- Political Profile: A democratic republic and member of EU and NATO.
- Physical Features: Characterised by one-third mountains, one-third hills and one-third plains.
  - Major features: Carpathian Mountains, Transylvanian Basin, Danube Delta (UNESCO World Heritage Site), and Chernozem plains.
- Economy: A high-income economy and among the fastest-growing economies in the EU.
- Strategic Significance: Located on the Black Sea, Romania hosts the Port of Constanța, a key Europe–Asia trade gateway.
  - It is an important partner for India in IT, pharmaceuticals, automobiles, renewable energy and strengthening India–EU economic cooperation.

Rome Declaration for an Unarmed and Disarming Peace

The Rome Declaration for an Unarmed and Disarming Peace, signed in July 2026 by Nobel laureates, AI scientists, religious leaders and global luminaries, raised concerns over the "convergent peril" of delegating moral and ethical decisions to Artificial Intelligence (AI) systems. Rome Declaration for an Unarmed and Disarming Peace

- About: A strategic and moral appeal calling for an international treaty prohibiting autonomous AI systems from accessing or making nuclear launch decisions, emphasising that human ethics, accountability and judgment must not be outsourced to AI.
- Current Status: A normative "nudge" rather than a binding legal framework due to lack of global consensus on autonomous AI regulation in warfare.
- Principles of the Rome Declaration:
  - Disarming the Next Arms Race: Prevent an AI-driven military and nuclear arms race.
  - Responsible Development: Ensure transparent and ethical AI development.
  - Responsible Use of AI: Restrict autonomous AI decisions in high-risk military domains.
  - Responsible Governance: Promote international oversight, regulation and accountability.
  - Responsible Leadership: Prioritise ethics over technological competition.

- Nuclear Disarmament: Renew commitment towards complete, irreversible and verifiable elimination of nuclear weapons.

- Ethical & Operational Mandates:
  - Mandatory Meaningful Human Control: AI must not make final decisions on nuclear weapon deployment.
  - The 'Digital Commons' Model: Democratise data access for independent analysis of AI risks.
  - Responsible Development: Ensure AI systems remain transparent, auditable and controllable.
  - Internal Arsenal Vulnerability Audits: Nuclear states must assess AI-driven cyber threats to command-and- control systems.
  - Time-Bound, Verifiable Disarmament: Renew negotiations for complete elimination of nuclear arsenals. The Need for the Declaration

- Compression of Decision-Making Windows: AI-based military systems reduce decision time from hours to seconds, removing the human hesitation and moral pause that prevented disasters like the 1962 Cuban Missile Crisis and 1983 Soviet false alarm.

- Algorithmic Failure Modes: AI systems face risks of hallucinations and data poisoning, which may trigger false threat perceptions and catastrophic retaliation.

- Collapse of Global Security Infrastructure: Weakening arms control treaties like Open Skies and New START creates incentives for states to automate defence systems.

- Real-World Triggers (The Iran Scenario): In sensitive environments like the Iranian nuclear programme, digital intrusions or attacks could be misinterpreted by automated systems, escalating conflicts. "Convergent Perils" in AI

- Convergent Peril: A situation where multiple risks interact and amplify each other, creating systemic threats.
  - In AI, it represents the intersection of algorithmic bias, loss of accountability, hyper-automation and ethical abdication, creating a civilizational crisis. Global AI Ethics Landscape

- EU Artificial Intelligence Act, 2024

- Bletchley Park Declaration (2023)

- UNESCO Recommendation on the Ethics of AI (2021)

- Global Partnership on Artificial Intelligence (GPAI) India's AI Governance Framework

- NITI Aayog's National Strategy for AI (2018) – "AI for All"

- IndiaAI Mission (2024): Includes a "Safe and Trusted AI" pillar for ethical AI deployment.

- India AI Governance Guidelines (MeitY)

Bay of Bengal as India's SHANTI Anchor

India proposed SHANTI—Securing Holistic Advancement through Norms, Trust and Integrity—while announcing its candidature for the UNSC 2028–29 term.

- The Bay of Bengal serves as the ideal region to operationalise it before expanding it across the wider Indo-Pacific. SHANTI Framework

- Builds on SAGAR, 2015 and MAHASAGAR, 2025.

- Provides the operational framework for maritime security by promoting Norms, Trust, and Integrity.

- Shifts the focus from competition to demand-driven cooperation, influence to institution-building, and crisis management to long-term resilience.

- Seeks to make India a preferred security partner and first responder in the Indo-Pacific.

- Supports inclusive and rules-based maritime governance, strengthens BIMSTEC, enhances maritime resilience and advances the Blue Economy.

- Cooperative Maritime Commons: Unlike the Western Indian Ocean which is plagued by intense militarization, piracy, chokepoint blockades (e.g., Red Sea/Houthis), and direct great-power confrontation.
  - The Bay of Bengal is relatively stable, with strong historical, cultural and economic ties among littoral states without the baggage of active, insurmountable maritime border disputes.
  - This makes it highly conducive for establishing a trust- based, rules-bound governance architecture before attempting to apply it to more volatile regions.

- Existing Cooperation: India engages with littoral states through the BIMSTEC Master Plan, Colombo Security Conclave, Lines of Credit, and bilateral logistics, defence and HADR cooperation with Bangladesh, Sri Lanka, Myanmar and Thailand.

- Malacca Factor: The Bay links South and Southeast Asia, advances Act East Policy and SAGAR vision, and guards the western approach to the Strait of Malacca.
  - China's push into the Bay through Myanmar's Kyaukphyu port to overcome its "Malacca Dilemma" makes rapid SHANTI implementation vital for preserving a free, open and multipolar region.

- Shared Non-Traditional Threats: Cyclones, sea-level rise, coastal erosion, climate migration, IUU fishing, drug trafficking (maritime routes overlap with the "Golden Triangle") and gun-running require coordinated HADR, climate resilience and intelligence-sharing.

- Normative Support to BIMSTEC: SHANTI can embed Norms, Trust and Integrity into existing mechanisms, strengthening maritime governance, the Blue Economy and Maritime Domain Awareness without creating new institutions.

- Regional Stewardship: SHANTI enables India to act as a non-coercive security partner and first responder, avoiding the "big brother" image and offering a model for wider Indo-Pacific governance. The US's evolving Indo-Pacific approach and military actions against Iran, which disrupted regional sea lanes, highlight the urgency for India to assert itself and strengthen its claim as the region's preferred security provider. E n v i r o n m e n t & E c

ENVIRONMENT & ECOLOGY

World Elephant Day 2026

India reaffirmed its commitment to elephant conservation during the national World Elephant Day 2026 celebrations in Visakhapatnam. Facts about World Elephant Day

- Observed: Annually on 12 August to raise awareness about conserving Asian and African elephants.
- Origin: Established on 12 August 2012 by Patricia Sims of Canada and the Elephant Reintroduction Foundation of Thailand.
- Theme 2026: "Bringing the world together to help elephants."
- Objective: Highlight threats such as habitat loss and fragmentation, poaching and illegal ivory trade, human-elephant conflict, loss of migration routes and mistreatment in captivity, while promoting conservation and coexistence. SC ruled that no State can block elephant corridors and directed the Central Government to conduct a nationwide survey to ensure elephants' right of passage through traditional corridors across State borders.
- Elephant corridors are not State-specific as herds naturally cross State boundaries; conservation requires inter-State coordination.
  - Examples: Nepal → West Bengal → Jharkhand; Yamuna Nagar, Haryana → Uttarakhand → Himachal Pradesh. Ban on Barbaric Practices
- SC ordered strict implementation of its 2018 directions to remove spikes and stop using fireballs to drive elephants.
- Elephants are Schedule I animals under the Wildlife (Protection) Act, 1972, receiving the highest statutory protection.
- Asian Elephant (Elephas maximus): Endangered, IUCN Red List; habitat and migratory-corridor protection is crucial for survival. Key Initiatives Announced on World Elephant Day 2026
- Regional Action Plan for Southern India: ₹500-crore plan covering Karnataka, Kerala, Andhra Pradesh and Tamil Nadu for corridor conservation, habitat restoration, early warning, conflict mitigation and community participation.
- Nilgiri Plan: Model Elephant Conservation Plan for the Nilgiri Elephant Reserve to guide scientific management.
- Captive Elephant Welfare: Publication "Captive Elephant Husbandry: Science, Welfare and Practice" released to strengthen captive-care standards.
- Gaj Gaurav Awards 2026: Recognised exemplary contributions to elephant conservation and management. o l o g y
- "30 Giant Steps": Documents 30 major Project Elephant milestones and initiatives during 2020–2026.
- HEC Research: Phase II of the human-elephant conflict study launched across Kerala, Karnataka, Tamil Nadu, Odisha and West Bengal. Steps India has Taken to Strengthen Elephant Conservation Project Elephant
- About: The Ministry of Environment, Forest and Climate Change implements Project Elephant, providing financial and technical support for habitat protection, captive- elephant conservation, human-elephant conflict mitigation, AI-enabled monitoring, radio-collaring, genetic databases and early-warning systems.
- DNA-Based Census: SAIEE 2021–25 used India's first DNA-based synchronised elephant census, analysing dung samples through genetic fingerprinting alongside block counts and line-transect surveys. Elephant Corridor Network
- Purpose: Corridors connect fragmented habitats, maintain movement and genetic diversity, and reduce human- elephant conflict.
- National Network: 150 corridors across 14 elephant-range States.
- Regional Distribution: East-Central 52, North-East 48, Southern 32, Northern 18; West Bengal has 26, the highest.
- Connectivity: 19 inter-State and 6 India-Nepal transboundary corridors.
- Use Status: Increased use in 59 corridors (40%), stable in 29 (19%), declining in 29 (19%), and 15 impaired.
- Measures: Scientific monitoring, boundary delineation and integration into State working and management plans. Growing the Reserve Network
- Elephant Reserves cover around 80,777 km² across 14 major elephant-range States.
- Since 2014, about 8,610 km² additional area has been brought under the reserve network.
- Expansion strengthens habitat connectivity, scientific management and long-term landscape-level conservation. Management Effectiveness Evaluation
- The Management Effectiveness Evaluation (MEE) framework for Elephant Reserves was launched in 2023 using measurable indicators.
  - It was piloted in Shivalik, Kaziranga–Karbi Anglong, Mayurbhanj and Nilgiri Elephant Reserves and is being expanded nationally with CAMPA funding.
  - The framework links conservation actions to measurable outcomes and supports adaptive management.
- Regional Action Plans for all elephant-bearing regions provide a common framework for inter-State coordination on habitat connectivity, conflict mitigation and landscape management. Railway Collision Mitigation
- Joint surveys covered 127 sensitive railway stretches (3,452.4 km).
- Specific interventions recommended on 77 stretches across 14 States (1,965.2 km).
- Proposed 705 wildlife-friendly structures include underpasses, overpasses, ramps, level crossings and bridge modifications.
- Monitoring uses optical-fibre intrusion detection, seismic sensors, thermal cameras and AI-enabled Distributed Acoustic Sensing for real-time alerts.
- Every collision is jointly investigated with the State Forest Department.
- Train-hit elephant deaths declined from 26 in 2013 to 12 in 2024, a reduction of more than 50%. Genetic Monitoring of Captive Elephants
- Genetic identification, digital records and regulated transfers are being used to curb illegal trade and movement of captive elephants.

- Under the Wildlife (Protection) Act, 1972, such cases are referred to State Chief Wildlife Wardens.
- Gajah Suchana: National genetic database containing DNA profiles, morphological characteristics and ownership details of registered captive elephants; supports identity verification and forensic evidence.
- Captive Elephant (Transfer or Transport) Rules, 2024: Regulate transfer and transport; a High-Powered Committee constituted pursuant to the Supreme Court's order examines inter-State transfers. Community Compensation
- Financial assistance under Project Tiger and Elephant and Development of Wildlife Habitats supports people affected by human-wildlife conflict.
- Human casualty compensation: ₹10 lakh for death/ permanent incapacitation, ₹2 lakh for grievous injury and treatment costs up to ₹25,000 for minor injuries.
- Crop and property losses are compensated according to State/UT norms.
- The Human-Wildlife Conflict Advisory recommends hotspot mapping, rapid-response teams, review committees and faster compensation.
- Elephant-specific conflict-mitigation guidelines issued in 2023 aim to improve coordination and management.

Thinning-Induced Deceleration of Zanskar Glaciers

A study in The Cryosphere analysing 12 Zanskar Basin glaciers (1992–2023) found that glaciers are thinning and slowing due to climate change, threatening long-term water availability in the Zanskar and the wider Upper Indus Basin. Key Findings

- Glacier Slowdown: Glaciers in the Zanskar region have slowed down by an average of 2.4 m/year per decade over the last 30 years.
- Accelerated Thinning: Surface thinning increased from about 0.22 m/year (2000–05) to 0.57 m/year (2015–20).
- Mechanism: Global Warming → glacier mass loss → thinner ice → lower driving stress → reduced ability to transport ice from accumulation zones to lower elevations.
- Non-Uniform Response: Glacier behaviour varies with geometry, debris cover and terminus/snout conditions. Impact on Upper Indus Water Security
- Meltwater Dependence: Glacier melt sustains Indus river flows during dry summer months.
- Peak Water Phenomenon: Accelerated melting may initially increase runoff, but after substantial ice loss, meltwater contribution declines sharply.
  - Earlier projection cited by the study: peak water around 2028.
- Long-Term Risks: Declining glacier storage threatens water security, agriculture, hydropower and downstream ecosystems.
- GLOF Risk: Retreating glaciers can create moraine-dammed lakes; dam failure may cause catastrophic Glacial Lake Outburst Floods (GLOFs).
  - Example: South Lhonak, Sikkim (2023). Zanskar Valley Aspect Detail Location Ladakh; northern flank of the Great Himalayan Range High-altitude semi-desert; cold and dry due to Climate Himalayan rain shadow Area About 5,000 sq km Culture Preserves traditional Ladakhi and Tibetan practices Padum, administrative headquarters and tourism/ Main Town trekking centre Key Geographical Features
- Penzi La Pass: About 4,400 m; highest point on the Kargil-Zanskar road, broad tableland with high-altitude lakes; gateway linking Zanskar with Suru Valley and Kargil.
  - Heavy snowfall historically cuts off the valley for roughly 8 months annually.
- Chadar Trek: Winter route over the frozen Zanskar River, historically used when mountain passes were blocked.
- Drang-Drung Glacier: Visible from Penzi La; among Ladakh's largest glaciers outside the Karakoram and an important freshwater source.
- Doda (Stod) River: Originates from Drang-Drung Glacier near Pensi La and flows southeast towards Padum.
- Zanskar River: Formed by the Doda and Lungnak rivers near Padum; flows northeast through a deep gorge before joining the Indus at Nimmu near Leh. Cultural Significance
- Microcosm of Tibet: Isolation helped preserve traditional Tibetan socio-cultural practices.
- Social Practices: Polyandry survives in some remote areas.
- Padum: Also known for nearby Gyalwarina rock-carved statues. Major Monasteries Key Fact Near Padum; built on level ground; associated Sani Gonpa with Kanishka through the Kanishka Stupa Largest monastery in Zanskar; founded in 14th Karsha Gompa century; eight temples, scrolls and Thangkas Cave monastery in Lungnak Valley; founded by Phugtal Gompa Phagspa Sherab Zangpo in 11th century Founded by Tibetan Yogi Marpa; also called Stongde Monastery Marpa Ling 17th-century monastery in Lungnak Valley; Burdan Monastery prominent seat of Drogpa order Zangkul Gompa Meditation retreat of Indian Yogi Naropa Measures for Himalayan Cryosphere Resilience
- Cryosphere Monitoring: Expand high-altitude weather stations and measurements of ice thickness, mass balance and subglacial hydrology.
- Reduce Black Carbon: Regulate brick kilns and diesel transport and promote clean cooking fuels.
- Glacier-to-Basin Management: Adopt Integrated River Basin Management linking glacier melt, snow, groundwater, hydropower, agriculture and downstream demand.
- GLOF Risk Reduction: Map vulnerable lakes, deploy Early Warning Systems and use measures such as controlled siphoning.
- Climate Adaptation: Promote climate-resilient agriculture and local innovations such as Ladakh's Ice Stupas for storing winter water for spring use. The Himalayan cryosphere is both an ecological regulator and a strategic water reservoir. Examine the implications of its rapid transformation for the Indian subcontinent. Mains Question

Agasthyamalai Evictions and the Forest Rights Act, 2006

The Forest Department issued eviction notices to thousands of households in the Agasthyamalai Biosphere Reserve (ABR),

particularly in Tamil Nadu's Theni district, following a SC directive based on Central Empowered Committee (CEC) findings.

- The controversy concerns whether the eviction process adequately protects rights guaranteed under FRA, 2006. Background of the Eviction Orders
- Survey Direction: In March 2025, the Court asked the CEC to survey the Agasthyamalai landscape for non-forestry activities violating the Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972.
- Eviction & Restoration: Based on CEC findings, the Court ordered removal of non-forestry activities, commercial infrastructure and encroachments from protected areas such as Kalakkad-Mundanthurai and Srivilliputhur- Megamalai Tiger Reserves.
  - Tamil Nadu was directed to prepare a time-bound, division-wise eviction plan, including rehabilitation "wherever applicable" and ecological restoration.
- Core Conflict: Conservation and ecological restoration measures are criticised for allegedly bypassing FRA- mandated safeguards against arbitrary eviction. Key Concerns Regarding Eviction
- Statutory Verification Bypassed: FRA requires forest-right claims to be verified through the Gram Sabha and multi-departmental committees; critics argue occupants are being treated as encroachers without completing this process.
- Bar on Eviction: No forest dweller can be evicted until recognition and verification of rights are completed.
  - Wrongful dispossession of SC/ST persons or interference with forest rights may constitute an offence under the SC/ST (Prevention of Atrocities) Act, 1989.
- Tenure Misinterpretation: Other Traditional Forest Dwellers (OTFDs) are often required to prove 75 years of occupation of the exact land claimed before 2005, although the FRA does not impose this rigid requirement.
  - FRA does not prohibit all commercial activities; "bona fide livelihood needs" include sale of surplus produce and grazing.
- Nodal Agency Concern: Tribal-rights advocates have criticised the limited intervention of State tribal-welfare authorities. Forest Rights Act, 2006 Aspect Detail Forest Dwelling Scheduled Tribes (FDST) and Beneficiaries Other Traditional Forest Dwellers (OTFD) Residence in forest land for bona fide livelihood Eligibility needs for at least 3 generations/75 years before 13 Dec 2005 Recognises forest rights while strengthening Purpose conservation and livelihood/food security Initiates determination of Individual Forest Rights Gram Sabha (IFR) and Community Forest Rights (CFR) Ownership over actually cultivated land, up to 4 Title Rights hectares; no new land granted Use Rights Minor Forest Produce, grazing areas, etc. Rehabilitation after illegal eviction/forced Relief & displacement and access to basic amenities, Development Rights subject to forest-protection restrictions Right to protect, regenerate, conserve or Forest Management manage traditionally protected community forest Rights resources Agasthyamalai Biosphere Reserve
- Geographical Spread: About 3,500 sq km, at the southern end of the Western Ghats, spanning Tamil Nadu and Kerala.
- Tamil Nadu Protected Areas: Kalakad-Mundanthurai Tiger Reserve, Srivilliputhur-Megamalai Tiger Reserve, Nellai Wildlife Sanctuary and Kanyakumari Wildlife Sanctuary.
- Kerala Protected Areas: Peppara and Neyyar Wildlife Sanctuaries.
  - As per the CEC report submitted to SC, the Agasthyamalai Ecological Landscape includes the Periyar Tiger Reserve in Kerala.
- Communities: Home to indigenous communities including the Kani tribe, dependent on forests for livelihood and culture.
- UNESCO Status: Included in the UNESCO World Network of Biosphere Reserves in 2016.

World Lion Day

On World Lion Day 2026, the Prime Minister highlighted India's Asiatic lion recovery: population rose from 523 (2015) to 891 (2025), supported by scientific conservation, habitat expansion and community participation.

- World Lion Day: Observance on 10 August annually; established in 2013 by conservationists Dereck and Beverly Joubert to raise awareness about lion conservation and declining wild populations. They are co-founders of the Big Cats Initiative with National Geographic. Significance of Asiatic Lion Conservation in India
- Historical Decline: Once widely distributed across Asia and the Indian subcontinent; by late 1890s, fewer than 50 lions survived in Gir forests of Gujarat.
  - Junagadh State played an early protection role; Gir Wildlife Sanctuary established in 1965; conservation expanded to Gir NP, Girnar, Mitiyala, Pania and Barda.
- Recovery: Population increased from 523 (2015) to 891 (2025), supported by legal protection, habitat expansion, prey availability and community participation.
- Project Lion: Launched 15 August 2020; landscape-level approach using habitat improvement, disease monitoring, scientific tracking, radio-collaring, camera traps, prey management and conflict mitigation; Gujarat Forest Department leads implementation and censuses.
- Landscape Expansion: Conservation extends beyond protected areas to forests, grasslands, coastal and multi- use landscapes. Distribution range expanded ~59% during 2015-25 to ~35,000 sq km across 11 Saurashtra districts; Barda, without lions since 1879, recorded 17 lions by 2025.
- Community-Based Conservation: Gir Gram Samiti (2019) links forest officials and villagers, supported by honorary wildlife wardens, community leaders, eco-guides and eco- development committees.
- Technology: GPS tracking monitors lions/vehicles; SIMBA enables AI-based individual identification; radio-collaring and GIS-based real-time monitoring support surveillance, analysis and management. Key Facts About Asiatic Lion Parameter Key Fact Scientific name Panthera leo persica Historical range West Asia to eastern India India's only wild population: Saurashtra, Gujarat - Greater Gir Landscape incl. Gir, Girnar, Pania, Current core habitat Mitiyala, Barda, plus riverine, coastal and multi-use landscapes. Natural migration to Barda Wildlife Sanctuary

near "Second Home" Porbandar due to carrying-capacity limits in Gir. Dry deciduous forests, scrublands, grasslands and Habitat open landscapes. Males generally solitary/small coalitions; females Social structure form prides of related females and cubs. Mainly nocturnal/crepuscular; carnivorous with Activity & Diet notable reliance on scavenging in Gir. Coexists with Indian leopards and striped hyenas Niche partitioning through differences in habitat use, prey selection and activity. Maldhari pastoral community has historically Human coexistence coexisted with lions in Gir. Major Threats

- Genetic Bottleneck: Small founder population -> low genetic diversity and inbreeding -> higher disease vulnerability.
- Disease Risk: Past Canine Distemper Virus (CDV) and Babesiosis outbreaks caused lion mortalities.
- Habitat Saturation: Population pressure pushes lions into human-dominated areas, increasing conflict and livestock depredation.
- Infrastructure: Open wells, railway lines and roads in Greater Gir pose accidental-death risks.

SC Extends 10 km Mining Buffer Rule to Wetland Reserves Across India

SC clarified that its mining restrictions near the Asan Wetland Conservation Reserve may also apply to other wetland and community conservation reserves across India.

- Asan Mining Restriction: Under the Feb 2024 interim order, no mining can occur within 10 km of the Asan reserve without prior permission from the Standing Committee of the National Board for Wildlife and/or the Environment Ministry.
- Himachal Pradesh's Plea: The restriction should not apply because the reserve lies in Uttarakhand and wetland reserves do not necessarily require external buffer zones.
- SC Direction: The Standing Committee or Environment Ministry must determine whether the wetland extends into Himachal Pradesh. If it does, the 2024 directions apply; otherwise, mining proposals will be decided under the applicable legal framework.
- Asan Wetland: Located at the confluence of the Asan and Yamuna rivers in Uttarakhand; supports migratory waterbirds and aquatic biodiversity; designated a Ramsar site in 2020. Key Legal Position
- No Fixed Ramsar Buffer: Neither the Ramsar Convention nor the Wetlands (Conservation and Management) Rules, 2017 prescribes a fixed buffer or expressly prohibits mining within a specified distance.
- Wetlands Rules, 2017: Introduced a decentralised system led by State Wetland Authorities, removed the detailed prohibited-activities list in the 2010 Rules and gave States greater responsibility; their constitutional validity is under challenge before SC.
- Comparison with Other Protected Areas: Mining is prohibited within national parks and wildlife sanctuaries and, under SC directions, within 1 km of their boundaries unless a larger notified Eco-Sensitive Zone applies.
  - Mining on forest land requires prior Central approval under the Forest Conservation Act, 1980 and is generally subject to environmental clearance under the EIA Notification, 2006.

India Launches Clouded Leopard Conservation Action Plan (CAP)

On International Clouded Leopard Day (4th Aug), India reaffirmed conservation of the species through the newly launched CAP.

- The day was established in 2018 by The Aspinall Foundation and is an advocacy observance, not a UN- or treaty-based observance. Key Features of the Action Plan
- Institutional Origin: Developed under the Govt. of India–GEF–UNDP initiative and released at the 91st Standing Committee of the National Board for Wild Life meeting in July 2026 at Coimbatore.
- Core Focus: Habitat protection, scientific monitoring, landscape connectivity and community participation.
- Priority Landscapes: Identifies 14 conservation landscapes across Northeast India for habitat restoration and wildlife corridors.
- Scientific Monitoring: Uses camera traps, occupancy surveys, genetics and environmental DNA (eDNA).
- Protection Technology: Strengthens anti-poaching through the M-STrIPES smart application.
- Inclusive Approach: Promotes climate-resilient conservation, sustainable livelihoods and transboundary cooperation.
- Species Recovery Programme: The Clouded Leopard has been included under the Integrated Development of Wildlife Habitats (IDWH) scheme. Clouded Leopard: Key Facts Aspect Fact Mainland leopard: Neofelis nebulosa; Sunda clouded Scientific Name leopard (Neofelis diardi) is a separate species of Sumatra and Borneo. Himalayan foothills, Southeast Asia and southern China; in India mainly Northeast evergreen forests, Range from mangroves to Himalayan forests up to about 6,000–9,000 feet. Smallest member of Pantherinae subfamily; weighs Size 11–20 kg. Largest canines in proportion to skull/body size among Special Trait living cats (similar in size to tiger's). Vocalisation Hyoid bone allows purring but prevents roaring. More nocturnal and arboreal where tigers/common Behaviour leopards occur; more daytime activity where larger competitors are absent.
- Conservation Status and Important Locations
  - IUCN: Vulnerable.
  - CITES: Appendix I.
  - Wildlife (Protection) Act, 1972: Schedule I.
  - State Animal: Meghalaya.
- Dedicated Park: Clouded Leopard National Park in Tripura, within Sepahijala Wildlife Sanctuary—India's first dedicated wildlife park for the species.
- Other Key Sites: Manas Tiger Reserve (Assam), Dampa Tiger Reserve (Mizoram) and Pakke Tiger Reserve (Arunachal Pradesh).

Ken-Betwa River Linking Project

Tribal communities in MP protested against the Ken- Betwa River Linking Project over concerns related to displacement,

rehabilitation, compensation and environmental impacts. Ken-Betwa Link Project

- About: The Ken-Betwa River Linking Project is India's first river-linking project and the first of 30 links proposed under the National Perspective Plan, 1980.
- Implementing body: Ken-Betwa Link Project Authority, a Special Purpose Vehicle.
- Objective: Transfer water from the Ken River in MP to the Betwa River in UP. Both are tributaries of the Yamuna. Phase Major Components Daudhan Dam, low- and high-level tunnels, Ken-Betwa Phase I Link Canal and powerhouses Lower Orr Dam, Bina Complex Multipurpose Project Phase II and Kotha Barrage
- Power generation: 103 MW hydropower and 27 MW solar power.
- Significance: Seeks to improve drinking-water supply, irrigation and regional development in drought-prone Bundelkhand, while reducing distress migration.
- Environmental and Rehabilitation Concerns:
  - The Daudhan reservoir may submerge about 4,141 hectares of the core area and 1,314 hectares of the buffer area of the Panna Tiger Reserve.
  - Concerns include displacement, compensation, ecological damage and inadequate rehabilitation.
  - MP government approved an additional ₹300 crore for rehabilitation under the Majhgaon and Runjh irrigation projects.
  - A fresh survey identified around 750 additional families for inclusion in rehabilitation plans.

SC Verdict on Ex Post Facto Environmental Clearances

SC has quashed the Centre's 2021 Office Memorandum on ex post facto Environmental Clearances (ECs), reaffirming that prior ECs under the Environmental Impact Assessment (EIA) Notification, 2006 is mandatory.

- Retrospective environmental regularisation must be granted only through a statutory notification under the Environment (Protection) Act, 1986, not an administrative order, as such orders cannot create a perpetual, parallel amnesty regime.
  - The 2021 Office Memorandum promoted a "pollute and then pay" approach, failing the tests of proportionality and reasonable classification, thereby violating Article 14 (Right to Equality) and Article 21 (Right to Life and a Clean Environment).
  - ECs already granted under the 2017 Notification and 2021 OM remain valid unless individually challenged. Any future amnesties require a valid statutory notification under Section 3 of the Environment (Protection) Act, 1986.
- Supervening Public Interest: Retrospective clearances are not entirely barred but must be restricted to a "narrow, time-bound, reasoned, and supervised window" applicable only to projects of immense public utility (e.g., hospitals, airports, strategic infrastructure) under Section 3 of the Environment (Protection) Act, 1986.
- Ex Post Facto EC: Refers to retrospective environmental clearance granted to projects that started without prior approval.
- Shift in Environmental Jurisprudence: The judgment marks a nuanced transition from an absolutist application of the precautionary principle to balancing it with the polluter pays principle and sustainable development, acknowledging the heavy socioeconomic and environmental costs of demolishing massive, integrated public infrastructure.
- Mandate of the 2006 EIA Notification: The overarching legal principle remains that "prior environmental clearance" is mandatory before the commencement of construction or operations to evaluate ecological impacts, hear public objections, and prescribe safeguards.

Cloudbursts in India

IMD clarified that the Upper Assam floods were caused by prolonged heavy rainfall, not cloudbursts in Assam or Nagaland. Cloudburst

- Cloudburst: IMD defines a cloudburst as rainfall of 100 mm or more within one hour over an area of about 20–30 sq. km.
  - It is a highly localised and rare event, more intense than ordinary heavy monsoon rainfall. Such rainfall can trigger flash floods, landslides and debris flows.
  - Some scientists use the term "mini-cloudburst" for rainfall of about 50 mm in one hour, which may also cause severe damage. Cloudburst Heavy Rainfall ≥ 100 mm rainfall in one hour High rainfall spread over a larger over 20–30 sq. km area and longer duration Highly localized Regional or widespread Causes flash floods within Generally causes riverine or urban minutes flooding Rare event Common during monsoon
- Mechanism of Formation: Moist air is forced upward by mountain slopes through orographic lifting.
  - Rapid cooling and condensation form tall cumulonimbus clouds, sometimes extending up to 15 km vertically.
  - Strong updrafts hold water droplets inside the cloud.
  - When the droplets become too heavy or the updraft weakens, a large volume of rain falls suddenly over a small area.
- Geographical Susceptibility in India: IMD recorded about 30 cloudburst incidents between 1970 and 2016. Their frequency may rise as warmer air holds more moisture. Region Reason Topography (orographic effect) makes these Himalayan states and regions highly prone during southwest Northeast India monsoon Elevated relief obstructs moisture-laden Western Ghats monsoon winds
- Forecasting Challenges:
  - Hyper-localised nature: Cloudbursts affect only 20–30 sq. km, often below the resolution of numerical weather models.
  - Rapid formation: They develop within a few hours, providing very limited warning time.
  - Radar limitations: Mountainous terrain can block Doppler Weather Radar (DWR) signals.
  - Sparse observation network: Remote Himalayan regions have limited Automatic Weather Stations (AWS) and rain gauges.
  - Data gaps: Many observatories record rainfall at 3-hour or 24-hour intervals, whereas IMD's cloudburst threshold is 100 mm in one hour.

- High computational requirement: Hyperlocal forecasting needs high-resolution models and advanced computing capacity.

- India's Initiatives to Address Cloudbursts:

  - Nowcasting: IMD issues short-duration forecasts and frequent alerts for localised extreme weather.

  - Mission Mausam: India expanded its DWR network from 14 in 2014 to 50, covering over 87% of the country; 50 more radars are planned. AI is being integrated to improve hyperlocal forecasting and prediction of extreme weather events. Misuse of the Term 'Cloudburst' The term cloudburst is often used for any intense rainfall, even when the IMD threshold of 100 mm rainfall in one hour over 20–30 sq. km is not met.

- Such misuse can shift attention from governance failures, including poor drainage, unplanned construction, deforestation and weak early-warning systems.

- IMD uses a scientific, rainfall-based definition, while State Disaster Management Authorities (SDMAs) may rely on field observations due to inadequate real-time monitoring.

- This difference leads to inconsistent reporting, damage assessment and accountability. Event Assessment Cloudburst claims were disputed; experts 2022 Telangana pointed to issues linked with the Kaleshwaram floods irrigation project. Rainfall was below the cloudburst threshold; 2025 Dharali floods, riverbed construction, deforestation and Uttarakhand poor drainage were cited. 2026 Upper Assam IMD attributed the floods to prolonged heavy floods rainfall, not cloudbursts.

Western Ghats Ecologically Sensitive Area: 7th Draft Notification

The MoEFCC has reissued the draft notification (7th) proposing an Eco-Sensitive Area across the Western Ghats. Highlights of the 7th Draft Notification on Western Ghats ESZ

- Geographical Spread:

  - Proposes an Eco-Sensitive Area (ESA) of 56,825.7 sq. km across Karnataka (highest at 20,668 sq. km), Maharashtra, Kerala, Tamil Nadu, Goa and Gujarat (lowest at 449 sq. km).

- Prohibited Activities: Bans commercial mining, quarrying, sand mining, new thermal power plants, red-category industries and large construction projects.

- Regulated and Exempted Activities: Hydropower projects will be regulated, while agriculture, plantations and local livelihoods will remain unaffected.

- Phased Notification: Allows state-wise or combined notification without waiting for consensus from all six states.

- Expert Committee: The Sanjay Kumar-led committee, constituted in 2022 to examine state objections and village-demarcation issues, has been extended until July 2027. Western Ghats ESA Proposal The proposal to notify the Western Ghats as an ESA has remained pending since August 2011.

- Gadgil Committee (2011): Recommended declaring the entire Western Ghats as an ESA and dividing it into ESZ-I, ESZ-II and ESZ-III based on ecological sensitivity. States opposed it as excessively restrictive on development.

- Kasturirangan Committee (2013): Recommended notifying about 37% of the Western Ghats, nearly 60,000 sq. km, as ESA while permitting sustainable development elsewhere. Challenges in Notifying the Western Ghats ESA

- Centre–State Deadlock: Disagreement persists over balancing conservation with development.

- Boundary Demarcation: Disputes over satellite mapping, village boundaries and ESA identification delay finalisation.

- Lack of Conservation Incentives: States face economic costs without adequate compensation or ecological fiscal transfers.

- Regulatory Uncertainty: Repeated draft notifications have created a policy vacuum, enabling illegal mining, quarrying, deforestation and unsustainable development. Key Facts About the Western Ghats

- Geographical Expanse: Extend about 1,490 km from Gujarat to Tamil Nadu and Kerala, covering nearly 1.4 lakh sq. km across six states: Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.

- Geological Origin: Older than the Himalayas; formed along the faulted edge of the Deccan Plateau after the break-up of Gondwana.

- Structural Divisions: Divided into the Northern, Central and Southern Western Ghats by the Goa Gap, Palghat Gap and Sencottah Gap.

- UNESCO Status: Declared a World Heritage Site in 2012 under Criteria (ix) and (x). It comprises 39 protected components grouped into seven sub-clusters.

- Divisions of the Western Ghats

  - Northern Western Ghats: Include the Sahyadri Range and basaltic Deccan Trap plateaus; major peaks include Kalsubai, Salher and Mahabaleshwar.

  - Central Western Ghats: Extend across Karnataka and are marked by heavy rainfall, evergreen forests and rivers such as Sharavathi and Netravati.

  - Southern Western Ghats: Include the Nilgiri, Anamalai and Cardamom Hills. Anamudi (2,695 m) is the highest peak of the Western Ghats and of India outside the Himalayas.

- Major Hill Stations: Include Matheran, Mahabaleshwar, Panchgani, Lonavala-Khandala, Amboli, Kodagu and Kudremukh.

- River Systems:

  - West-flowing Rivers: Periyar, Netravati, Sharavathi, Mandovi and Bharathappuzha are short, swift and hydroelectricity-rich rivers draining into the Arabian Sea.

  - East-flowing Rivers: Godavari, Krishna and Kaveri are longer rivers supporting irrigation, agriculture and drinking-water supply before entering the Bay of Bengal.

- Ecological and Economic Significance: One of the world's eight hottest biodiversity hotspots and a major barrier influencing the southwest monsoon, climate and regional hydrology.

  - Functions as the water tower of Peninsular India and contains major tropical evergreen forests.

  - Sequesters nearly 4 million tonnes of carbon annually, around 10% of India's forest-based carbon sequestration.

- Supports mineral-based industries, non-timber forest produce and livelihoods of indigenous and forest- dependent communities.

- Biodiversity and Conservation: Contains over 5,000 flowering plant species; about 65% of amphibians and 53% of freshwater fishes are endemic.
  - Supports at least 325 globally threatened species, including the Asian Elephant, Tiger, Gaur, Lion-tailed Macaque, Nilgiri Tahr and Nilgiri Langur.
  - The IUCN World Heritage Outlook classifies its conservation status as of "significant concern" due to habitat fragmentation, mining, development and linear infrastructure.
  - The continuing debate over its Eco-Sensitive Area demarcation reflects the challenge of balancing conservation with regional development.

Teesta Tunnel Disaster: Methane Risks and Himalayan Infrastructure Vulnerability

A suspected methane and toxic gas explosion inside the under-construction Head Race Tunnel of the Teesta Stage VI Hydropower Project at Samardung, Namchi, Sikkim, killed several workers and trapped others. How Is Methane Trapped in Hilly Terrain?

- About Methane: It is a colourless, odourless, and highly flammable gas that can accumulate in underground rocks and confined spaces such as tunnels.
- Explosion Mechanism: Methane mixed with air can ignite from sparks produced by drilling or construction machinery. Tunnel excavation may disturb methane-bearing rocks and trigger a sudden gas release.
- Methane in Rocks: It may remain trapped in porous rocks or isolated pockets within young and fragile geological formations.
- Organic Origin: In coal-bearing or carbon-rich strata, methane forms through the long-term decomposition of organic matter.
- Anaerobic Conditions: Waterlogged valleys and depressions can create oxygen-deficient conditions where microorganisms release methane while decomposing organic material.
- Migration Through Faults: Faults, cracks, and fissures allow methane from coal, natural gas, or geothermal deposits to rise and collect in enclosed spaces.
- Waste-Related Sources: Poorly managed waste dumps may generate methane through decomposition in oxygen- deficient layers.
- Sikkim's Geological Context: Southern Sikkim, including Namchi, has small coal deposits and lies within the geologically complex Rangit Tectonic Window.
- Detection Challenge: Small, localised methane pockets may escape standard geological surveys, which mainly assess rock stability, water conditions, and structural risks. Vulnerability of Infrastructure in Sikkim
- Teesta-VI Incident: The Teesta-VI tunnel disaster is Sikkim's first recorded hydropower accident involving a suspected methane-triggered explosion.
- Earlier Project Damage: The October 2023 Glacial Lake Outburst Flood (GLOF) destroyed the 1,200 MW Chungthang dam and damaged the 510 MW Teesta-V Hydropower Project, which was again affected by a landslip in August 2024.
- Fragile Himalayan Geology: Sikkim lies in a young, tectonically active, and erosion-prone Himalayan region, making it vulnerable to earthquakes, landslides, and slope failures.
- Impact of Construction: Blasting and tunnelling for dams, highways, and railways can destabilise slopes and increase landslide and mudslide risks.
- Human Pressures: Unregulated urbanisation, heavy tourism, deforestation, and poor waste management intensify environmental and geological vulnerabilities.
- Climate-Related Threats: Cloudbursts, glacier melting, and expanding glacial lakes are increasing the frequency and intensity of disasters affecting hydropower infrastructure. Why Has Tunnelling Been Disaster-Prone in India?
- High Geological Risk: Tunnelling in the Himalayan and northeastern regions is hazardous due to unstable rocks, active faults, heavy rainfall, and frequent landslides.
- Systemic Failures: Disasters also arise from poor planning, weak construction quality, inadequate oversight, and limited accountability.
- Inadequate Risk Assessment: Incomplete surveys and weak predictive modelling may miss fault zones, groundwater, weak rocks, and gas pockets.
- Poor Safety Compliance: Inadequate ventilation, fire protection, escape routes, and real-time monitoring increase underground risks.
- Worker Vulnerability: Limited training, insufficient protective gear, and unclear contractor responsibility heighten danger.
- Need for Reforms: India needs stricter enforcement, continuous geological monitoring, clear contractor liability, and specialised rescue teams with modern equipment.

Soil Management for Sustainable Agriculture

The Government promotes soil conservation through initiatives such as the Soil Health Card Scheme, National Mission on Natural Farming, Khet Bachao Abhiyan, geospatial soil mapping and digital agriculture platforms. Soil as a Strategic National Resource

- Foundation of Agriculture: Soil supports crop production, ecosystems and rural livelihoods. With 46%+ workforce dependent on agriculture, soil health affects farm incomes, food security and economic stability.
- Extent of Agricultural Land: As per Land Use Statistics 2022–23, India's reported area is 306.65 million hectares, with nearly 59% under agriculture.
- Food and Climate Security: Healthy soil improves yields, water and nutrient retention, and reduces external input dependence, supporting SDG 2 (Zero Hunger) and SDG 13 (Climate Action).
- Sustainable Soil Management:

- India focuses on climate-resilient agriculture, natural farming, soil mapping, land restoration and digital agricultural technologies.

- Government Initiatives: National Mission for Sustainable Agriculture and National Mission on Natural Farming promote resource-efficient and sustainable practices.

- Soil Health Card Scheme: Provides soil-testing results and crop-specific nutrient recommendations for balanced fertiliser use.

- Public Awareness: Khet Bachao Abhiyan promotes soil conservation, balanced fertiliser use and sustainable farming. How Does Soil Diversity Strengthen Indian Agriculture?

- Alluvial Soils: Found in Indo-Gangetic and Brahmaputra plains and river deltas; support intensive agriculture in Punjab, Haryana, UP, Bihar, Assam, West Bengal, Odisha and Andhra Pradesh.

- Black Soils: Found mainly in Maharashtra, Madhya Pradesh and Gujarat; clayey, moisture-retentive and rich in lime and calcium.

- Red Soils: Spread across Tamil Nadu, Karnataka, Andhra Pradesh, Madhya Pradesh, Bihar, West Bengal and Rajasthan; rich in iron but nutrient deficient.

- Laterite Soils:

  - Found in high rainfall regions of Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Odisha, Assam and Maharashtra; formed due to intense leaching.

- Desert Soils: Found in Rajasthan, Gujarat and Leh-Ladakh; sandy with low moisture retention and soluble salts.

- Forest and Hill Soils: Found in Himalayan and North- Eastern regions; vary with altitude, rainfall, temperature, vegetation and slope.

- Saline and Alkaline Soils: Found in arid, semi-arid, coastal and waterlogged regions; affected by poor drainage.

- Marshy Soils: Found in waterlogged areas of Tamil Nadu, Bihar and Uttar Pradesh; rich in organic matter. Role of Soil in Climate Action and Resilience

- Soil as a Carbon Sink: Soil stores atmospheric carbon dioxide as soil organic carbon through vegetation, roots and microorganisms.

- Benefits of Soil Organic Carbon: Improves soil structure, fertility, nutrient availability, moisture retention and drought resilience.

- Carbon Farming: Promotes practices that remove and store carbon in soil, supporting climate-smart agriculture.

- Government Support: Green India Mission, National Mission for Sustainable Agriculture, National Mission on Natural Farming and Carbon Credit Trading Scheme promote carbon storage and climate resilience. National Mission for a Green India

- One of the eight missions under NAPCC.

- Enhances forest and tree cover on forest, non-forest and degraded lands, improving ecosystem services, soil carbon and climate resilience.

- Supports India's NDC target of creating an additional carbon sink of 2.5–3.0 billion tonnes CO_2 equivalent by 2030.

- India created an additional carbon sink of 2.29 billion tonnes CO_2 equivalent (2005–2021). National Mission for Sustainable Agriculture

- Launched in 2014–15 under NAPCC.

- Promotes climate-resilient agriculture through soil health improvement, efficient water use, integrated farming and sustainable resource management.

- Since 2014–15, ₹2,119.84 crore released under Rainfed Area Development, covering 8.50 lakh hectares and benefiting 14.35 lakh farmers. National Mission on Natural Farming

- Launched in 2024 to promote nature-based farming, improve soil health, increase soil organic carbon and reduce input costs.

- As of March 2026:

  - Covered 18,786 clusters across 8.80 lakh hectares.

  - Enrolled 18.19 lakh+ farmers.

  - Supported by 33,676 trained Community Resource Persons.

- Bio-input Resource Centres provide inputs like Beejamrit and Jeevamrit. Carbon Credit Trading Scheme

- Adopted in 2023 to incentivise activities reducing, avoiding or removing greenhouse gas emissions.

- Under voluntary carbon markets, verified activities generate tradable credits, with each credit representing one metric tonne of CO_2 equivalent.

- Farmers can sell verified carbon credits for additional income. Integrated Initiatives for Strengthening Soil Health and Fertiliser Management

- Soil Health and Fertility Scheme: Provides Soil Health Cards with nutrient status and crop-specific recommendations for balanced fertiliser use.

- Training and Grassroots Support: ATMA, Krishi Vigyan Kendras and 70,002 trained Krishi Sakhis promote judicious fertiliser use, organic manure and bio-fertilisers.

- Expansion of Soil Health Cards: By 13 March 2026, 25.89 crore Soil Health Cards generated and 7.17 lakh demonstrations conducted.

- School Soil Health Programme: During 2025–26, involved 4,430 schools and 1,29,167 students. Nutrient-Based Subsidy Scheme

- Links fertiliser subsidies with nutrient content and covers 28 grades of phosphatic and potassic fertilisers.

- Direct Benefit Transfer in Fertilisers: Aadhaar-linked PoS devices ensure authentication and real-time sales tracking; subsidies of ₹6.77 lakh crore (2022–23 to July 2025) released.

- Neem-Coated Urea: Improves nitrogen-use efficiency and prevents diversion.

- Integrated Fertiliser Management System: Improves monitoring, logistics and transparency.

- Khet Bachao Abhiyan: Promotes soil test-based nutrient management and sustainable farming practices. Building a Digital Soil Ecosystem in India

- Nationwide Soil Resource Mapping: Soil and Land Use Survey of India uses satellite imagery and field observations for village-level soil maps.
  - By September 2024, 29 million hectares mapped against the target of 142 million hectares.
  - ₹1,076 crore provided to UP, MP, Rajasthan, Maharashtra, Tamil Nadu and Andhra Pradesh.
- Digital Agriculture Mission: Integrates soil, farmer, land, weather and crop datasets.
- AgriStack: Provides location-specific advisory services by integrating farmer, land, crop and soil data; 7.63 crore Farmer IDs generated by November 2025.
- Digital Crop Survey: Surveyed 23.5 crore crop plots during Rabi 2024–25.
- Krishi Decision Support System: Uses soil, weather and crop data for crop planning and nutrient management.
- AI-Based Soil Diagnostics: Uses AI, satellite imagery and remote sensing to identify soil stress and nutrient deficiencies.
- Precision Resource Application: Enables site-specific use of water and fertilisers, reducing costs and environmental damage.
- Farmer Advisory Systems: Assist in crop selection, sowing periods and nutrient management.
- Agri-Robotics: GPS, sensors and AI-based robots support soil sampling, planting and field management.
- Institutional Innovation: ICAR–Indian Agricultural Research Institute develops robotic technologies for precision soil analysis and agricultural operations. Soil health is central to food security, climate resilience and rural livelihoods in India. Discuss the role of natural farming in securing India's agricultural future. Mains Question S c i e n c e & T e c h n

SCIENCE & TECHNOLOGY

Generative AI in Synthetic Biology

Researchers from Stanford University and the Arc Institute used generative AI models (Evo 1 and Evo 2) to design complete, functional genomes of bacteriophages.

- Out of 285 AI-designed genomes synthesised and tested, 16 produced viable phages capable of infecting E. coli and overcoming bacterial resistance.
- This marks a shift from AI analysing biological data to designing functional biological entities. Generative Biology
- Definition: Generative biology combines AI and synthetic biology, where AI models learn patterns in DNA, RNA and proteins to design new functional biological entities de novo (from scratch).
- The Genomic Evolution: Stage Period Development Sequencing natural genomes (e.g., ΦX174 Reading 1970s bacteriophage) Writing 2000s Chemical synthesis of known DNA sequences Modifying 2010s Gene editing and targeted modifications AI-generated genetic blueprints for biological Designing Present functions
- Benefits & Opportunities:
  - Antimicrobial Resistance (AMR): Enables customised bacteriophage therapies against multidrug-resistant bacteria ('superbugs').
  - Targeted Gene Delivery: Helps design synthetic viral vectors for delivering gene-editing tools like CRISPR.
  - Vaccine and Drug Discovery: Accelerates development of antigens, monoclonal antibodies and therapeutic proteins.
  - Precision Oncology: Supports engineering of oncolytic viruses targeting cancer cells.
- Implications for India: AI-driven biological design can support drug discovery, genomics, vaccine development, AMR research
  - India needs stronger biomedical AI, secure computing infrastructure, biological datasets, biosecurity frameworks
  - Initiatives like the IndiaAI Mission must balance AI sovereignty with biosafety safeguards. o l o g y Major Concerns Associated with Generative AI in Synthetic Biology
- Dual-Use and Bioterrorism Risks: The same AI capabilities useful for vaccines, gene therapy and AMR research could be misused to design harmful biological agents.
  - Main concern is capability amplification, where AI enhances the ability of existing experts or laboratories rather than independently creating pathogens.
- Ecological Unpredictability: AI-designed organisms released intentionally or accidentally may have unknown ecological impacts, including species barriers and zoonotic risks.
- Acceleration of Biological Design: AI can analyse vast genetic possibilities and speed up Literature review, Biological modelling, Experimental design
  - Combined with automated laboratories, it can shorten the time between design and biological testing.
- Limitations of Existing Biosecurity Screening: Current DNA synthesis screening mainly detects similarity with known pathogens or toxins.
  - AI-generated designs may be novel and escape existing screening.
  - Future systems must assess: Biological function, Potential effects Entire innovation chain including: DNA synthesis providers, Research laboratories, Biological databases, Computing infrastructure
- Regulatory and Patent Ambiguity: Existing intellectual property laws do not clearly define ownership of AI- generated biological entities. Way Forward
- Mandatory Screening of DNA Synthesis: Implement strict Know Your Customer (KYC) norms and sequence screening for gene-synthesis providers.
- Updating Biological Weapons Convention (BWC), 1972: International frameworks should explicitly address AI-generated pathogens and synthetic biology risks.
- Hardware and Compute Governance: Consider oversight of high computing power required for advanced biological AI models.
- Red Teaming AI Models: AI systems should undergo simulated cyber-biological attack testing to ensure they prevent harmful biological design requests. The convergence of Artificial Intelligence and synthetic biology presents both transformative

opportunities and unprecedented security challenges. Analyse. Mains Question

Transforming India's Space Ecosystem

On India's 80th Independence Day, the Government highlighted the country's expanding space capabilities, private-sector ecosystem, human-spaceflight ambitions, planetary exploration and advanced launch technologies. Strategic Reforms Driving Growth in India's Space Sector

- Space Start-ups: Increased from 1 in 2014 to around 440 by August 2026.
- Space Economy: Valued at about USD 9 billion in August 2026; projected to reach USD 40–45 billion over the next decade.
- Private Investment: Rose from USD 100.5 million in 2021–22 to USD 618.5 million by March 2026.
- Non-Government Entities: 113 authorisations granted to 52 NGEs, including 18 start-ups, by mid-2026.
- Earth Observation Public-Private Partnership: IN-SPACe framework for India's first privately owned Earth- observation satellite constellation; attracted about ₹1,200 crore in private commitments.
- Foreign Satellites Launched: Increased from 35 before 2014 to 399 by January 2026.
- International Cooperation: Over 300 agreements with 61 countries and 5 multilateral organisations. Strategic Reforms Catalysing Growth in India's Space Sector
- 2020 Reforms: Opened the space sector to private participation in satellites, launch systems and applications.
- Indian Space Policy 2023: Expanded private participation and defined roles of NSIL and IN-SPACe.
- NewSpace India Limited (NSIL): ISRO's commercial arm; revenue rose from ₹321.77 crore in FY 2021–22 to over ₹3,000 crore in FY 2024–25.
  - Signed 118 Technology Transfer Agreements covering 83 technologies.
- IN-SPACe: Single-window authorisation body for private space activities.
  - Facilitated 71 ISRO technology transfers by 31 January 2026.
- FDI Liberalisation, 2024: 74% automatic route in satellite manufacturing/operations.
  - 49% in launch vehicles and spaceports.
  - 100% in satellite and ground-segment components.
- Norms, Guidelines and Procedures (NGP) 2024: Improved authorisation clarity and Ease of Doing Business.
- Funding Support: ₹1,000 crore Venture Capital Fund, ₹500 crore Technology Adoption Fund, and ₹75 crore Satellite Bus as a Service Scheme. Expanding India's Space Capabilities Beyond Earth Self-Reliant Space Transportation
- India operates PSLV, GSLV, GSLV Mk III and SSLV.
- Between July 2023 and June 2026, India completed 12 launch missions, carrying 11 national and 9 international satellites.
  - Sriharikota: Two operational launch pads; third launch pad under development.
  - Kulasekarapattinam, Tamil Nadu: Emerging as India's second launch site, mainly for SSLV and private launches. Lunar Exploration through the Chandrayaan Programme
- Chandrayaan-1 (2008): Detected water molecules and hydroxyl on the lunar surface.
- Chandrayaan-2 (2019): Captured lunar images up to 30 cm resolution.
- Chandrayaan-3 (2023): Made India the first country to soft-land near the lunar south polar region and fourth to soft-land on the Moon.
- Chandrayaan-4 (2027): Planned for lunar sample collection and return.
- Chandrayaan-5/LUPEX: Joint ISRO–JAXA mission to study lunar volatiles, including water, near the south pole. Beyond the Moon: Mars, Sun and Deep Space
- Mars Orbiter Mission: Entered Mars orbit on 24 September 2014; operated for over 8 years.
- AstroSat: India's first dedicated astronomy mission covering X-ray, optical and ultraviolet bands.
- Aditya-L1: India's first space-based solar mission; operates near Sun–Earth L1, about 1.5 million km from Earth.
- XPoSat: Launched in January 2024 for X-ray polarisation astronomy.
- SpaDeX: In January 2025, India became the 4th country to demonstrate autonomous space docking and undocking. Axiom-4 and Human Spaceflight Capability
- Group Captain Shubhanshu Shukla became the first Indian astronaut to visit the ISS through Axiom-4, launched on 25 June 2025.
- Mission concluded on 15 July 2025 and provided experience relevant to Gaganyaan, crewed operations and microgravity research.
- Navigation with Indian Constellation (NavIC): Provides navigation services across India and up to 1,500 km beyond its boundaries.
- NVS-01 and NVS-02: Launched in May 2023 and January 2025.
- NVS-03: Ready for launch; NVS-04 and NVS-05 under advanced realisation.
- Applications include power-grid synchronisation, train tracking, Aadhaar geo-tagging and mobile chipsets. Key Priorities in India's Future Space Programme Human Spaceflight and Orbital Infrastructure
- Gaganyaan: Expanded in September 2024 to ₹20,193 crore, covering 8 missions.
- Objective: Send 3 astronauts to around 400 km orbit for 3 days and return safely.
- First Uncrewed Mission: Targeted for Q4 2026, including Vyommitra validation.
- Crewed Gaganyaan: Targeted for 2027.

- Bharatiya Antariksh Station (BAS): Planned as a 5-module station by 2035. BAS-01 targeted for 2028.
  - Intended for long-duration human spaceflight, microgravity research and orbital operations. Advanced Orbital Docking Capabilities
- SPADEX-2 and SPADEX-3: Proposed to develop capabilities for:
  - Spacecraft docking.
  - Sample and crew transfer.
  - Transfer of power, fluids and propellants.
- Relevant to Chandrayaan-4, Gaganyaan and BAS. Venus Orbiter Mission
- Targeted for March 2028.
- Will study Venus's geology, atmosphere and ionosphere.
- Will demonstrate aerobraking and thermal-management technologies for future deep-space missions. India's space sector reforms are transforming the country from a government-led space programme into a broad-based space economy. Discuss. Mains Question

Rotating Detonation Engines

- India-based defence start-up D-Propulse demonstrated India's first indigenous 5 kN air-breathing Rotating Detonation Engine (RDE) at a DRDO facility in Hyderabad, achieving Technology Readiness Level-5 (TRL-5).
- It strengthens India's indigenous next-generation air-breathing propulsion capability.
- RDE: Uses continuous supersonic detonation waves, offering potentially higher thermodynamic efficiency and a more compact combustor than conventional engines.
- Deflagration vs. Detonation: Feature Deflagration Detonation Flame speed Subsonic Supersonic Combustion At constant pressure At constant volume Shock wave compresses mixture Greater heat loss due Effect before combustion, generating to expansion greater pressure and thrust
- RDE Working Mechanism: Uses an annular combustion chamber formed between two concentric cylinders.
  - Fuel and oxidiser are continuously injected ahead of the detonation wave, sustaining a continuous circular detonation and producing sustained thrust.
  - Unlike RDEs, Pulsed Detonation Engines (PDEs) burn fuel intermittently in a straight tube.
- Thermodynamic Efficiency & Payload Advantage: RDEs may provide 10-25% higher thermodynamic efficiency than traditional rocket engines.
  - A 20% efficiency gain can require about 17% less fuel, reducing launch costs and allowing larger satellite payloads or missile warheads.
- Key Strategic Applications:
  - Hypersonic systems: Potential use in hypersonic cruise missiles such as BrahMos-II, high-speed aircraft/UAVs and ramjet-type propulsion.
  - Space Launch Vehicles & In-Space Thrusters: Can improve the payload-to-fuel mass ratio for orbital and deep-space missions.
- Engineering and Material Hurdles: Must withstand temperatures above 2,000°C, pressures of 10-100 atmospheres and detonation velocities above 1,500 m/s.
  - Requires microsecond-level fuel-injection precision and advanced computing to control combustion instability.
- Global R&D Status: RDE technology remains in the R&D stage globally; Lockheed Martin, GE Aerospace, Astrobotic and SpaceWorks are conducting hot-fire tests for missile and space applications.

Total Solar Eclipse

On 12 August 2026, a total solar eclipse was visible across eastern Greenland, western Iceland, northern Russia, northern Spain and a small part of Portugal. Scientists used it to study the Sun's faint corona, normally obscured by the bright solar surface. Total Solar Eclipse

- Alignment: It occurs when the Sun, Moon and Earth align nearly in a straight line (syzygy).
- Shadow: The Moon passes between Earth and the Sun and completely blocks the Sun for observers within the umbra.
  - Umbra: Region of complete shadow where totality occurs.
  - Penumbra: Region of partial shadow producing a partial eclipse.
  - As Earth rotates and the Moon moves, the shadow sweeps across Earth, creating the eclipse path; the narrow umbral region is the path of totality.
  - Since the umbra is narrow, totality is visible over a small area and usually lasts only a few minutes or less at one location.
- Totality: The period when the Sun is completely covered; the sky darkens and the corona becomes visible, enabling study of solar activity. Solar Eclipse and its Types
- Solar Eclipse: Occurs when the Moon passes between the Sun and Earth, blocking some or all sunlight.
  - It occurs only during a New Moon with suitable alignment.
  - Eclipses do not occur every New Moon because the Moon's orbit is inclined about 5° to the ecliptic plane. They occur during two eclipse seasons each year, when the New Moon crosses this plane. Types of Solar Eclipse
- Total: Moon completely covers the Sun's disc within the path of totality, revealing the corona.
- Annular: Moon is near its farthest point from Earth and appears smaller, leaving a bright "ring of fire." It involves the antumbra, the continuation of the shadow beyond the umbra's tip.
- Partial: Sun, Moon and Earth are not perfectly aligned, so only part of the Sun is covered.
- Hybrid: Appears total from some locations and annular from others due to Earth's curvature and the changing position of the Moon's shadow. Significance of a Total Solar Eclipse in Studying the Solar Corona
- Inner Corona: During totality, the Moon blocks the bright photosphere, making the faint inner corona directly visible—an area difficult for coronagraphs because of scattered light and diffraction.

- Coronal Heating Problem: The corona exceeds 1 million°C, while the photosphere is about 5,500°C. Eclipse observations help study how energy reaches the outer atmosphere.
- Magnetic Structures: Coronal plasma, streamers and related structures reveal the Sun's magnetic field and help explain solar activity and the 11-year solar cycle.
- Space Weather: The corona produces the solar wind and is the source region of Coronal Mass Ejections (CMEs), which can disrupt satellites, GPS, communications and power grids.
- Solar Wind: Observations help explain how charged particles such as electrons and protons are accelerated into space. Historical Discoveries During Total Solar Eclipses
- Helium (1868): During the 1868 eclipse in India, French astronomer Pierre Jules Janssen detected an unknown yellow spectral line in the solar chromosphere. English astronomer Norman Lockyer later named the proposed element helium, after Helios, the Greek word for Sun.
- General Relativity (1919): Arthur Eddington's eclipse observations provided early observational evidence for Einstein's prediction that gravity bends light, supporting the General Theory of Relativity.

Physicist Deepak Dhar Awarded the 2026 Dirac Medal

Theoretical physicist Prof. Deepak Dhar has been named co-recipient of the 2026 Dirac Medal of the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste for contributions to statistical physics, especially the Abelian Sandpile Model.

- Co-recipients: Bernard Derrida, Marc Mézard and Haim Sompolinsky.
- Significance: Dhar is the 2nd scientist working in India to receive the medal, after Ashoke Sen (2014). Abelian Sandpile Model
- Developed: By Deepak Dhar in 1990, building on the Self-Organized Criticality model proposed in 1987 by Per Bak, Chao Tang and Kurt Wiesenfeld.
- Basic Idea: Sand grains are added until a critical state is reached; an additional grain may trigger an avalanche of varying size.
- Abelian Property: The final stable state is independent of the order in which grains topple, making cascading behaviour mathematically tractable.
- Self-Organized Criticality: Shows how systems can naturally evolve to a critical state where small disturbances may trigger minor or very large events.
- Applications: Used to understand cascading behaviour in earthquakes, forest fires, traffic jams, neural activity and financial-market fluctuations. Deepak Dhar
- Born in 1951, Pratapgarh, UP. Studied at Allahabad University and IIT Kanpur; PhD from Caltech (1978).Served as a teaching assistant to Richard Feynman at Caltech.
- Boltzmann Medal (2022): First Indian recipient; co- recipient with John Hopfield. Among only 10 scientists globally to have received both the Boltzmann Medal and Dirac Medal.
- Other honours: Padma Bhushan (2023), Shanti Swarup Bhatnagar Prize (1991), The World Academy of Sciences (TWAS) Prize (2002). Dirac Medal
- Institution & History: Instituted in 1985 by ICTP, Trieste (Italy) in honour of Paul A.M. Dirac, Nobel laureate and quantum mechanics pioneer.
  - ICTP: Founded in 1964; international institute for physical and mathematical sciences under Italy, UNESCO and IAEA; a UNESCO Category 1 Institute.
- Selection & Criteria: Announced annually on 8th Aug (Dirac's birthday) for outstanding contributions to theoretical physics.
- Exclusion Rule: Traditionally not awarded to existing Nobel Prize, Fields Medal or Wolf Prize recipients; some medallists later won the Nobel Prize.
- Founding Vision: ICTP was founded in 1964 by Abdus Salam to promote scientific collaboration between the Global South and the rest of the world.

NASA Invites ISRO to Join Moon Base Programme

NASA invited ISRO to join its Moon Base programme to establish a permanent human outpost near the Moon's South Pole.

- India-US CSJWG: Invitation came at the 9th India-US Civil Space Joint Working Group meeting at ISRO Headquarters, Bengaluru.
- TRUST Initiative: Meeting advanced civil and commercial space cooperation under US-India TRUST (Transforming the Relationship Utilising Strategic Technology), reviewed NISAR (NASA-ISRO Synthetic Aperture Radar) mission and reaffirmed UN COPUOS long-term sustainability guidelines.
- Artemis Link: Builds on India-US cooperation under the Artemis Accords, which India joined in June 2023. Moon Base Programme & Artemis Framework
- About Artemis Programme: NASA-led programme to return humans to the Moon for the first time since Apollo (1972), establish a permanent lunar base and prepare for future crewed Mars missions.
- Moon Base Project: Three-phase plan for humanity's first outpost near the lunar South Pole; region is important due to water ice in shadowed areas.
  - Phase I (Through 2029): Robotic South Pole missions, technology demonstrations and groundwork.
  - Phase II (2029-2032): Building systems and critical infrastructure for long-term presence.
  - Phase III: Assemble permanent outpost for astronauts to live, work and conduct extensive research.
- Artemis Accords: Established in 2020 by NASA, US State Department and seven initial signatories; non-binding principles for peaceful, safe and sustainable civil space exploration. India became 27th signatory in 2023.
- Aligns with Space Vision 2047: Indian Moon landing by 2040; Bharatiya Antariksh Station first module by 2028 and full station by 2035.
  - Would move India from independent missions such as Chandrayaan-3 towards complex multilateral human- spaceflight projects and strengthen its role as a global space power.

Lab-Grown Diamonds

LGDs are gaining attention as a sustainable alternative amid declining natural reserves and mining-related environmental and ethical concerns. India is promoting indigenous production through research and technological innovation. Key Features and Production

- About: LGDs are synthetic diamonds produced in laboratories and are chemically, physically, and optically identical to mined diamonds, with the same crystalline carbon structure.
- Properties: They have the same rarity, scintillation, lustre, and durability as natural diamonds.
- Traceability and Ethics: LGDs offer full supply-chain traceability and avoid links with environmental destruction, human rights abuses, and conflict financing associated with mined diamonds.
- Cost-Effectiveness: Improved equipment and manufacturing efficiency have reduced LGD prices, making them more affordable.
- Production Methods:
  - HPHT (High Pressure, High Temperature) (1954): Replicates conditions in the Earth's mantle by subjecting carbon to extreme pressure and temperature.
  - CVD (Chemical Vapour Deposition) (1962): Places a diamond seed in carbon-rich gases such as methane; ionised plasma enables carbon to deposit layer by layer.
- Impact of Adopting Lab-Grown Diamonds:
  - Environmental Sustainability: Avoids deforestation, soil erosion, high water use, and ecological displacement caused by mining.
  - Carbon Footprint Reduction: Renewable-energy-based production lowers emissions and aligns with the UN SDGs and circular economy principles.
  - Industrial Advancements: Used in cutting, drilling, semiconductors, quantum computing, and protective coatings due to their durability and thermal conductivity. India's Push for Indigenous Production
- Global Role: India processes about 90% of the world's diamonds and accounts for nearly 75% of global diamond trade by value.
- LGD Production: India manufactured over 3 million LGDs in 2023, more than 15% of global production.
- Budget Support: Union Budget 2023-24 supported research in HPHT and CVD technologies.
- InCent-LGD: Commerce Ministry granted about ₹243 crore for five years to IIT Madras to develop indigenous machinery, processes and diamond seeds. Concerns Regarding Natural Diamond Mining
- Dwindling Supplies: Mines accounting for 90% of global production may be exhausted within 50 years; major mines such as Argyle and Diavik are nearing exhaustion.
- Occupational Health Hazards: Asbestos exposure can cause asbestosis, pleural plaques, and mesothelioma.
- "Blood Diamonds" and Conflict: Illicit diamond sales fund military action and civil violence; gaps in the Kimberley Process enable smuggling.
  - India is the Kimberley Process Chair for 2026 and a founding member of KPCS, leading efforts against conflict diamonds and for transparent trade.
- Majhgawan Diamond Mine, Panna, Madhya Pradesh, operated by NMDC, is India's only active mechanised commercial diamond mine.
- Major historical regions– Panna Diamond Belt, Krishna River gravels, Mahanadi River gravels, and Wairagarh Conglomerates.
- Major kimberlite deposits– Majhgawan Pipe and Wajrakarur Pipe.

World Hepatitis Day (WHD) 2026

World Hepatitis Day was observed on 28 July 2026 to raise awareness about viral hepatitis.

- Theme 2026 - "Hepatitis: Let's Break It Down." Key Facts About Hepatitis
- About: Hepatitis is liver inflammation caused by viral infections, alcohol, certain drugs or autoimmune disorders.
- Major Types: The five main viruses are hepatitis A, B, C, D and E.
  - Chronic hepatitis B and C cause over 90% of hepatitis- related deaths and disability, mainly through cirrhosis, liver failure and liver cancer.
- Global Burden: Viral hepatitis causes nearly 1.34 million deaths and 2 million new infections annually. Around 287 million people live with chronic hepatitis B or C, mostly undiagnosed.
- India's Burden: India has about 29 million hepatitis B and 5.5 million hepatitis C cases (second highest-burden country).
  - It accounts for 10–15% of the global hepatitis B carrier pool.
- Seroprevalence: In 2021, hepatitis B seroprevalence was 0.85% and hepatitis C was 0.29% in India.
- Diagnosis Gap: Only about 2.4% of hepatitis B cases in India are diagnosed, as early infection is often asymptomatic.
- Vaccination Gap: Hepatitis B birth-dose coverage is around 63%, compared with 93% third-dose coverage, increasing the risk of mother-to-child transmission.
- Symptoms: Possible signs include fatigue, loss of appetite, nausea, abdominal discomfort, dark urine and jaundice.
- Major Barriers: Low awareness, stigma, misinformation, weak primary-care integration and high treatment costs restrict testing and treatment.
- WHO Targets for 2030: Reduce new hepatitis B infections by 90%, hepatitis-related deaths by 65%, and achieve 90% diagnosis coverage. National Viral Hepatitis Control Programme (NVHCP)
- Launch: Started in 2018 to provide hepatitis screening, diagnosis and treatment and reduce related illness and deaths.
- Coverage: Addresses hepatitis A, B, C, D and E through preventive, promotive and curative measures, supporting the

2030 Sustainable Development Goal on communicable diseases.

- Surveillance and Treatment: Hepatitis A and E outbreaks are monitored through the Integrated Disease Surveillance Programme; free diagnosis and medicines are provided for hepatitis B and C.
- Digital Monitoring: The NVHCP Management Information System portal enables paperless registration, reporting and treatment monitoring. Supporting National Health Programmes
- Reproductive, Maternal, Newborn, Child, Adolescent Health and Nutrition programme: Provides universal screening of pregnant women for hepatitis B.
- Universal Immunisation Programme: Provides the hepatitis B birth dose to newborns; babies of infected mothers also receive hepatitis B immunoglobulin within 24 hours.
- National AIDS Control Programme: Screens high-risk groups for hepatitis B and C and vaccinates eligible healthcare workers and high-risk individuals.
- National Tuberculosis Elimination Programme: Supports hepatitis diagnosis using existing molecular-testing machines.
- Blood Transfusion Services: Link hepatitis-positive blood donors with healthcare facilities for evaluation and treatment.
- Helpline: 1800-11-6666 provides information on prevention, transmission, treatment and service centres.

Mega Data Centres and the Sustainability Challenge

Protests in Andhra Pradesh and Maharashtra raised concerns over the water, electricity and environmental impact of mega data centres.

- Google: 1 GW AI data centre hub in Visakhapatnam–Anakapalli.
- Amazon: 422 MW hyperscale data centre in Thane. Data Centres
- About:
  - Data centres are specialised facilities that securely store, manage and process electronic data using servers, storage systems, networks, cooling, power and security infrastructure. They support digital services such as cloud computing and artificial intelligence. They house critical Information Technology (IT) infrastructure.
- Geographical Distribution:
  - India has around 150 data centres, led by AWS, Microsoft Azure and Google Cloud. Mumbai accounts for over 50% of the capacity, while Ahmedabad, Pune and Visakhapatnam are emerging hubs.
- Growth Drivers:
  - Digitalisation: India generates nearly 20% of global data but has only 3% of global data-centre capacity.
  - AI and Cloud: AI capacity may rise from 275 MW to 6,546 MW by 2030; total capacity may reach 12 GW.
  - Digital Users: Over 1.03 billion internet users and about 22 billion monthly UPI transactions.
- Government Support: Subsidised land and power, tax benefits and faster approvals.
  - E.g. Gujarat's Data Centre Policy 2026–29 targets ₹6 lakh crore in investment and 7.5 GW of capacity, while Andhra Pradesh plans to develop about 5 GW of capacity in Visakhapatnam.
- Private Investment: Google, Reliance–Meta, Yotta and TCS HyperVault.
- Data Localisation: Promotes domestic and secure data storage.
- Government Initiatives: Dedicated State data-centre policies (Gujarat, Uttar Pradesh, Tamil Nadu, Telangana, Maharashtra and Andhra Pradesh).
  - Fiscal incentives and concessional land.
  - Data-centre parks, substations and single-window clearances.
  - Digital India and National Informatics Centre Data Centres. Major Concerns Way Forward Treated wastewater, closed-loop cooling and rainwater harvesting. Water Stress: A 1 MW facility may Avoid water-stressed, densely use 25.5 million litres annually. populated and ecologically sensitive areas. Electricity Grid Pressure: AI data Renewable energy, efficient servers centres may add 26.3 GW demand and battery backup. by 2031–32. Environmental Impact: Data Public consultation and transparent centres may consume 7% of India's environmental assessments. electricity by 2040. Limited Employment: High Ensure local employment, skill resource use but few permanent development and benefit-sharing. jobs. Weak Transparency: Unclear Mandatory disclosure of water, resource-use data and inadequate power, emissions and waste. public consultation. Strategic Risks: Excessive Real-time monitoring, public subsidies, stranded assets and reporting and penalties for dependence on global hyperscalers. violations. Mega data centres are critical for India's digital economy and AI ambitions, but they also raise concerns over water use, power demand and environmental governance. Discuss. Mains Question H i s t o r y, A r t & C u

HISTORY, ART & CULTURE

Royal Indian Navy Mutiny of 1946

As India marked its 80th Independence Day (15th August 2026), the Royal Indian Navy (RIN) Mutiny of 1946 is being remembered for its role in bringing India's independence closer. Although the mutiny ended with the sailors' surrender, it shook British confidence in the loyalty of Indian armed forces, a crucial pillar of colonial rule. What is the Royal Indian Navy (RIN) Mutiny of 1946?

- About:
  - The Royal Indian Navy (RIN) Mutiny of 1946 was a major uprising by Indian naval ratings against British authority, which received widespread support from workers, students and civilians and generated sympathy within other branches of the armed forces.
  - Starting as a strike on 18th February 1946, in Bombay (now Mumbai), the revolt rapidly expanded into a broader anti-imperial movement across British India, accelerating the nation's path to independence.
- Causes and Triggers:
  - Post-War Demobilization: During World War II, the Royal Indian Navy expanded from under 2,000 to nearly 30,000 personnel. After the war, Britain planned to reduce it to around

11,000, creating job insecurity and loss of status among Indian sailors.

- Racial Discrimination and Poor Conditions: Indian ratings faced racial discrimination, poor living conditions and inferior food compared to British personnel. Between 1942 and 1945, nine smaller mutinies had already occurred over morale and management issues.

- Immediate Spark: Anti-British slogans such as "Quit India" and "Down with the British" were painted at HMIS Talwar in late 1945 and again in early February 1946 In February 1946, Commander Arthur Frederick King's racial abuse and refusal to address their complaints triggered the full-scale strike on 18th February 1946.

- Nationalist Fervour: The Indian National Army (INA) trials and the influence of Subhas Chandra Bose intensified nationalist sentiment among the sailors, turning service grievances into a broader anti-colonial protest. u l t u r e

- The revolt spread from Bombay to naval bases in Karachi, Visakhapatnam, Jamnagar and Kolkata, involving around 78 ships, 20 shore establishments and nearly 20,000 personnel.

- The rebels formed a Naval Strike Committee, called themselves the Indian National Navy and Azad Hindis (drawing inspiration from the INA), removed British flags and hoisted Congress and Muslim League flags.

- The revolt also received widespread civilian support, particularly from dockyard and mill workers, railway workers and students, disrupting public transport and commercial activity in Bombay.

- Demands of the Mutineers: Better food, rations and living conditions, parity in pay and allowances with the Royal Navy, fair employment prospects after demobilisation, protection from victimisation, and access to NAAFI (Navy, Army and Air Force Institutes) stores.

  - Release and fair trials for INA detainees, withdrawal of British Indian troops from Indonesia, and opposition to using Indian personnel for British imperial expansion.

- British Crackdown: British forces used disproportionate force, killing at least 400 civilians.

- Resolution and Aftermath: Sardar Vallabhbhai Patel and Muhammad Ali Jinnah persuaded the sailors to end the mutiny to stop the spreading violence.

  - The mutiny eventually ended with the surrender of the rebel sailors, limiting its immediate political success. Unlike the INA, it lacked a charismatic national leader who could become its enduring public symbol.

  - The RIN Mutiny, often described as the "last war of independence," shook British confidence by demonstrating that they could no longer rely unconditionally on Indian armed forces to sustain colonial rule, thereby hastening British withdrawal from India.

Indian Independence Act, 1947

The 80th Independence Day brings attention to the Indian Independence Act, 1947, the landmark legislation that ended British rule in India and provided for the creation of India and Pakistan as independent dominions.

- It was passed on 4th July 1947, received Royal Assent on 18th July 1947, and came into effect on 15th August 1947. Key Features of the Act:

- Partition: Created India and Pakistan as independent dominions.

- British Sovereignty: Ended British legal authority and the monarch's title of Emperor of India.

- Viceroy: Replaced the Viceroy with a Governor-General for each dominion.

- Constituent Assemblies: Empowered them to frame constitutions and repeal/modify existing laws.

- Princely States: Ended British paramountcy, allowing them to join India, Pakistan or remain independent.

- Interim Framework: Continued the Government of India Act, 1935, with modifications, until new constitutions were framed.

- Boundary Demarcation: Punjab and Bengal boundaries were determined by Boundary Commissions chaired by Sir Cyril Radcliffe.

- Secretary of State: Abolished the office of Secretary of State for India.

- Background:

  - Freedom Struggle: Mass movements such as the Non-Cooperation Movement and Quit India Movement intensified the demand for independence.

  - Muslim League's Demand: The Lahore Resolution, 1940 strengthened the demand for a separate Muslim state.

  - Failure of Cabinet Mission Plan, 1946: Its attempt to preserve a united India with provincial autonomy failed amid political differences and communal tensions.

  - Attlee's Announcement: In February 1947, British PM Clement Attlee announced transfer of power to India by June 1948 at the latest.

  - Mountbatten Plan: The 3rd June Plan accelerated the transfer of power, was accepted by the Congress and Muslim League, and became the basis of the Indian Independence Act, 1947.

Veeragallu Discovery Sheds Light on Ruler Vishnuvardhana's Death

A 12th-century Veeragallu (hero stone) bearing an Old Kannada inscription unearthed in Neeragunda village, Karnataka, may help resolve the long-standing historical debate over the death of Hoysala ruler Vishnuvardhana, making it an important archaeological discovery.

- Discovery Site: The Veeragallu was discovered during restoration work at the Hoysala-era Lakshmi Narayana Swamy Temple in Neeragunda, Karnataka.

- Inscription Details: The inscription states that Maravve erected the Veeragallu in memory of her husband, Boppa, a Hoysala soldier, who died shortly after the death of King Vishnuvardhana at Bankapura (present-day Haveri district).

  - It records the date as Ekadashi of Pushya Masa, Durmathi Samvatsara, Year 1064, corresponding to 11th December 1141 CE (Gregorian Calendar).

  - If authenticated, this inscription could resolve the long-standing dispute regarding Vishnuvardhana's death, previously

believed by different scholars to have occurred in 1149 CE or 1152 CE.

- About Veeragallu (Hero Stones): Memorial stones erected to honour individuals who died defending their king, village, or cattle.
  - Usually feature three panels depicting the battle scene, ascent to heaven, and worship before a deity, symbolising Moksha (salvation).
  - Reflect the Hoysala Garuda tradition, where elite royal bodyguards displayed absolute loyalty and, in some cases, sacrificed their lives following the king's death.
- King Vishnuvardhana: Originally known as Bitti Deva, he was one of the greatest rulers of the Hoysala dynasty.
  - Defeated the Cholas in the Battle of Talakad (1116 CE), consolidating Hoysala power in southern India.
  - The Chennakeshava Temple at Belur, Karnataka, is one of the finest masterpieces of Hoysala architecture. It was consecrated by the Hoysala ruler Vishnuvardhana in 1117 CE to commemorate his 1116 CE victory over the Cholas and was originally known as the Vijaya Narayana Temple.
  - Influenced by Ramanujacharya, he embraced Srivaishnavism while continuing to patronise Jainism and Shaivism.
- About the Hoysala Empire: Ruled parts of present-day Karnataka, Tamil Nadu, and Andhra Pradesh between the 11th and 14th centuries CE.
  - Capitals were Belur and later Halebidu (Dwarasamudra).
  - Hoysala temples are renowned for their distinctive Vesara-style architecture, characterized by complex stellate (star-shaped) plans, raised circumambulatory platforms (Jagati), tiered friezes, and intricate soapstone carvings.
  - The Sacred Ensembles of the Hoysalas (Belur, Halebidu, and Somanathapura) were inscribed as a UNESCO World Heritage Site in 2023. S o c i a l I s s u e s

SOCIAL ISSUES

Centre's Opposition to Creamy Layer for SC/STs

The Union Government opposed applying the creamy layer principle to SCs/STs before the SC

- This followed the 7-judge Constitution Bench judgment in State of Punjab v. Davinder Singh (2024), which allowed sub-classification within SC/ST quotas and suggested considering creamy-layer exclusion to prevent "elite capture" of reservation benefits. 'Creamy Layer' Concept
- Creamy Layer: Identifies and excludes relatively socially, economically and educationally advanced individuals within a reserved category from reservation benefits.
- Origin: Indra Sawhney v. Union of India (1992) upheld 27% OBC reservation while requiring exclusion of the creamy layer.
- Current Application:
  - OBCs: Only Non-Creamy Layer (NCL) candidates receive 27% reservation in public employment and education.
  - SCs/STs: Creamy layer has traditionally not applied because their backwardness stems from untouchability, social stigma and geographical isolation, not merely economic deprivation. Sub-categorisation and Creamy Layer Concept Meaning Divides an existing quota among different Sub-categorisation groups within the same reserved category. Excludes relatively advanced individuals Creamy Layer from reservation benefits altogether.
- States such as Telangana, Haryana, Punjab and Andhra Pradesh have sub-classified SC quotas; Mizoram has sub-categorised ST quotas.
- At the Centre, ST sub-categorisation is used in Eklavya Model Residential School admissions to ensure minimum representation of PVTGs.
- EWS reservation (introduced in 2019) also uses income and asset limits and is available only to persons outside SC, ST and OBC reservations. Centre's Opposition to the Creamy Layer for SC/STs
- Historical and Structural vs. Economic Backwardness: SC/ ST disadvantage arises from centuries of oppression, untouchability (Article 17), social stigma and geographical isolation, and cannot be reduced to economic deprivation.
- Persistence of Caste Stigma: Economic advancement does not necessarily remove caste discrimination or deficits in social and cultural capital.
- Fallacy of Economic Determinism: SC/ST backwardness is structurally different from OBC (identified under Article 340) social and educational backwardness, making income an inadequate proxy.
- Parliamentary Supremacy and Separation of Powers:
  - Articles 341(2) and 342(2) provide that inclusion or exclusion from SC/ST Presidential Lists can only be done by Parliament by law.
  - State of Maharashtra v. Milind (2001) held that courts cannot alter these lists.
  - However, Jarnail Singh (2018) held that creamy-layer exclusion does not itself alter Presidential Lists.
- Constitutional Protection: Article 16(4A), inserted by the 77th Constitutional Amendment, 1995, specifically enables reservation in promotion for SCs/STs.
- Requirement of Empirical Data: The Centre argues that creamy-layer exclusion without a contemporary nationwide socio-economic caste database would be premature and arbitrary.
  - Census 2027 will include caste enumeration, but its results are not yet available. Measures for Equitable SC/ST Reservation
- Prioritizing Sub-Categorization over Economic Exclusion: Use the Davinder Singh ruling for evidence-based sub- classification and dedicated sub-quotas for the most disadvantaged groups.
- Institutionalizing Pre-Legislative Socio-Economic Audits: Any restructuring of reservation should follow a comprehensive socio-economic census and empirical assessment of intra-group disparities.
- De-linking Social Capital from Financial Capital: Treat reservation as an instrument of representation and dignity, not merely poverty alleviation.
- Deploying Targeted Means Tests Outside Quotas: Use economic criteria in scholarships, housing and financial grants to target poorer sections without restricting constitutional

reservation. Distinguish between sub-categorisation and creamy layer exclusion. Why may sub-categorisation be considered a more suitable approach for addressing intra-category disparities among SCs/STs? Mains Question

Debate on Alcohol Prohibition

Bihar's 2016 alcohol prohibition is under debate after the 'Macro Perspective of Bihar's Development Achievements, Unfinished Agenda, and the Way Forward' report at the India Policy Forum 2026 recommended lifting the ban due to limited impact on violence against women and significant revenue losses.

- Reliance on NCRB data is contested because higher reported crime may reflect better reporting. Rape cases declined or remained relatively stable after the ban, highlighting the need for specific, causally relevant indicators. Constitutional and Legal Provisions Regarding Alcohol Regulation in India Provision/SC Judgements Key Point Directs the State to endeavour to prohibit consumption of intoxicating drinks and Article 47 (DPSP) drugs injurious to health, except for medicinal purposes. States regulate production, manufacture, Seventh Schedule, State List, possession, transport, purchase and sale Entry 8 of intoxicating liquor. No fundamental right to trade in liquor; Khoday Distilleries Ltd. v. States may regulate, prohibit or create State of Karnataka (1994) a monopoly. Article 19(1)(g) does not protect liquor State of Tamil Nadu v. K. Balu trade; restrictions can be imposed for (2016) public safety. State regulatory competence under State of U.P. v. Lalta Prasad Entry 8 extends to certain non-potable/ Vaish & Sons (2024) industrial alcohol.
- Regulations Related to Alcohol Usage in India:
  - National Action Plan for Drug Demand Reduction (NAPDDR) 2021-22: Prevention, treatment, counselling, rehabilitation and demand reduction for alcoholism and substance dependence.
  - National Mental Health Policy 2014: Links alcohol use with mental illness.
  - National Health Policy 2017 and National Suicide Prevention Strategy 2022: Recommend alcohol-control measures.
  - Control of Noncommunicable Diseases (NMAP) 2017- 2022: Advocates a national alcohol policy. NOTE: NFHS-6 (2023-24) reports alcohol use among 18.9% of men and 1.1% of women aged 15+, against 18.7% and 1.3% respectively in NFHS-5. Arguments Regarding Alcohol Prohibition Arguments in Favour of Prohibition
- Gender-based violence: Studies found reduced spousal violence in Bihar; a 2024 Lancet Regional Health study estimated the ban prevented over 21 lakh cases of violence.
- Household expenditure: Reduced alcohol spending can redirect income towards education, nutrition and durable assets.
- Public health: Can reduce alcohol-related diseases and injuries; the 2024 Lancet study estimated Bihar's ban prevented 18 lakh cases of overweight/obesity among men.
- Economic costs: A 2019 study estimated alcohol consumption costs India around 1.45% of GDP annually; social costs are estimated at over three times the economic gains from alcohol excise taxes. Arguments Against Complete Prohibition
- Parallel economy: Encourages illegal markets, liquor mafias, cross-border smuggling and corruption.
- Hooch tragedies: Unregulated liquor may cause mass poisoning; a 2025 Amritsar hooch tragedy killed 21 people, with suspected methanol contamination.
- Inequitable enforcement: Poorer groups may face greater risk of arrest, while affluent consumers can access smuggled liquor.
- Revenue loss: Alcohol excise duties often contribute 15%-25% of states' total tax revenue, affecting spending on infrastructure, welfare and de-addiction.
- Judiciary and prisons: Stringent prohibition laws can cause mass arrests, prison overcrowding and judicial burden.
- Limited long-term effectiveness: Experiences such as US Prohibition (1920-33) and Haryana's 1990s ban show that complete bans may fail to eliminate demand. Measures to Make Alcohol-control Policy more Effective
- Applying 'Nudge' Theory: Use strict age-gating, prohibition of surrogate advertising and graphic health warnings instead of relying only on blanket bans.
- Community-Led De-addiction: Involve PRIs and women's SHGs, including models such as Kudumbashree, in identifying vulnerable households and counselling.
- Technological Intervention: Consider state-monopolised, biometric-linked rationing/smart liquor cards to limit purchases.
- Ring-Fencing Funds: Statutorily earmark part of alcohol excise revenue, such as 20%, for psychiatric healthcare, de-addiction centres and nutrition schemes.
- Prioritise Rehabilitation over Criminalisation: Treat alcohol dependence mainly as a public-health and social issue, strengthen treatment and rehabilitation, while strictly targeting illegal supply networks. Article 47 provides a constitutional basis for regulating intoxicating substances, but its implementation raises questions of State capacity, individual liberty and fiscal sustainability. Discuss. Mains Question

The State of Food Security and Nutrition in the World 2026

A joint UN report SOFI 2026 revealed that Africa has surpassed Asia for the first time as the region with the highest absolute population facing hunger. Key Findings of SOFI 2026

- Global Hunger: Undernourishment declined for the third consecutive year, from 8.6% (2022) to 7.8% (2025); however, 645 million people remained undernourished, above pre-pandemic levels.
- Africa as Hunger Epicentre: Africa recorded 309 million hungry people (20% of its population), surpassing Asia (292 million; 6%); it may host 56% of the world's undernourished population by 2030.
  - Drivers include climate change, conflicts (Sudan and the Democratic Republic of the Congo), poverty, high food and energy prices, fertiliser costs and geopolitical tensions.
- Food Insecurity: About 2.1 billion people (25.8%) faced moderate or severe food insecurity in 2025, still above pre-Covid levels.

- Cost of a Healthy Diet: CoHD rose to 4.28 PPP dollars per person per day in 2025; 2.69 billion people (32.7%) could not afford a healthy diet, with Africa recording 66.6% unaffordability. Nutrition Indicators and Programmes Indicator / Programme — Status — Key Point Stunting (under five) — 35.5% -> 29.3% — Declined b/w NFHS-5 (2019-21) and NFHS-6 (2023-24). Severe wasting — 7.7% -> 5.2% — Declined over the same period. Underweight — 32.1% -> 31.8% — — Complementary feeding, 6-8 months — 45.9% -> 59.5% — Improved infant feeding; malnutrition nevertheless remains high. PM POSHAN — Bal Vatika-Class VIII — Hot cooked meals in eligible government and aided schools; supports nutrition, enrolment, attendance and learning. Anaemia — Women (15–49 years) 57%; children (6–59 months) 67.1% — NFHS-5 levels remain high; Anemia Mukt Bharat and Rice Fortification address hidden hunger.
- SDG 2 Off Track: In March 2025, Minimum Dietary Diversity for Children (MDD-C) and Women (MDD-W) became official indicators for SDG 2.2 diet quality dimension. Only 30.8% of children aged 6-23 months achieved MDD-C (29.4% a decade earlier), while 62.7% of women aged 15- 49 achieved MDD-W.
  - Progress on stunting, wasting, anaemia, low birthweight and obesity remains inadequate. Low farm productivity, weak value chains, high input costs, poor logistics and staple-crop bias keep nutritious food expensive. India and the SOFI 2026 Report
- Regional Progress: India contributed significantly to Southern Asia's reduction in undernourishment from 13.9% (2021) to 9.3% (2025), along with lower food insecurity.
- Diet Affordability: Excluding India would reverse the trend among lower-middle-income countries from a decline to an increase in the population unable to afford a healthy diet.
- Nutrition Outcomes: Southern Asia remains on track for reducing child stunting and halting child overweight, but maternal anaemia remains a major concern.
- Price Sensitivity: Rising fruit and vegetable prices disproportionately increase healthy-diet costs across South Asia. State of Food Security and Nutrition in India
- Food Safety Net: NFSA, 2013 and universalised PM Garib Kalyan Anna Yojana (PMGKAY) provide free foodgrains to over 81 crore AAY and Priority Households (PHH) beneficiaries.
- Production and Distribution: National Food Security & Nutrition Mission (NFSNM) supports foodgrain production; NFSA distributes it through TPDS, covering 75% of the rural and 50% of the urban population. Draft National Food Security (Amendment) Bill, 2026
- Proposed Change: AAY entitlement from fixed 35 kg per household to 7 kg per beneficiary per month, capped at 35 kg per household.
- Rationale: Remove per-capita disparities, rationalise distribution and align entitlements with household size and nutritional needs.
- Concern: AAY households with fewer than five members may receive less foodgrain, affecting vulnerable families and State allocations. Structural Bottlenecks
- Cereal-Centric Policy: Rice-wheat procurement supports self-sufficiency but discourages pulses, oilseeds and nutritious millets (Shree Anna), while contributing to groundwater depletion and ecological stress in north- western India.
- Post-Harvest Gaps: Weak cold chains, storage and logistics cause losses in fruits, vegetables, dairy and other perishables, affecting farmer incomes and nutrition.
- Limited Dietary Diversity: NFSA, PM POSHAN, ICDS and Rice Fortification strengthen calorie and micronutrient security, but regular access to proteins, pulses, eggs, milk, fruits and leafy vegetables remains uneven.
- Targeting Gaps: Despite digitised ration cards, 99.9% Aadhaar seeding and One Nation One Ration Card (ONORC), NFSA coverage based on the 2011 Census, urbanisation, migration and inclusion-exclusion errors leave vulnerable households out.
- Climate Risk: Over 50% of India's net sown area remains rain-fed and vulnerable to erratic monsoons, heatwaves, floods and droughts. Way Forward
- Expand Nutritious Food Supply: Redirect agricultural R&D and incentives towards fruits, vegetables, pulses and legumes; reduce food loss and improve trade integration.
- Reduce Food Costs: Invest in cold chains, storage, transport and post-harvest infrastructure; post-farmgate activities account for nearly 70-75% of consumer food costs, especially for perishables.
- Region-Specific Strategies: Strengthen rural-urban market links and post-harvest management, tailored to regional food-system challenges.
- Nutrition-Sensitive Protection: Reorient subsidies and welfare towards diverse, nutrient-dense foods rather than mainly staple cereals.
- Data-Driven Governance: Develop granular sub-national food-price and diet-affordability monitoring for timely interventions.
- Inclusive and Sustainable Reform: Sequence demand- and supply-side measures, support smallholders, women and youth, and use true-cost accounting without compromising the environment or rural livelihoods. The affordability of a healthy diet has emerged as the biggest challenge to achieving SDG-2. Discuss. Mains Question

NITI Aayog Report on India's Caregiving Ecosystem

NITI Aayog's report "Reimagining Care: Strategies for Empowering Caregivers in Viksit Bharat@2047" proposes a professional, inclusive and future-ready caregiving ecosystem and seeks to position India as a global hub for skilled caregivers. Need for Organised Caregiving Ecosystem in India Elderly population (60+) may rise from 149 million in 2022 to 347 million (20.8%) by 2050; 26.8 million Indians live with Demographic Transition disabilities, while chronic disease, dementia and age-related illness increase long-term, geriatric, palliative and home-care needs. Nearly 10% of the population are family caregivers, mostly untrained and unpaid; Family Care Burden professionalisation can meet care demand, create jobs and strengthen Viksit Bharat@2047. WHO projects a shortage of nearly 11 million health workers by 2030; OECD countries Global Care Deficit may need 13.5 million additional care workers by 2040, creating an opportunity for India. Care economy accounts for 16% of global employment;

unpaid care contributes nearly USD 11 trillion annually. India's care-services Economic Potential market may grow from USD 29.62 billion in 2023 to USD 72.31 billion by 2030 (CAGR 13.76%). NSO Time Use Survey 2024: 41% of women aged 15-59 performed caregiving versus 21.4% of men; women spent 140 Women's Empowerment minutes daily versus 74 minutes for men. Formalisation can reduce unpaid work and raise female labour-force participation. Standardised training and G2G mobility with ageing societies (Japan, Germany, the UK, Global Competitiveness and other OECD countries) can generate employment, remittances and soft power. Improves care for the elderly, PwDs and other vulnerable groups and advances the Inclusive Growth Purple Economy by enabling PwDs to work as trained caregivers.

- Article 41 directs the State to provide public assistance in old age, sickness, disability and other vulnerable conditions, while professional caregiving promotes the right to work.
- Care Economy vs Monetized Economy — Valuation & Measurement: largely unpaid and excluded from GDP in the care economy, versus formally measured and contributing directly to GDP in the monetized economy.
  - Nature of Work: caregiving and domestic services sustaining well-being and human capital, versus market-oriented goods and services for economic exchange.
  - Workforce Composition: predominantly women reflecting gendered norms, versus a more diversified formal or informal workforce.
  - Regulation: limited legal recognition, contracts, social security and labour protection, versus contracts, labour protection and social security (though gaps remain).
  - Economic Recognition: often treated as family or moral responsibility, versus recognised as income-generating, productive and taxable activity.
- National Policy on Caregiving: Formalise the sector, improve Centre-State coordination, and expand capacity building.
- National Caregiver Council (NCC): Apex body for regulation, accreditation, certification, registry, grievance redressal, and standards.
- Professionalise the Caregiving Workforce: Introduce NSQF-aligned certification, standard curricula, specialised geriatric, palliative, and dementia-care cadres, and caregiving modules in education and digital platforms.
- Promote Global Caregiver Mobility: Build G2G partnerships with Japan, Germany, the UK, and Australia, supported by ethical recruitment, language training, and reintegration.
- Strengthen Institutional Ecosystem: Strengthen RCI, NISD, Sector Skill Councils, National Centre for Ageing, and Regional Geriatric Centres, and standardise training.
- Extend Social Security: Provide health and accident insurance, coverage under the Unorganised Workers' Social Security Act, 2008, and support care entrepreneurship through Mudra and Startup India.
- Support Family and Community Care: Reduce women's unpaid care burden by strengthening family caregivers, SHGs, Ayushman Arogya Mandirs, and CSR-supported community care.
- Provide Caregiver Welfare: Introduce statutory care leave, respite care, workplace sensitisation, and counselling.
- Leverage Technology: Create a National Digital Caregiver Portal for registry, certified directory, background verification, multilingual training, and technology-enabled services.
- Societal Care Model: Sweden and Denmark follow shared responsibility among the State, families, communities, and the private sector.

Examine the role of the care economy in promoting inclusive growth, gender equality, and employment generation in India. — Mains Question

FACTS FOR UPSC

REPORT & INDICES

Oldest Dated Biosignature Evidence in Indian Rock

- A study published in the Proceedings of the National
- Academy of Sciences (PNAS) reported evidence of microbial
- life around 3.5 billion years ago in the Singhbhum Craton,
- eastern India.
- IND Discovery Site: Evidence was found in a carbon-bearing
- banded chert rock from Bhitardari in the Singhbhum
- Craton, which spans Jharkhand and Odisha.
- z Chert is a silica-rich rock capable of preserving organic
- material for billions of years.
- IND Singhbhum Craton: One of India's oldest geological
- formations, preserving records of crust formation from
- over 4 billion years ago.
- IND Zircon Dating: Four out of eight analysed zircons indicated
- an age of approximately 3.5 billion years, helping establish
- the rock's age.
- IND Carbon Isotope Evidence: Carbon isotope composition
- matched patterns linked to carbon fixation by living
- organisms, indicating biological origin.
- IND Organic Matter Analysis: The carbon was identified as
- degraded organic matter rather than later inorganic
- contamination, supporting evidence of ancient microbial
- activity.
- IND Significance: The discovery is among the oldest directly
- dated biosignature records of microbial life, based on
- multiple chemical and geological indicators. It provides
- insights into early evolution of life on Earth and the search
- for life on other habitable worlds.

India Becomes World's 2nd Largest Supplier of Seafarers

- According to the BIMCO-ICS Seafarer Workforce Report
- 2026, India has become the world's second-largest supplier
- of seafarers to the global shipping industry.
- IND Global seafaring workforce: ~2.57 million against demand
- of nearly 2.55 million, indicating shortage of qualified
- maritime professionals, especially officers.
- IND Factors Behind Growth: Expansion of maritime training
- institutes.
- 90
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- z Modernisation of maritime infrastructure.
- z Improved skill development programmes.
- z Alignment with international maritime standards.
- z Digitisation of certification and regulatory services by
- the Directorate General of Shipping (DGS).
- z Compliance with the International Maritime
- Organization (IMO) Convention on Standards of
- Training, Certification and Watchkeeping for Seafarers
- (STCW) enhanced global recognition of Indian
- seafarers.
- Indicator Data
- Total Indian seafarers 311,936
- Global share 12.16%
- Global rank 2nd -largest supplier
- Largest supplier Philippines
- Indian officers 140,718 (13.41% of global officers)
- Indian ratings 171,218 (11.29% of global ratings)
- IND Maritime Legislative Reforms: Inland Vessels Act, 2021,
- Merchant Shipping Act, 2025, Indian Ports Act, 2025,
- Coastal Shipping Act, 2025, Bills of Lading Act, 2025 and
- Carriage of Goods by Sea Act, 2025
- IND Mission 20%: Aims to increase India's share of global
- seafarers from 12.16% to 20%. Objective– ensure one out
- of every five global seafarers is Indian.

India's 1st Comprehensive Catalogue of Lepidoptera

- The Zoological Survey of India has completed India's first
- comprehensive Catalogue of Lepidoptera, covering butterflies
- and moths, after more than 12 years of research.
- IND Publication: A 22-volume authoritative inventory; final
- volume published in Zootaxa.
- IND Species Diversity: India has 13,703 species of butterflies
- and moths across 3,705 genera, 102 families and 31
- superfamilies.
- IND Global Share: Indian Lepidoptera represent about 8.25%
- of the world's known diversity.
- IND Geometroidea: India hosts 2,205 species, including 2,100
- Geometridae, 95 Uraniidae, nine Epicopeiidae and one
- Pseudobistonidae; Sematuridae is absent.
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- www.drishtiias.com
- IND Ecological Role: Act as pollinators, herbivores and
- detritivores and form an important food source for birds,
- bats and other insectivores.
- IND Significance: Provides a baseline for biodiversity
- assessment, climate studies, ecological monitoring and
- conservation planning.

Yale Environmental Performance Index 2026

- India's Rank: 176th of 177 countries, with a score of 22.46;
- above only Laos and 7th among 8 South Asian countries.
- Top Rank: Estonia, with 74.79.
- Key Points
- About EPI: Biennial index initiated in 2000.
- z Published by Yale Center for Environmental Law &
- Policy and CIESIN, Columbia University.
- z Tracks progress towards the SDGs, Paris Agreement
- and Kunming-Montreal Biodiversity Framework.
- India's Ranking Trend: 141st (2016) → 177th (2018) → 168th
- (2020) → 180th (2022) → 176th (2024 and 2026).
- z India has remained among the 5 worst-performing
- countries since 2022.
- Concerns: Poor performance in environmental health, air
- quality and biodiversity; decline in fisheries, tree cover and
- pesticide-pollution control.
- Relative Progress: Better performance in climate
- mitigation, waste management and sanitation.
- India's Criticism: EPI overlooks development level,
- population, historical emissions and CBDR (Common But
- Differentiated Responsibilities), and relies on
- extrapolations and simplified cross-country comparisons.
- Yale's View: It measures present environmental conditions,
- not future promises or historical responsibility.

India Improves Ranking in Structural and Pro-Competitive Reforms

- The Competere Foundation released the report "India's
- Next Growth Frontier: Reducing Anti-Competitive Market
- Distortions to Build on India's 2010–2023 Reform Progress".
- About: India rose 25 places in the Market Distortions
- Performance Index, from 82nd in 2010 to 57th in 2023.
- Assessment Framework: Measures progress in reducing
- market distortions and improving competitiveness.
- Key Pillars: Property-rights protection, Domestic
- competition, International competition
- Areas Covered: Competition policy, investment conditions,
- digital markets, and external regulatory barriers.
- Major Reform Drivers: GST unified indirect taxation and
- reduced interstate barriers.
- 91
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- IBC enabled time-bound insolvency resolution and
- improved credit discipline and capital allocation.
- Key Recommendations: Adopt evidence-based
- competition policy.
- z Review sector-specific investment restrictions.
- z Strengthen cooperation with like-minded trading
- partners.
- Significance: Continued reforms are needed to improve
- productivity, competitiveness, investment climate, and
- global integration.

AWARDS & HONOURS

Gallantry Awards 2026

- On 80th Independence Day, President Droupadi Murmu
- approved 78 Gallantry Awards.
- Awards included 9 Kirti Chakras (7 posthumous), 19
- Shaurya Chakras (1 posthumous), 36 Sena Medals for
- Gallantry (5 posthumous), 5 Bar to Sena Medals
- (Gallantry), 3 Nao Sena Medals for Gallantry and 5 Vayu
- Sena Medals for Gallantry.
- Gallantry Awards: Recognise exceptional bravery, courage
- and self-sacrifice by military personnel and civilians.
- z Wartime Gallantry Awards: Param Vir Chakra (highest
- military decoration), Maha Vir Chakra and Vir Chakra.
- z Peacetime Gallantry Awards: Ashoka Chakra, Kirti
- Chakra and Shaurya Chakra.
- Instituted in 1952 as Ashoka Chakra Class-I, II and
- III and renamed in 1967.
- Order of Precedence: Param Vir Chakra > Ashoka Chakra
- > Maha Vir Chakra > Kirti Chakra > Vir Chakra > Shaurya
- Chakra.
- Recommendation and Conferment Process:
- z Recommendations originate from military units, CAPFs
- or police organisations and pass through the chain of
- command.
- z Scrutinised by the Central Honours and Awards
- Committee and finally approved by the President of
- India.
- z Announced twice yearly on Republic Day and
- Independence Day.
- Additional Recognition: Repeated acts of similar gallantry
- are recognised through a Bar to the Chakra; both the
- original award and Bar can be conferred posthumously.

Fields Medal 2026

- The 2026 Fields Medals, among mathematics' highest
- honours, were awarded to Yu Deng, John Pardon, Jacob
- Tsimerman and Hong Wang for outstanding mathematical

- research.
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- Saraansh August 2026
- About: Established in 1936 through John Charles Fields,
- it is awarded by the International Mathematical Union for
- outstanding achievements and future promise in
- mathematics.
- Eligibility: Awarded every four years to 2–4 mathematicians
- below 40 years.
- Funding: Financed through the J.C. Fields Trust at the
- University of Toronto; the Fields Institute also supported
- the 2026 prize fund.
- 2026 Awards: Hong Wang became the third woman
- recipient after Maryam Mirzakhani (2014) and Maryna
- Viazovska (2022).
- z Yu Deng and Hong Wang became the first Chinese
- nationals to win since Shing-Tung Yau (1982).
- India's Position: Indian-origin mathematicians Manjul
- Bhargava (2014) and Akshay Venkatesh (2018) are
- previous recipients.
- Significance: Mathematical excellence supports advances
- in artificial intelligence, physics and engineering, reflecting
- growing scientific and technological capability.

IMPORTANT DAYS

154th Birth Anniversary of Aurobindo Ghose

- PM paid tribute to Sri Aurobindo on 15th August 2026.
- About: Born 15 August 1872, Calcutta; died 5 December
- 1950, Pondicherry. He was a yogi, philosopher, poet, seer
- and nationalist.
- z Passed the ICS examination but was not appointed
- after failing to appear for the compulsory horse-riding
- test.
- Contributions:
- z Revolutionary Career: Advocated radical nationalism
- and mass mobilisation before Gandhi's leadership.
- New Lamps for Old criticised the Congress'
- moderate policies.
- Arrested in the Alipore Bomb Case (1908);
- defended by Chittaranjan Das.
- z Spiritual and Philosophical: Established Sri Aurobindo
- Ashram (1926), Pondicherry.
- Collaborated with Mirra Alfassa (The Mother), who
- later founded Auroville.
- z Literary:
- Major works: The Life Divine, Savitri, Essays on the
- Gita, The Synthesis of Yoga and Defense of Indian
- Culture.
- Wrote for Bande Mataram and founded
- Karmayogin; associated with Jugantar and
- Anushilan Samiti.
- 92
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- Nominated for Nobel Prize in Literature (1943) and
- Nobel Peace Prize (1950).
- Legacy and Influence: Envisioned India as a leading
- spiritual and civilisational force, stressing cultural self-
- confidence and spiritual regeneration.

150th Birth Anniversary of Pingali Venkayya

- PM paid tribute to Pingali Venkayya on his 150th birth
- anniversary (2 August), recalling his contribution as the
- designer of India's National Flag and its role in patriotism and
- nation-building.
- Early Life: Born on 2 August 1876 in Krishna District, Andhra
- Pradesh; joined the British Army at 19, fought in the Second
- Boer War (1899-1902) in South Africa where he first met
- and formed a lasting association with Mahatma Gandhi.
- National Flag Design: Presented the Swaraj Flag on khadi
- to Gandhi at the 1921 INC session in Vijayawada. The
- original red-green flag represented Hindu and Muslim
- communities and carried the Gandhi Charkha; on Gandhi's
- suggestion, a white band for peace was added, while the
- charkha symbolised Swaraj and self-reliance.
- z The INC adopted the design in 1931, making it the basis
- of the modern Tricolour. In 1947, a Constituent
- Assembly ad hoc committee retained the 1931 tricolour
- but replaced the Charkha with the Ashoka Chakra. The
- present flag was adopted on 22 July 1947 and became
- the National Flag on 15 August 1947.
- National Movement: Active in the freedom struggle from
- 1906 to 1922, including the Vande Mataram and Home
- Rule movements.
- Polymath:
- z ' Japan Venkayya' - delivered a full-length speech in
- Japanese at Bapatla (Andhra Pradesh) in 1913.
- z 'Patti (Cotton) Venkayya' - known for agricultural
- research specifically on Cambodia Cotton.
- z 'Diamond Venkayya' - geology graduate; set records
- in diamond mining in Andhra Pradesh, wrote The

- Mother of Diamonds (1955), and served as an advisor
- to India's Mineral Research Department after
- Independence.
- Legacy: Worked as a plague inspector in Madras and
- Bellary, established an educational institution in
- Machilipatnam, received a commemorative postage stamp
- in 2009, and had AIR Vijayawada renamed in his honour
- in 2015.

Global Tiger Day

- Observed every year on 29 July.
- Origin: Established at St. Petersburg Tiger Summit (2010),
- where 13 Tiger Range Countries (TRCs) adopted St.
- Petersburg Declaration, launched Global Tiger Recovery
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- www.drishtiias.com
- Programme, and committed to the TX2 Goal of doubling
- wild tigers by 2022; the global goal was not fully achieved.
- 13 TRCs: Bangladesh, Bhutan, Cambodia, China, India,
- Indonesia, Laos, Malaysia, Myanmar, Nepal, Russia,
- Thailand, and Vietnam.
- Theme 2026: " Coexistence in Action: Scaling Solutions for
- People and Tigers"
- IUCN Initiative: Integrated Tiger Habitat Conservation
- Programme supports habitat restoration, anti-poaching
- and community-led coexistence across Asia.
- NTCA Eco-tourism Webpage (2026): NTCA launched an
- integrated platform for authentic safari and
- accommodation bookings, promoting responsible eco-
- tourism.
- India's Status: Tiger population reached 3,682 and Tiger
- Reserves increased to 58.
- Major Indian Initiatives:
- z Project Tiger, 1973: Protects wild tigers and their
- habitats.
- z NTCA: Statutory body under the Wild Life (Protection)
- Act, 1972.
- z All India Tiger Estimation: Conducted every four years
- using camera traps, GIS and M-STrIPES.
- z International Big Cat Alliance: India-led initiative for
- conserving seven big-cat species.
- Tiger
- Habitat: Rainforests, grasslands, savannas, mangrove swamps
- Protection Status:
- z IUCN Red List: Endangered; CITES: Appendix I; WPA 1972:
- Schedule I

DEFENCE & SECURITY

Exercise Udara Shakti 2026

- IAF participated in Exercise Udara Shakti 2026, a bilateral
- air exercise with the Royal Malaysian Air Force (RMAF) at
- Subang Airbase, Malaysia.
- Reflects India's growing defence cooperation with
- Southeast Asian partners under the Act East Policy and
- Indo-Pacific strategy - following the IAF's participation in
- Exercise Pitch Black 2026 in Australia.
- Other India–Malaysia Military Exercises:
- z Samudra Laksamana – Indian Navy
- z Exercise Harimau Shakti – Indian Army

MH-60R Seahawk Helicopter

- Indian Navy received another MH-60R Seahawk from
- the US, taking deliveries to 21 of 24 helicopters ordered.
- 93
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- MH-60R Seahawk Helicopter
- About: Also called "Romeo"; an all-weather, shipborne
- multi-role naval helicopter manufactured by Lockheed
- Martin.
- Primary Role: Designed mainly for Anti-Submarine
- Warfare (ASW) and Anti-Surface Warfare (ASuW).
- Advanced Sensors: Equipped with multi-mode radar,
- dipping sonar, sonobuoys, electro-optical/infrared
- sensors, electronic-support measures, datalinks and
- survivability systems.
- Weapons: Mk-54 lightweight torpedoes, AGM-114 Hellfire
- missiles, rockets and machine guns.
- Multi-Mission Capability: Can perform search and rescue,
- medical evacuation, surveillance and logistics-support
- missions.
- India's Procurement: India signed a deal with the US in
- 2020 for 24 MH-60Rs to replace the ageing Sea King fleet.
- z INAS 334 'Seahawks' commissioned at Kochi in March
- 2024.
- z INAS 335 'Ospreys' raised at Goa in December 2025.
- z India also signed a 5-year sustainment-support
- package under the US Foreign Military Sales
- programme.
- Significance: Strengthens India's anti-submarine warfare,
- maritime-domain awareness and shipborne aviation
- capability, while deepening India-US defence cooperation.

Exercise MAITREE-XV

- Indian Army contingent departed for Surat Thani,
- Thailand, for the 15th India–Thailand Joint Military Exercise
- MAITREE-XV (2026).
- Bilateral military exercise between the Indian Army and
- Royal Thai Army.
- Origin: Began in 2006 as TICAFE; renamed MAITREE
- ("Friendship") in 2013.
- Hosting: Conducted alternately in India and Thailand;
- resumed in 2024 after a five-year gap.
- Significance: Enhances interoperability, military
- cooperation and mutual trust; 2026 marks 20 years since
- its launch.

India Successfully Test-fires Agni-4 Ballistic Missile

- Recently, India successfully conducted the test launch of
- the Agni-4 medium-range ballistic missile from the Integrated
- Test Range (ITR), Chandipur, Odisha.
- The launch was carried out under the aegis of the Strategic
- Forces Command, which manages India's strategic nuclear
- forces.
- About: Agni-4 is an indigenously developed, intermediate-
- range, surface-to-surface ballistic missile belonging to
- India's Agni missile series.
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- 9
- Saraansh August 2026
- Features: Developed by the DRDO, Agni-IV is approximately
- 20 metres long, has a strike range of about 4,000 km and
- can carry a payload of around 1,000 kg.
- z The missile uses advanced avionics, onboard
- computers, inertial navigation and guidance systems
- to achieve high accuracy and maintain stability during
- flight.

INS Malvan Commissioned into the Indian Navy

- Indian Navy commissioned INS Malvan, the second
- indigenously designed and built Mahe-class Anti-Submarine
- Warfare Shallow Water Craft (ASW-SWC), at Karwar,
- Karnataka.
- Induction: Second of eight Mahe-class vessels being built
- by Cochin Shipyard Limited, Kochi, and the sixth of 16
- ASW-SWCs being inducted into the Navy.
- Legacy: Named after Malvan, Maharashtra, linked to
- Chhatrapati Shivaji Maharaj's maritime legacy; continues
- the name of a naval minesweeper that served until 2003.
- Capabilities: Detects, tracks and engages underwater
- threats in shallow waters; supports anti-submarine
- warfare, underwater surveillance, mine warfare, low-
- intensity operations, coastal defence and littoral security.
- Strategic Role: Protects harbour approaches, sea lanes,
- naval bases, ports and offshore installations, where larger
- warships may be less effective.
- Maritime Awareness: Operates with coastal surveillance
- systems, patrol aircraft, submarines and larger surface
- combatants to safeguard sea lines of communication and
- strategic waters.

SUMMITS & CONFERENCES

GI & Beyond 2.0 Summit (2026)

- The summit was organised by office of the Development
- Commissioner (Handlooms), Ministry of Textiles in association
- with Handloom Export Promotion Council (HEPC).
- Venue: Dr. Ambedkar International Centre, New Delhi.
- Objective: To promote GI-tagged handloom and handicraft
- products, strengthen the GI ecosystem, and expand market
- opportunities for artisans and weavers.
- Key Highlights
- Digital Handloom Atlas – "One Platform. Endless Markets"
- launched
- z A digital platform to showcase India's handloom
- products, including GI-tagged products.
- z Aims to improve visibility, connect weavers with
- domestic and international markets, and enhance
- market access.
- 94
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- New GI Certificates presented for: Ladakh Nambu Textile,
- Ladakh Pashmina Textile, Himachal Gudma, Himachal
- Lingchay, Jharkhand Bamboo Craft, Jharkhand Tussar Silk
- Saree & Fabrics, Munda Jewellery of Jharkhand, Bareilly
- Terracotta
- Exhibition: Displayed 100+ GI-registered handloom and
- handicraft products from across India.
- z Included live demonstrations by artisans showcasing
- traditional craftsmanship.

PLACES IN NEWS

Hara Mangrove Forests

- Oil residues have reached parts of the Hara mangrove

- forests around Iran's Qeshm Island, threatening the protected
- ecosystem amid conflict and shipping-related spills in the
- Persian Gulf.
- Hara Forests
- IND Location: Around Qeshm Island and the Khuran Strait,
- near the Strait of Hormuz.
- IND Flora: Dominated by grey mangrove (Avicennia marina),
- adapted to saline waters through specialised salt-filtering
- roots.
- IND Biodiversity: Important breeding, nursery and feeding
- habitat for fish, shrimp, crabs and other marine species;
- also supports migratory birds, marine mammals and
- critically endangered hawksbill sea turtles.
- IND UNESCO Status: Part of the UNESCO-designated Hara
- Biosphere Reserve.
- IND Importance: Supports local fishing communities and
- nature-based tourism, including mangrove boat tours.

China's Antelope Reef Base

- Satellite imagery shows China has completed the first
- phase of land reclamation and infrastructure development
- at Antelope Reef in the disputed Paracels archipelago,
- indicating further military consolidation in the South China
- Sea.
- IND Infrastructure Developed: The reclaimed island spans
- nearly 6 km and includes:
- z Helicopter pad.
- z 680-metre wharf adjoining a deep-water harbour.
- z 3-km straight coastline, assessed as a potential military
- runway.
- IND China's Position: China has not acknowledged a new
- military base and says development serves civilian
- purposes, including weather forecasting and scientific
- research.
- IND The 'Bastion' Strategy: Antelope Reef could help create a
- protected maritime "bastion" for China's nuclear-armed
- ||
- 9
- www.drishtiias.com
- ballistic missile submarines, shielding them from US and
- Vietnamese naval operations.
- IND The Territorial Dispute: Vietnam claims the entire Paracel
- Islands, while China has exercised de facto control since
- 1974, following the Battle of the Paracel Islands.
- z The South China Sea has overlapping claims involving
- China, Vietnam, the Philippines, Malaysia, Brunei and
- Taiwan.
- z China's Nine-Dash Line claims were rejected by the
- 2016 South China Sea Arbitral Tribunal, which held
- that claims to historic rights beyond UNCLOS maritime
- entitlements have no legal basis.
- IND Potential Militarization Impact on India: More than 55%
- of India's maritime trade passes through the South China
- Sea and Malacca Strait; increased militarisation can
- threaten Sea Lines of Communication (SLOCs).
- z China's naval consolidation supports its Maritime Silk
- Road and enables greater power projection into the
- Indian Ocean, challenging India's role as a net security
- provider in the Indian Ocean Region.

Black Sea

- Russian attacks on Ukraine's Black Sea ports and shipping
- infrastructure have disrupted agricultural exports during peak
- wheat harvest season. Around 90% of Ukraine's wheat, corn
- and sunflower seed exports move through the Black Sea.
- Black Sea
- IND About: Major inland sea between Eastern Europe and
- Western Asia, connected to the Atlantic Ocean through
- the Mediterranean Sea, historically called the Euxine Sea
- (Pontus Euxinus).
- IND Bordering Countries (BURGeR-T): Bulgaria, Ukraine,
- Russia, Georgia, Romania, Türkiye.
- IND Connection with the Mediterranean: Black Sea →
- Bosphorus Strait → Sea of Marmara → Dardanelles Strait
- → Aegean Sea → Mediterranean Sea.
- IND Turkish Straits System: Bosphorus Strait + Sea of Marmara
- + Dardanelles Strait.
- IND Connection with the Sea of Azov: Through the Strait of
- Kerch.
- IND Surrounding Mountains: Pontic Mountains in the south,
- Caucasus Mountains in the east and Crimean Mountains
- in the north.
- IND Major Inflowing Rivers: Danube, Dnieper and Dniester.
- The Danube, Europe's second-longest river after the Volga,
- enters through the Danube Delta.
- IND Economic Importance: Major route for grain, fertilisers,
- energy products and other commodities, making it
- important for global trade and food security.
- 95
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- IND Role in the Russia–Ukraine War: Russia seeks to restrict
- Ukrainian maritime access, while Ukraine has challenged

- Russian naval power using anti-ship missiles, drones and
- other asymmetric methods.

India's First Telecom Manufacturing Zone in Gwalior

- Gwalior's Telecom Manufacturing Zone (TMZ) secured
- fresh commitments of ₹2,000 crore, taking total committed
- investment to ₹5,500 crore.
- About: India's first dedicated telecom manufacturing
- cluster, planned as a globally competitive, end-to-end
- telecom manufacturing ecosystem in Gwalior.
- Objective: Transform India from a telecom services-led
- economy into a products and manufacturing hub under
- "Make in India, Make for the World" through domestic
- value addition, indigenous intellectual property and
- exports.
- Integrated Ecosystem: Covers design, R&D, testing,
- manufacturing, semiconductors, optical fibre, telecom
- equipment, electronic components and allied industries,
- supported by common plug-and-play testing facilities.
- Employment: Expected to generate more than 18,000 jobs.
- Strategic Advantages: Central location, connectivity, skilled
- workforce, competitive costs, industrial base and improved
- logistics, including the upcoming Agra-Gwalior Greenfield
- Expressway.
- Implementation: A Special Purpose Vehicle comprising the
- Department of Telecommunications and MP Government,
- with State support for land, capital, skills, employment-
- linked incentives and logistics.

Nauru Renamed as Republic of Naoero

- The Pacific island nation Nauru adopted its indigenous
- name, the Republic of Naoero, to reaffirm cultural identity,
- linguistic heritage and national pride.
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- Saraansh August 2026
- Northeast of Australia; coral-limestone island of
- about 21 sq km. World's smallest island country;
- Location & Size population about 12,000; third-smallest country
- by population and land area after Vatican City and
- Monaco.
- International code:
- Identity Changes
- NRU → NRO; citizens: dei-
- Naoero instead of Nauruans. Aircraft, ships and
- official records will adopt the revised name.
- Known as Pleasant Island; annexed by Germany in
- 1888; administered by Australia, Britain and New
- Colonial History
- Zealand; occupied by Japan during World War II;
- later a UN trusteeship; independent since 1968.
- Naoero was altered because colonisers found the
- indigenous pronunciation difficult;
- Origin of "Nauru"
- "Nauru" entered
- official use during German rule and continued after
- independence.
- Renaming seeks to
- Language &
- Recognition
- protect dorerin Naoero,
- classified by UNESCO as severely endangered.
- Countries and international organisations were
- notified; the UN and several governments have
- begun using Naoero.
- Reflects decolonisation through reclaiming
- Significance indigenous names, similar to Eswatini, Türkiye and
- the Micronesian State of Chuuk.

Glaw Lake: India's 101st Ramsar Site

- Glaw Lake in Arunachal Pradesh became India's 101st
- Ramsar Site and the State's first wetland of international
- importance, increasing India's Ramsar network from 26 sites
- in 2014 to 101 in 2026.
- Location: Pristine freshwater lake within Kamlang Tiger
- Reserve and Wildlife Sanctuary in the Eastern Himalayas.
- Physical Features: Fed by perennial mountain streams and
- surrounded by dense natural vegetation.
- 96
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- Biodiversity: More than 150 tree species and 49 orchid
- species occur in the wetland and its catchment.
- Significance: Supports biodiversity conservation, climate
- resilience, water conservation and sustainable livelihoods.

Ceuta

- Spain's autonomous city of Ceuta faced a major migration
- crisis in July 2026, when nearly 60,000 migrants attempted to
- enter the Spanish enclave from Morocco.
- Location: Spanish autonomous city on Africa's northern
- Mediterranean coast, bordering Morocco and facing the
- Strait of Gibraltar; area about 18.5 sq. km.

- European Territories in Africa: Ceuta, Melilla and the
- Plazas de Soberanía—Chafarinas Islands, Alhucemas
- Islands and Peñón de Vélez de la Gomera—are the only
- European territories on the African mainland.
- Sovereignty Dispute: Spain exercises sovereignty, while
- Morocco has sought their return since its independence
- in 1956.
- Geographical Significance: Located at the eastern entrance
- of the Strait of Gibraltar, a major chokepoint connecting
- the Atlantic Ocean and Mediterranean Sea.
- z It forms one of the EU's only two land borders with
- Africa; the other is Melilla.
- z Important for maritime security, trade and migration
- management, and among the shortest entry routes into
- Europe for migrants from Africa and West Asia.
- Key Issues: Hotspot for irregular migration, trafficking and
- humanitarian crises; also fuels Spain–Morocco tensions
- and raises the challenge of balancing border security with
- refugee and human-rights obligations.

Shipki La Pass

- Cross-border trade between India and China through
- Shipki La resumed on 1 August 2026 after a six-year Covid-19-
- related suspension.
- Location: High-altitude pass above 4,000 m in Kinnaur
- district, Himachal Pradesh, on the India–China border with
- the Tibet Autonomous Region.
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- www.drishtiias.com
- Earlier Name: Known as Pema La or Shared Gate; renamed
- Shipki La by the Indo-Tibetan Border Police after 1962.
- Terrain: The Sutlej (Langqen Zangbo in Tibet) enters India
- through this region. The 28-km Namgia–Shipki La stretch
- is barren, and heavy winter snowfall closes the pass.
- Strategic Importance: Indian positions lie at a higher
- elevation than those on the Chinese side; the area also
- contains buildings used by Indian security agencies.
- Historical Significance: Part of the ancient Silk Route.
- Before Independence, Tibetan traders used Shipki La and
- the old Hindustan–Tibet Road to reach Rampur Bushahr,
- especially for the Lavi Fair.
- Trade History: Closed after the 1962 India–China War and
- reopened in the early 1990s under a bilateral agreement.
- Trade generally operates for a few months from June after
- the snow recedes.
- Trade Items: Imports include wool, livestock, yak products,
- religious items and minerals; exports include grains, spices,
- tobacco, timber and metal tools.
- Distinctive Feature: Trade traditionally follows a barter
- system, unlike Lipulekh and Nathu La, where transactions
- use currency.

Stone Age Tool, Sangam Workshops Unearthed in Tamil Nadu

- Excavations at Malayadipatti, near Karivalamvanthanallur
- in Tenkasi district, revealed a long-lived settlement along the
- Vaippar River.
- Excavation: TN State Department of Archaeology has
- opened 18 trenches since April as part of its wider
- archaeological programme, which also includes Keeladi.
- Cultural Sequence: Continuous occupation from the
- Microlithic period through the Iron Age and into Early
- Historic and Historic periods, with no clearly identifiable
- Neolithic or Chalcolithic phases.
- 97
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- Major Finds: Microlithic tools, iron implements, hematite,
- glass and coral beads, shell bangles, terracotta figurines,
- spindle whorls, gaming pieces, copper coins, graffiti-
- marked pottery and black-and-red ware.
- Structural Evidence: An 8.7 × 4.2 metre brick structure
- with steps may have been an underground granary or
- rainwater-harvesting tank - reflecting advanced
- construction and water-management practices.
- Burial Evidence: A red-slipped burial pot decorated with
- painted peacocks, along with human teeth and a black-
- and-red ware vessel, suggests ritual burial practices that
- may also have links with references to peacocks in Sangam
- literature.
- Craft and Trade: Iron-tool making, bead and shell-bangle
- production, and weaving suggest an organised production
- centre connected with east–west coast trade routes.
- Significance: Highlights Tamil Nadu's antiquity, advanced
- technology and economic vitality and the settlement
- developed from the Stone Age to the Sangam period.

Qeshm Island

- The US struck IRGC military infrastructure on Iran's
- Qeshm Island, citing threats to American forces and maritime
- security.
- Location: Largest island in the Persian Gulf, at the mouth
- of the Strait of Hormuz, in Iran's Hormozgan Province near
- Bandar Abbas; separated from mainland Iran by the

- Khuran/Clarence Strait.
- Key Ecological Features:
- z Qeshm Geopark: Middle East's first UNESCO-recognised
- geopark; includes the Valley of Stars, Chahkuh Gorge
- and Namakdan Salt Cave.
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- Saraansh August 2026
- z Hara Mangroves: Important breeding ground for
- migratory birds.
- z Namakdan Salt Cave: Among the world's longest salt
- caves, extending over 6 km.
- Strategic Importance: Helps Iran monitor and project
- power across the Strait of Hormuz, through which around
- 20% of global oil and LNG trade passes.
- z Hosts IRGC radar systems, drone facilities, missile
- batteries, naval assets, and coastal surveillance
- infrastructure.

Pickaxe Mountain

- The US threatened military strikes on Iran's Pickaxe
- Mountain amid reports that it may house deep-underground
- nuclear facilities linked to Iran's nuclear programme.
- The development revived debate over India's decision not
- to launch a pre-emptive strike on Pakistan's Kahuta
- nuclear facility in the 1980s.
- Pickaxe Mountain
- Geographical Setting: Located about 220 km south of
- Tehran, near Natanz, in the Karkas Range, which extends
- over 100 km between Kashan and Ardestan.
- Tectonic Origin: Part of the Urumieh-Dokhtar magmatic
- belt, formed by the subduction of the Neo-Tethyan Ocean
- before the Arabia-Eurasia collision.
- Rock Composition: Dominated by hard volcanic rocks such
- as andesite, rhyolite and dacite, along with pyroclastic
- deposits and volcanic tuffs.
- Structural Complexity: Faults, fractures and varying rock
- densities disperse shock waves, making blast modelling
- and military penetration difficult.
- Strategic Advantage: Deep underground shielding and
- strong volcanic rock increase the difficulty of kinetic strikes,
- strengthening Iran's strategic position near the Strait of
- Hormuz.
- India's Kahuta Dilemma and Nuclear Restraint
- Pokhran-I (1974), code-named Smiling Buddha, prompted
- Pakistan to accelerate its nuclear programme centred on
- the Kahuta uranium enrichment facility.
- In 1981, the Indian Air Force examined the feasibility of a
- pre-emptive strike on Kahuta, but no official strike plan
- was confirmed.
- India chose strategic restraint, while Pakistan acquired
- nuclear capability by the late 1980s, altering South Asia's
- strategic balance.
- India and Pakistan signed the Agreement on the
- Prohibition of Attack against Nuclear Installations and
- Facilities, 1988.
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- Since 1992, both countries have annually exchanged lists
- of their nuclear installations.
- India currently follows credible minimum deterrence and
- strategic restraint, while strengthening air and missile
- defence through Project Kusha and Sudarshan Chakra.

PORTALS & APPS

Centralised Public Grievance Redress and Monitoring System (CPGRAMS)

- The CPGRAMS has emerged as the Government's
- flagship digital grievance-redressal platform through citizen-
- centric service delivery.
- About: CPGRAMS is the Government's flagship 24×7 digital
- grievance-redressal platform, connecting Central
- Ministries/Departments, States and UTs for lodging and
- tracking public-service grievances.
- Evolution: Since 2014, it has shifted from a largely manual
- to a technology-driven system:
- z Annual grievances: 3.01 lakh (2014) → ~27 lakh (2024).
- z Grievance Redressal Officers: 10,232 → over 1.11 lakh
- (2025).
- Access Channels: CPGRAMS portal, mobile app, UMANG,
- post and 5+ lakh Common Service Centres, supported by
- ~ 2.5 lakh Village Level Entrepreneurs.
- Technology: Uses auto-routing, grievance categorisation,
- unique registration IDs, escalation, citizen feedback and
- appellate review for greater accountability and
- transparency.
- Samadhan Didi: Launched May 2026; an AI-enabled voice
- chatbot integrated with BHASHINI that enables speech-
- based grievance registration in preferred languages and
- automatically identifies the relevant Ministry/Department/
- category.
- NextGen CPGRAMS: Being developed by DARPG with AI-

- based routing, support for 22 Scheduled Languages,
- omni-channel registration, automated escalation,
- accessibility features and real-time analytics.

SPECIES IN NEWS

India's 'Peacock Diplomacy' at the United Nations

- India donated 5 Indian male peafowls to the United
- Nations Office at Geneva (UNOG), highlighting biodiversity
- heritage, multilateralism and international cooperation.
- Gift: Four blue peafowls + one white-feathered male,
- reflecting the UN's blue and white colours.
- z Second such Indian gift to UNOG; in 1981, PM Indira
- Gandhi sent a breeding pair of peafowls from Delhi Zoo.
- Ariana Park: 46-hectare park around UN Geneva; has
- hosted peacocks for over a century. It was the estate of
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- www.drishtiias.com
- Swiss art collector Gustave Revilliod, bequeathed to
- Geneva in 1890.
- Soft Power: The gesture is described as "Peacock
- Diplomacy", comparable to China's "Panda Diplomacy",
- reinforcing India's peaceful and multilateral image.
- Cultural Significance: Indian peacock is India's National
- Bird, symbolising grace, beauty and resilience; the gift also
- highlights biodiversity conservation and environmental
- stewardship.
- Indian Peafowl
- Aspect Detail
- Taxonomy
- Pavo cristatus; family Phasianidae. Male =
- peacock; female = peahen.
- Male: metallic-blue plumage and long train with
- Sexual Dimorphism ocelli; female: muted brown plumage aiding
- camouflage during ground nesting.
- Native to Indian subcontinent; dry deciduous
- Habitat forests, scrublands, semi-desert, agricultural and
- human-dominated landscapes.
- Mainly ground-dwelling by day; roosts in trees
- Behaviour
- at night.
- Omnivorous: seeds, fruits, insects, small mammals
- Diet/Ecology and reptiles including small snakes; contributes to
- natural pest control.
- IUCN: Least Concern; Wildlife (Protection) Act,
- Conservation
- 1972: Schedule I; CITES: Appendix III.

Scientists Develop IoT-Based Health Tracker for Yaks

- An IoT -based smart collar has been developed to monitor
- the health, stress levels, and movement of high-altitude yaks
- in remote Himalayan grazing areas near the international
- border.
- About: The Indian yak (Bos grunniens), "ship of the
- Himalayas ", is a high-altitude bovine valued for its ability
- to survive extreme cold and difficult terrain.
- Distribution: ~58,000 in India; ~50% in Ladakh; also in
- Arunachal Pradesh, Sikkim, Himachal Pradesh, Uttarakhand.
- Wild yaks mainly on Tibetan Plateau.
- Habitat: High-altitude alpine meadows, alpine steppes,
- and desert steppes, generally 3,200-5,400m. They prefer
- cold plateaus and may migrate seasonally.
- Physical Features: Wild male weigh up to 1,000 kg, while
- females weigh ~300 kg. They have long blackish-brown
- hair, curved horns, broad hooves, large lungs, a high red
- blood cell count, and high haemoglobin concentration,
- enabling them to survive in low-oxygen environments.
- Behaviour: Daytime grazers; females and calves form large
- herds, males solitary.
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- Diet: Grasses, shrubs, mosses, lichens.
- Reproduction and Lifespan: Mating season begins in
- September, & calves are born in June after a gestation
- period of ~9 months. Females generally produce one calf
- every two years, lifespan ~25 years.
- Conservation Status (Wild Yak)(Bos mutus):
- z IUCN Red List: Vulnerable
- z CITES: Appendix I
- z Wildlife Protection Act, 1972: Schedule I

MISCELLANEOUS

Helicase: The DNA Separator

- Recent research has clarified how replicative helicases
- initiate DNA replication, particularly the activation of MCM2–
- 7 complexes into CMG helicases.
- About Helicase: Enzyme that unwinds and separates the
- two DNA strands, enabling replication.
- Need for DNA Unwinding: DNA strands in the double helix
- are held together by hydrogen bonds and must separate
- before copying.

- ind ATP-Driven Activity: Replicative helicases are loaded at or
- near replication origins and move along DNA using energy
- from nucleotide hydrolysis.
- ind Breaking Base-Pair Interactions: Helicase disrupts
- interactions between complementary bases, exposing the
- individual DNA strands.
- ind Formation of Replication Fork: Unwinding creates a
- Y-shaped replication fork, where parental strands become
- available to replication machinery.
- ind Role of Topoisomerases: Helicase activity creates torsional
- stress and supercoiling ahead of the fork; topoisomerases
- relieve this stress and prevent excessive twisting or DNA
- damage.
- ind Template for New DNA: Each separated parental strand
- acts as a template for synthesis of a complementary
- strand.
- ind Regulation of DNA Replication: Replication is tightly
- controlled during the cell cycle.
- z Recent research shows how inactive MCM2–7 double
- hexamers are remodelled into active CMG helicases,
- linking helicase activation with initial DNA melting and
- unwinding.

District Collectors to Grant Citizenship Under Section 6B

- MHA has amended the CAA citizenship-processing
- framework, transferring pending applications from
- Empowered Committees and District-Level Committees to
- District Collectors in specified States and UTs.
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- 10
- Saraansh August 2026
- ind Citizenship (Third Amendment) Rules, 2026: Authorise
- District Collectors to receive, scrutinise and dispose of
- applications for registration or naturalisation under Section
- 6B of the Citizenship Act, 1955.
- ind CAA Eligibility: Covers Hindus, Sikhs, Buddhists, Jains,
- Parsis and Christians from Afghanistan, Bangladesh and
- Pakistan who entered India on or before 31 December
- 2014 and fulfil prescribed conditions.
- ind Areas Covered: Gujarat, Rajasthan, Punjab, West Bengal,
- Assam, Tripura, J&K, and Ladakh.
- ind Exclusion of Protected Areas: Sixth Schedule tribal areas
- of Assam, Meghalaya, Mizoram and Tripura.
- z Areas under the Inner Line.
- z Thus, tribal areas of Assam and Tripura are excluded
- from the new arrangement.
- ind Powers of Collector: Receive applications electronically.
- z Verify documents and conduct enquiries.
- z Assess eligibility under Section 6B.
- z Administer the Oath of Allegiance.
- z Grant citizenship by registration or naturalisation if the
- applicant is eligible and a "fit and proper person."
- ind Grounds for Rejection: Application may be rejected if the
- applicant, despite reasonable opportunities, fails to appear
- personally, subscribe to the application or take the Oath
- of Allegiance.
- ind Significance: Makes the District Collector the key
- competent authority for CAA applications in notified
- regions, replacing the earlier multi-agency mechanism and
- aiming for more direct and efficient processing.

India Under US Scrutiny Over Alleged Chinese Transshipment and Tariff Evasion

- A White House report, 'The Great Transhipment Scam',
- alleges that India and other countries are enabling Chinese
- exporters to evade US tariffs by routing goods through third
- countries.
- ind India has been placed in Tier 1, alongside Canada, EU,
- Japan and Mexico, among over 40 jurisdictions identified
- as having elevated transshipment risk.
- ind Context of US-China Tariff War: The US imposed tariffs of
- up to 100% on Chinese goods under Section 301 of the
- Trade Act, 1974.
- z Chinese exporters allegedly began routing goods
- through third countries to conceal origin and reduce
- tariff liability.
- z The report highlights the Pune-Gujarat-Chennai
- production belt for absorbing Chinese industrial goods.
- ind Transshipment: Goods are routed through a third country
- where limited assembly, repackaging, relabelling or
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- documentation changes may make them appear to
- originate there.
- z Chinese exporters allegedly use "screwdriver factories"
- for minimal assembly to exploit tariff differentials and
- alter the apparent country of origin.
- ind Scale and Impact: Around USD 67 billion of US-bound
- goods were estimated to have been transshipped through
- Mexico, India and Vietnam in 2025.
- z Estimated loss of US tariff revenue: USD 28 billion.
- ind Compounding Trade Frictions: The issue adds pressure to
- India-US trade relations.
- z It follows a 10% US tariff on India citing forced-labour

- compliance gaps.
- z It also comes amid proposed US legislation threatening
- tariffs of up to 100% on countries importing Russian
- oil.

India's 1st Guide to Grasslands and Other Open Natural Ecosystems

- India's first-ever Guide to Grasslands and Other Open
- Natural Ecosystems (ONEs) of India, launched at UNCCD
- COP17, Ulaanbaatar, Mongolia.
- IND Coverage: Documents grasslands, savannas, deserts,
- scrublands, ravines and rocky plateaus across India.
- IND Key Landscapes: Includes Terai and Himalayan grasslands,
- Thar, Banni, Deccan savannas, Aravalli scrublands, Yamuna-
- Chambal ravines and Western Ghats rocky plateaus.
- IND Ecological Role: ONEs support biodiversity, carbon
- sequestration, soil-water processes and climate resilience;
- habitat for Great Indian Bustard, floricans, Indian wolf and
- blackbuck.
- IND Livelihood Role: Sustain pastoral and livestock-dependent
- communities, including traditional Orans and gauchars.
- IND Conservation: Promotes science-based restoration,
- landscape planning and India's Land Degradation
- Neutrality (LDN) goals.
- IND Prepared By: Developed under MoEFCC, with partners
- including ATREE and IUCN.

BRICS Condemns EU Carbon Tax

- At the 12th BRICS Environment Ministers' Meeting, New
- Delhi, members opposed the EU's Carbon Border Adjustment
- Mechanism (CBAM) and called for urgent scaling-up of
- adaptation finance by developed countries ahead of COP31.
- IND BRICS termed CBAM a "unilateral, punitive, discriminatory
- and protectionist" measure that could undermine
- developing countries' climate-resilience efforts.
- IND CBAM Scope: Entered definitive phase on 1st January 2026.
- z Covers iron & steel, aluminium, cement, fertilisers,
- hydrogen and electricity; importers must account and
- pay for their embedded carbon emissions.
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- www.drishtiias.com
- z EU says CBAM prevents carbon leakage.
- z Part of EU's "Fit for 55" package, targeting at least 55%
- GHG-emission reduction by 2030 from 1990 levels.
- IND Impact on India: Iron and steel constitute ~90% of India's
- exports to the EU covered under CBAM.
- z June 2026 Nature Climate Change analysis: High-
- emission Indian steel firms saw declines in EU export
- quantities and revenues, while lower-emission firms
- maintained exports.
- IND Demand for Adaptation Finance: BRICS demanded finance
- that is "new, additional, predictable, adequate and
- accessible."
- z Favoured grants and concessional finance to prevent
- greater debt burdens on developing countries.
- z Called on developed countries to honour the climate
- commitment to triple adaptation finance to developing
- countries by 2035.
- z Adaptation finance supports water security, climate-
- resilient agriculture, infrastructure, disaster
- preparedness and resilient livelihoods; mitigation
- finance focuses on reducing GHG emissions.

Gyan Bharatam Mission

- Parliamentary Standing Committee on Transport,
- Tourism and Culture flagged the slow pace of manuscript
- digitisation under the Gyan Bharatam Mission.
- IND Current Progress: Only about 7.5 lakh manuscripts
- digitised so far; interim target is 20 lakh by 31 March 2027.
- IND About: Announced in Union Budget 2025-26 to preserve,
- digitise and disseminate India's manuscript heritage.
- z Approved as a Central Sector Scheme for 2025-31 with
- an outlay of ₹491.66 crore.
- IND Background: Builds on the National Mission for
- Manuscripts (2003), which documented 44.07 lakh+
- manuscripts in the Kriti Sampada repository.
- IND Digital Repository & Target: Seeks to create a National
- Digital Repository (NDR) and digitise 1 crore manuscripts
- by 2030.
- IND Significance: Links manuscript heritage with education,
- research, digital access and global knowledge exchange,
- supporting "Virasat aur Vikas" and Viksit Bharat @2047.

West Nile Fever

- Recently, health authorities issued a caution following
- suspected cases of West Nile fever (WNF) in Ernakulam
- district, Kerala.
- IND Cause: Caused by West Nile virus (WNV), a positive-sense
- single-stranded RNA virus of Flaviviridae family and
- Orthoflavivirus genus.
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- IND Transmission: Mainly through bites of infected mosquitoes.

- Casual human-to-human transmission is not documented;
- rare transmission occurs through blood transfusion, organ
- transplantation, laboratory exposure and mother-to-child
- transmission.
- IND Vector and Reservoir: Birds are principal reservoir hosts;
- Culex mosquitoes are the main vectors and are most active
- at night.
- IND Symptoms: Around 80% asymptomatic, 20% symptomatic
- and less than 1% develop neuroinvasive disease.
- Incubation period is usually 2–6 days, ranging up to 14
- days.
- IND Geographical Distribution: Found mainly in Africa, Europe,
- Middle East, North America and West Asia.
- z First isolated in West Nile district, Uganda, in 1937;
- detected in birds in the Nile Delta in 1953.
- IND Diagnosis and Treatment: Confirmed through laboratory
- testing with assessment of symptoms and mosquito
- exposure. No licensed human vaccine or specific antiviral
- treatment.
- IND Prevention: Prevent mosquito bites and eliminate
- mosquito breeding sites.

Centre Relaxes Construction Rules Along Ganga Floodplains

- The Government issued the River Ganga Authorities
- Order, 2026, amending the 2016 framework notified under
- the Environment Act, 1986, which supports the Namami
- Gange Programme.
- IND Removal of Blanket Ban: The earlier blanket "construction-
- free zone" has been replaced with a stratified, approval-
- based framework, easing restrictions while retaining
- safeguards.
- IND Floodplain Zones: Based on Central Water Commission
- (CWC) guidelines:
- z Active Flood Plain: Submerged at least once every 5
- years; strict construction prohibition continues, with
- limited exceptions for temporary structures such as
- religious events.
- z Regulatory Zone: Flooded once every 5–25 years;
- construction permitted with official clearance.
- z Warning Zone: Flooded once every 25–100 years;
- construction permitted with clearances.
- IND Approval Mechanism: Riverfront infrastructure, bridges,
- roads and similar works still require prior approval from
- the NMCG and regional authorities.
- IND Government View: The amendment clarifies the previously
- undefined term "active floodplain" and, according to the
- government, does not dilute environmental safeguards.
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- Saraansh August 2026
- IND Concern: The 2016 blanket ban had often been invoked
- before the National Green Tribunal (NGT) to stop
- potentially harmful riverfront works and embankments,
- raising concerns about future ecological impacts.

Government Adds 11 More International Ports for E-Visa Holders

- The Government notified 11 additional international
- entry points for foreign nationals holding valid e-Visas,
- expanding India's electronic visa network.
- IND New Entry Points: 9 land ports —Agartala, Darranga, Gede,
- Ghojadanga, Haridaspur, Jaigaon, Dawki, Moreh and Attari
- (Road)—and 2 airports at Bhopal and Tirupati.
- IND Total Network: Authorised e-Visa entry points increased
- to 88 —37 airports, 38 seaports and 13 land ports.
- IND Objective: Liberalise, streamline and simplify the visa
- regime, facilitate legitimate foreign travel and improve
- e-Visa accessibility.
- IND Background: India introduced the e-Visa with Electronic
- Travel Authorisation (ETA) in 2014 for 43 countries and
- later expanded it to citizens of 172 countries.
- z Eligible foreign nationals receive an ETA before arrival,
- simplifying pre-entry approval.
- IND Coverage: The e-Visa facility covers 17 sub-categories,
- including tourist, business, medical, student,
- mountaineering, transit, miscellaneous and group visitor
- visas for cruise travellers.
- IND Digital Efficiency: Around 95% of e-Visa applications are
- processed within 72 hours, while about 78% of all Indian
- visas issued are electronic.
- IND Significance: Improves access through airports and land
- borders, supports tourism and business travel, and
- strengthens technology-based border management with
- security safeguards.

CBDC-Based DBT for Food Subsidies

- Recently, the Government of India launched a CBDC -
- based DBT system for food subsidies under the Pradhan
- Mantri Garib Kalyan Anna Yojana (PMGKAY).
- IND About: Chandigarh and Dadra & Nagar Haveli became the
- first UTs to provide food subsidy to all eligible PMGKAY
- beneficiaries through programmable e₹ tokens.
- IND Mechanism: Eligible beneficiaries receive the subsidy

- directly in their CBDC wallets instead of conventional bank-
- account transfers.
- IND Background: It builds on earlier CBDC-based welfare pilots
- in Puducherry and Gujarat and marks complete digital
- adoption among eligible beneficiaries in the two UTs.
- IND Key Features: Enables secure, real-time and end-to-end
- traceable transactions, allowing better monitoring of
- subsidy transfers and utilisation.
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- IND Objectives: Reduce leakages, diversion and cash handling
- while enabling faster, transparent and secure welfare
- delivery.
- IND Significance: Promotes financial inclusion through simple
- wallet-based transactions and demonstrates the Digital
- Rupee's potential for large-scale welfare delivery and
- future payment systems.

SC Clarifies the Scope of Police Remand Under the BNSS

- SC, in State of Andhra Pradesh v. Suda Suresh Veera
- Venkata Naga Raju, clarified that Section 187(2) of the BNSS,
- 2023 permits police custody in parts during the first 40 or 60
- days of detention, subject to an overall limit of 15 days,
- depending on the applicable 60-day or 90-day detention
- period.
- IND Change from CrPC: Under Section 167 of the CrPC, 1973,
- police custody was restricted to the first 15 days of
- remand.
- IND Purpose of Extended Window: It allows police custody
- when fresh facts, discoveries or investigative leads emerge
- later during investigation.
- IND No Absolute 15-Day Cut-off: A Magistrate or court cannot
- impose an absolute, non-extendable cut-off preventing
- further police custody within the statutory 40/60-day
- window.
- IND Detention Period (Sections 58 & 187 BNSS): A person
- ordinarily cannot be kept in police custody beyond 24 hours
- without a Magistrate's authorisation.
- z If investigation cannot be completed, a Magistrate may
- authorise detention up to 90 days for offences
- punishable with death, life imprisonment or
- imprisonment of 10 years or more, and 60 days for
- other offences.
- z After expiry of the applicable period, the accused is
- entitled to default bail, if prepared to and does furnish
- bail.
- IND Right to an Advocate (Section 38 BNSS): An arrested
- person may meet an advocate during interrogation, but
- this does not require continuous physical presence
- throughout interrogation; the lawyer may remain within
- sight but cannot intervene.
- IND Audio-Visual Recording: Continuous videography during
- transit is not required; recording of actual interrogation
- sessions and discovery/recovery proceedings is sufficient.

Government Approves Polymer Banknotes for Field Trials

- Government approved RBI's proposal under Section 25
- of the RBI Act, 1934 to introduce 1 billion pieces each of ₹10
- and ₹20 polymer notes for field trials.
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- www.drishtiias.com
- IND Parallel Circulation: Polymer notes will circulate alongside
- existing paper notes, not immediately replace them.
- IND Purpose of Trials: To assess cost, durability, security,
- environmental impact and suitability for Indian climatic
- conditions.
- IND Material: Made from biaxially oriented polypropylene
- (BOPP) instead of cotton-pulp paper.
- IND Advantages: More durable, water-resistant and tear-
- resistant, with transparent windows and embedded
- security features that make counterfeiting harder.
- z Polymer notes generally last 2.5–4 times longer than
- paper notes.
- IND Need: India reportedly spends nearly ₹5,000 crore
- annually on replenishing and maintaining banknotes and
- destroys around 20–24 billion soiled notes each year
- under the RBI's Clean Note Policy.
- IND Why ₹10 and ₹20 First: Lower denominations deteriorate
- faster due to frequent circulation; polymer notes could
- reduce replacement frequency and lifecycle costs.

Light-Activated Nanobots for Targeted Breast Cancer Therapy

- INST, Mohali developed light-activated multifunctional
- nanobots for more precise and targeted breast-cancer
- therapy.
- IND Working: upconversion nanoparticle (UCNP)-based
- nanobots respond to near-infrared light and show
- phototaxis, enabling directional movement toward the
- light source for localised action.
- IND Cancer Targeting: Folic-acid functionalisation targets
- breast-cancer cells overexpressing folate receptors; a 980-
- nm near-infrared laser produces localised heating to
- destroy cancer cells.

- Combined Therapy: A photosensitizer generates reactive
- oxygen species (ROS); combined photothermal and
- photodynamic effects inhibit tumours more than either
- therapy alone.
- Smart Control: Therapeutic action can be influenced by
- laser intensity, pH and glutathione concentration.
- Advantage & Testing: Fuel-free, externally controlled and
- localised treatment may reduce healthy-tissue damage
- and systemic toxicity; efficacy was demonstrated in cellular
- models and breast tumour-bearing mice, showing potential
- for precise, targeted and minimally invasive therapy.

Supreme Court Directs States to Declare Cancer as Notifiable Disease

- SC directed the 19 States/UTs that have not yet done so
- to consider declaring cancer a notifiable disease.
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- Current Status: 17 of 36 States/UTs have already notified
- cancer, following recommendations of a Parliamentary
- Standing Committee.
- Reason: PIL highlighted gaps in the ICMR National Cancer
- Registry Programme, which reportedly covers only about
- 10% of India's population, with rural coverage as low as 1%.
- Significance: Notification would make cancer reporting
- mandatory, enabling systematic data collection,
- surveillance, early detection and better planning for
- treatment and care.
- Notifiable Disease
- Aspect Detail
- Meaning
- Disease legally required to be reported to public-
- health authorities under laws such as the Epidemic
- Diseases Act, 1897
- Surveillance
- Framework
- Integrated Disease Surveillance Programme (IDSP),
- managed by NCDC
- Reporting
- Requirement
- Public/private healthcare providers must report
- suspected, probable and confirmed cases
- Common
- Examples
- Tuberculosis, Dengue, Malaria, Cholera, Hepatitis,
- Measles, Leptospirosis and Polio
- Covid-19 was universally declared notifiable
- Recent examples- Snakebite (2024) and human
- rabies (2025)
- Federal
- Character
- India has no uniform national list; notification largely
- rests with State/UT governments, causing variation
- Global
- Framework
- International Health Regulations (2005) under
- WHO are a legally binding international law that
- require member countries to notify WHO about
- events with possible international public-health
- implications

EVEREST: India's 1st Private 800 kN FFSC LOX-Methane Engine

- Bengaluru-based Astrobase Space Technologies unveiled
- EVEREST, India's first privately built 800 kN Full-Flow Staged
- Combustion (FFSC) LOX-Methane rocket engine.
- Key Specifications: 800 kN thrust, specific impulse of
about
- 340 seconds, and 50%–110% throttle range; designed for
- reusable medium-lift launch vehicles.
- FFSC Technology: Fuel and oxidiser pass through separate
- pre-burners before entering the main combustion
- chamber; generated gases drive turbopumps and then
- enter the main chamber, enabling better propellant
- utilisation and higher efficiency.
- LOX-Methane Advantage: Relatively clean combustion and
- multiple-cycle FFSC architecture make it suitable for
- reusable launch systems.
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- Saraansh August 2026
- Launch Capability: Proposed vehicle architecture targets
- about 3 tonnes to 500-km LEO, with return-to-launch-site
- recovery, aiming to improve turnaround time, precision
- control and launch economics.
- Development Roadmap: Development began in 2024;
- subsystem testing completed. Full-scale hot-fire testing at
- Anantapur, Andhra Pradesh, in 2026 is the next major
- milestone, followed by stage testing and vehicle integration.
- z Around 20 engines are planned to be manufactured/
- tested before the first orbital flight, targeted for 2028.
- Government Support: Recipient of IN-SPACe's Technology
- Adoption Fund for development of advanced private-
- sector space technologies.
- Global Significance: According to Astrobase, India is the

- 4th country after Russia, the US and China to develop FFSC
- technology; Astrobase is also the 4th commercial company
- globally developing a high-thrust FFSC engine.
- Strategic Significance: Could strengthen India's capabilities
- in reusable launch vehicles, high-cadence launches,
- indigenous propulsion and commercial access to space,
- enhancing participation in the global space economy.

Nasha Mukt Yuva for Viksit Bharat Sankalp Abhiyan

- The PM launched the Nasha Mukt Yuva for Viksit Bharat
- Sankalp Abhiyan with over 1 crore youth participating virtually
- from more than 28,000 locations across India.
- Objective: Build a drug-free, physically healthy, mentally
- resilient and confident youth population, linked with
- Viksit Bharat@2047.
- Origin: Evolved from a pilot project in Kashi (U.P.),
- supported by 125+ spiritual organisations and NGOs under
- the Kashi Declaration.
- 100-Week Action Plan: To run for 100 Sundays through
- sports, art, culture, meditation and community
- engagement against substance abuse.
- Youth-Led Jan Bhagidari: Involves students, NSS members,
- MY Bharat volunteers, colleges and communities through
- anti-drug pledges and promotion of drug-free lifestyles.
- Prevention & Early Intervention: Emphasises parent-child
- communication, early identification of addiction risks,
- campus awareness and rejection of the social normalisation
- of substance abuse.
- Rehabilitation: Promotes medical treatment, rehabilitation
- centres, counselling, yoga and meditation, along with
- ending stigma against recovering individuals.
- Enforcement & Security: Calls for stronger action against
- drug trafficking and smuggling, recognising links with
- organised crime and national-security threats, alongside
- increased seizures and action against traffickers.
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Glueball

- Scientists have found some of the strongest evidence
- yet for the long-predicted glueball, with X(2370) emerging as
- a leading candidate.
- Strong Force & QCD: The strong force binds quarks into
- protons/neutrons and helps bind protons and neutrons in
- nuclei; it is described by Quantum Chromodynamics (QCD).
- Gluons: Gluons mediate the strong force and, unlike
- photons, carry a type of charge that allows them to interact
- with one another.
- Glueball: QCD predicts short-lived composite particles
- made predominantly of gluons rather than the quark-
- antiquark pairs of conventional mesons.
- Detection Challenge: Glueballs decay rapidly into lighter
- particles and can mix with ordinary hadrons having similar
- quantum properties, making identification difficult.
- X(2370): First observed in J/ψ meson decays in 2011; its
- mass and properties broadly match theoretical predictions
- for a pseudoscalar glueball.
- z Recent Evidence– further analysis of J/ψ decay data
- strengthens the possibility that X(2370) is a glueball
- candidate.
- Significance: Confirmation would provide landmark
- experimental evidence for hadronic matter composed
- predominantly of gluons, the force carriers of the strong
- interaction.

Money Bill Route to Increase Supreme Court Judges' Strength

- Parliament passed the Supreme Court (Number of
- Judges) Amendment Bill, 2026, raising the sanctioned
- strength from 34 to 38 judges, including the CJI.
- Purpose: Creates four additional judicial posts to address
- SC's workload; appointments also require supporting staff,
- residences, vehicles and security.
- Money Bill Basis: The government linked the legislation's
- expenditure to the Consolidated Fund of India.
- Criticism: Use of Article 110(1)(g) on "incidental matters"
- may bypass effective Rajya Sabha scrutiny; Justice D.Y.
- Chandrachud's 2018 Aadhaar dissent called such use a
- "fraud on the Constitution" and a "subterfuge".
- Speaker's Role: The scope of the Lok Sabha Speaker's
- power to certify a Money Bill is pending before a seven-
- judge Constitution Bench.
- Article 110: A Money Bill primarily concerns taxation,
- borrowing, appropriation of public funds or incidental
- matters. The Rajya Sabha cannot reject or amend it and
- may only recommend changes.
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- www.drishtiias.com

Research, Development and Innovation Fund

- The ₹1 lakh crore RDIF is in focus over concerns about
- company selection for concessional loans under the deep-
- tech financing initiative.

- Aspect Description
- DST flagship initiative and Special Purpose Fund under
- About & Outlay ANRF; approved in 2025 with ` 1 lakh crore over six
- years to catalyse private-sector R&D.
- Collateral-free, low-cost, long-term finance for high-risk,
- high-impact projects at TRL 4 (Technology Readiness
- Financing
- Level and above in AI, quantum, semiconductors, space,
- defence, robotics, clean energy and digital healthcare.
- Objectives
- Promote research-driven entrepreneurship, technology
- self-reliance and critical-technology acquisition; create
- a Deep-Tech Fund of Funds; strengthen strategic
- autonomy and sustainable growth.
- Funds flow through AIFs, DFIs, NBFCs and FROs to
- Indian RDI-intensive firms/startups; loans are routed
- Funding Route
- through Second-Level Fund Managers (SLFMs), which
- select Eligible Technology Entities (ETEs).
- Technology Development Board (DST) and
- Current SLFMs Biotechnology Industry Research Assistance Council
- (Department of Biotechnology).

Indigenous African Swine Fever Vaccine Developed by ICAR

- ICAR-NIHSAD, Bhopal, developed India's first indigenous
- live attenuated African Swine Fever (ASF) vaccine using an
- attenuated Genotype II virus with specific gene deletions and
- the MA-104 cell line, enabling scalable and cost-effective
- production.
- About ASF: A highly contagious viral disease of domestic
- and wild pigs, causing high fever, internal bleeding and
- mortality of up to 100%.
- WOAH Status: A listed disease under the World Organisation
- for Animal Health Terrestrial Animal Health Code; member
- countries must notify outbreaks.
- Transmission: Direct contact with infected pigs or
- carcasses; contaminated feed, food waste, equipment and
- materials; and soft ticks in some regions.
- Human Health Risk: Not zoonotic and does not infect
- humans, but people can indirectly spread it through
- contaminated clothing, footwear, vehicles, equipment and
- pork products.
- Global Spread: First described in Kenya in 1921; after
- emerging in Georgia in 2007, spread across Europe and
- later Asia, Oceania and parts of the Caribbean, while
- continuing in Africa.
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- India: First detected in 2020; spread across several States
- and Union Territories, especially the North-East, causing
- pig deaths, movement restrictions and disruption of pork
- production and trade.
- Significance: Can reduce pig mortality and farmers' losses,
- strengthen livestock and food biosecurity, and support
- India as a supplier of affordable veterinary vaccines.

Heatwaves and Lightning Included as Notified Natural Calamities

- The Union Government added heatwaves and lightning
- to the notified calamities eligible under SDRF and NDRF
- guidelines for the 2026-31 award period.
- Basis: The decision follows the 16th Finance Commission's
- recommendation, citing the rising frequency and intensity
- of climate-related extreme weather.
- Financial Assistance: States may use SDRF funds for relief;
- NDRF assistance may supplement State resources, and
- heatwave-mitigation projects are eligible under Disaster
- Mitigation Funds.
- Expanded List: The notified categories increased from 12
- to 14, adding heatwaves and lightning to cyclone, drought,
- earthquake, fire, flood, tsunami, hailstorm, landslide,
- avalanche, cloudburst, pest attack, and frost and cold wave.
- Significance: Strengthens disaster-risk financing and aligns
- disaster management with growing climate-change
- impacts.
- Concept Definition / Key Facts
- A prolonged period of abnormally high temperatures
- relative to a region's normal climate; occurs mainly
- Heatwave
- from
- March to June, sometimes July, with May as the peak
- month. IMD uses region-specific thresholds.
- A rapid atmospheric electrical discharge caused by
- separation and accumulation of opposite charges; may
- occur within or between clouds, cloud-air, or cloud-
- ground, usually during thunderstorms.
- Lightning Lightning may also occur in volcanic ash plumes,
- wildfire-generated storm clouds and intense snowstorms.
- Lightning rod – a pointed copper conductor installed on
- buildings to intercept strikes and safely conduct current
- into the ground through earthing.

Varsha Ashok Aglawe: 1st Woman DG of Geological Survey of India

- Varsha Ashok Aglawe became the 54th Director General
- of GSI and the first woman to head it in its 176-year history.
- She succeeded Asit Saha.
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- Saraansh August 2026
- Experience: Joined GSI in 1992 after serving with the Indian
- Bureau of Mines; has over three decades of scientific and
- administrative experience.
- Expertise: Specialist in palaeontology and palynology;
- researched Late Cretaceous–Palaeocene sediments, the
- K–T boundary (Cretaceous–Tertiary boundary) and the
- Satpura–Gondwana basins.
- Contribution: Identified the Salbardi–Ghorpend area in
- Central India as a new dinosaur nesting site and participated
- in international research, including collaboration with the
- University of Michigan.
- Priorities: Critical and strategic minerals, deep-seated and
- concealed deposits, advanced geophysical surveys,
- offshore mineral exploration and stronger laboratory
- infrastructure.
- GSI
- Establishment: Established in 1851 to locate coal deposits
- for railways; presently an attached office of the Ministry
- of Mines.
- Organisation: Headquartered in Kolkata; six regional offices
- at Kolkata, Lucknow, Jaipur, Nagpur, Hyderabad and
- Shillong, with state units across most states.
- Functions: Geological mapping, mineral-resource
- assessment, geophysical, airborne and marine surveys,
- natural-hazard studies, glaciology, seismotectonics,
- geoinformatics, research and maintenance of the national
- geoscientific database.

Leptospirosis in Kerala

- Kerala faces a high disease and mortality burden from
- leptospirosis, especially during monsoon and post-monsoon
- periods.
- Cause: A zoonotic disease caused by pathogenic spiral-
- shaped bacteria (spirochaetes) of the genus Leptospira.
- Reservoirs: Wild and domestic mammals such as rodents,
- cattle, buffaloes, pigs, dogs, horses, sheep and goats. The
- bacteria can persist in renal tubules and sometimes the
- reproductive tract.
- Carrier animals may be asymptomatic or mildly ill but shed
- bacteria through their urine for long periods. Rodents are
- key reservoirs because their urine contaminates soil and
- water.
- Transmission: Direct contact with infected animal urine or
- indirect contact with contaminated water, soil or food.
- Entry occurs through cuts, abrasions, mucous membranes
- or macerated skin; human-to-human spread is rare.
- Symptoms: Range from mild flu-like illness to Weil's
- syndrome, meningitis and pulmonary haemorrhage.
- Incubation is usually 5-14 days; common symptoms are
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- fever, headache and muscle pain, while jaundice generally
- indicates severe disease.
- Diagnosis: Often underdiagnosed because symptoms
- resemble other febrile illnesses and access to suitable
- diagnostic tests may be limited.
- Treatment: Antibiotics such as doxycycline, penicillin G or
- ceftriaxone, depending on disease severity.
- Prevention: Control animal reservoirs, maintain sanitation,
- avoid contaminated water or soil and use protective
- clothing. Serovar-specific vaccines exist for animals such
- as dogs, pigs and cattle, but may not completely prevent
- renal carriage.
- Distribution: Occurs worldwide but is prevalent in South-
- East Asia; India, Indonesia, Thailand and Sri Lanka report
- most cases, particularly during the rainy season.

Registration of Births and Deaths (Amendment) Bill, 2026

- The Lok Sabha passed the Bill by voice vote without
- debate to amend the Registration of Births and Deaths Act,
- 1969.
- Key Provisions
- Delay beyond 2 years: Requires an order from a Judicial
- Magistrate First Class (JMFC).
- Delay of 1–2 years: Requires approval from a DM, SDM or
- authorised Executive Magistrate.
- Replaces references to the CrPC, 1973 with the BNSS, 2023
- and updates the definition of "Executive Magistrate."
- Aims to promote timely registration and improve the
- reliability of civil records.
- RBD Act, 1969 (Amended in 2023):
- z Mandates registration of all births, deaths and

- stillbirths at their place of occurrence.
- z RGI oversees the national system; Chief, District and
- Local Registrars manage registration and certificates.
- z Registrations have been digitally maintained through
- the Civil Registration System (CRS) since October 2023.
- z Events must be reported within 21 days; delayed
- registration attracts a prescribed late fee.

Samudra Manthan Scheme (National Offshore Exploration Scheme)

- The Union Cabinet approved the scheme to unlock India's
- offshore energy potential.
- About: Central Sector Scheme of the Ministry of Petroleum
- and Natural Gas, with an outlay of ₹84,084 crore up to FY
- 2030–31.
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- www.drishtiias.com
- Focus: Deepwater, ultra-deepwater and frontier offshore
- hydrocarbon exploration.
- Need: Offshore exploration is risky, capital-intensive and
- technologically complex, with a 5–10-year gestation
- period. A deepwater well costs $125–150 million, while
- existing fields face a 6–7% annual natural production
- decline.
- Objectives: De-risk exploration, attract private investment,
- increase domestic production, reduce imports and
- strengthen energy security (Viksit Bharat, Make in India
- and Atmanirbhar Bharat).
- Allocation: ₹43,200 crore for drilling 60 deepwater
- exploratory wells; ₹28,534 crore for seismic surveys; ₹10,000
- crore for common offshore infrastructure hubs; and ₹2,000
- crore for oil and gas manufacturing and services zones.
- Risk Sharing: Government support of up to 50% of drilling
- costs, capped at ₹675 crore per well to encourage
- sustained public and private investment in offshore basins
- such as Krishna-Godavari, Cauvery, Mahanadi and the
- Andaman region.
- Progress: ONGC plans 150 wells in seven years to assess
- 5,600 MMTOE; Oil India is exploring Andaman region and
- has reported gas in Vijayapuram-2 and 3.
- Targets: Add over 600 MMTOE reserves, raise oil and gas
- production from 62 to 80 MMTOE, and expand resources
- from 1.6 to 2.2 billion tonnes of oil equivalent.
- Significance: Could reduce crude imports by nearly ₹1 lakh
- crore annually, generate employment and strengthen
- indigenous offshore manufacturing and services.

First Possible Exomoon Around a Brown Dwarf

- Using ESO's Very Large Telescope (VLT) in Chile,
- astronomers found strong evidence of a large body orbiting
- the brown dwarf CD-35 2722 B.
- The brown dwarf itself orbits a star located about 72 light-
- years from Earth. Since the newly detected candidate
- orbits a body that itself revolves around a star, it has been
- described as an exosatellite and a potential exomoon.
- It represents the first plausible detection of an exosatellite,
- Detection Method: Radial velocity method, which detects
- a body's wobble caused by an orbiting companion.
- Characteristics of the Exosatellite: A giant gaseous body
- with a minimum estimated mass of about 90% of Jupiter's
- mass, placing it in the planetary-mass category.
- z It follows an apparently eccentric orbit around the
- brown dwarf CD-35 2722 B and completes one
- revolution in approximately 170 days.
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- Exomoon
- A natural satellite orbiting a planet or other celestial body outside the
- Solar System. No universally accepted formal definition exists.
- Brown Dwarfs
- Objects between giant planets and small stars.
- Form like stars but cannot sustain hydrogen fusion; hence called
- "failed stars."
- Generally 13–80 times that of Jupiter masses. CD-35 2722 B is
- about 30–33 times as massive as Jupit e r.

Disabling BitChat in India

- The Indian Cyber Crime Coordination Centre (I4C) under
- the Ministry of Home Affairs directed GitHub to remove
- BitChat repositories, citing possible misuse for unlawful
- assemblies and evasion of lawful surveillance.
- Notice was issued under Section 79(3)(b), IT Act, 2000,
- read with Rule 3(1)(d), IT (Intermediary Guidelines and
- Digital Media Ethics Code) Rules, 2021.
- Key Legal Concern: Section 79 of the IT Act deals with "safe
- harbour" protection for intermediaries, not blocking
- powers.
- z Lawful blocking of public access typically falls under

- Section 69A of the IT Act and the Blocking Rules, 2009,
- which mandate a formal hearing and written reasons.
- z In Shreya Singhal v. Union of India (2015), the Supreme
- Court clarified that intermediaries are required to
- remove content only upon a court order or a valid
- government direction issued through due process,
- while reaffirming Article 19(1)(a) protections for online
- speech.
- IND Civil Society Argument: Referring to Anuradha Bhasin v.
- Union of India (2020), IFF (Internet Freedom Foundation)
- contended that restrictions affecting digital communication
- must satisfy the principle of proportionality, requiring
- measures to be necessary, proportionate, and limited in
- scope and duration.

DAANVEER Initiative

- The Ministry of Panchayati Raj (MoPR), with the National
- Informatics Centre (NIC) and DigiHaat, launched DAANVEER
- to strengthen Gram Panchayat digital infrastructure through
- voluntary citizen participation.
- Key Features
- IND About: Transparent, verifiable, end-to-end digital platform
- for citizens and organisations to support identified
- technology and infrastructure needs of eligible Gram
- Panchayats.
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- Saraansh August 2026
- IND Objective: Bridge the digital infrastructure gap and
- promote efficient, transparent and citizen-centric local
- governance.
- IND Tagline: “Give Back to Your Village”, encouraging citizens
- and the Indian diaspora to support native villages.
- IND Mechanism: Available through the Meri Panchayat App
- for donating standardised, quality-verified computer
- bundles.
- IND DigiHaat Integration: Enables selection of State-specific,
- pre-approved computer bundles with end-to-end digital
- tracking.
- IND Transparency: Tracks donations from dispatch to
- installation and provides a digital certificate of appreciation.
- IND Coverage: Nearly 2.5 lakh Gram Panchayats.
- IND Digital Ecosystem: Builds on e-GramSwaraj, Meri
- Panchayat, Sabha Saar, AuditOnline and Gram Manchitra.
- IND Significance: Strengthens voluntary public participation,
- Digital India, Panchayati Raj institutions and grassroots
- digital governance.

Bank of Baroda Data Breach on Dark Web

- BoB has initiated a forensic investigation following an
- alleged leak of customer-related data onto the dark web.
- IND Cyber incidents, such as the Tata Electronics ransomware
- attack (2026), BSNL data breach (2024), WazirX crypto
- heist (2024), ICMR data leak (Dark Web, 2023), Air India
- cyberattack (2021), and the latest BoB data breach, have
- raised serious concerns over India’s cybersecurity
- preparedness.
- IND Layers of the World Wide Web
- z Surface Web: Publicly accessible websites indexed by
- search engines.
- z Deep Web: Legitimate but unindexed content requiring
- authentication, such as banking portals, emails and
- private databases.
- z Dark Web: An intentionally hidden part of the Deep
- Web, accessible through specialised software such as
- Tor. It conceals users’ identities and IP addresses and
- is often misused for illegal trade, cybercrime and data
- trafficking.
- India’s Cybersecurity and Data-Protection Framework
- IND CERT-In: India’s nodal agency for cyber threats; severe
- incidents must be reported within 6 hours.
- IND RBI Cybersecurity Framework: Requires banks to adopt a
- board-approved cybersecurity policy, establish a Cyber
- Crisis Management Plan, and promptly report unusual
- incidents.
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- IND DPDP Act, 2023: Requires Data Fiduciaries, including
- banks, to protect personal data and imposes penalties for
- inadequate safeguards.
- IND IT Act, 2000: Sections 43A and 66 address failure to protect
- sensitive data and unauthorised computer access.

BHAVYA Rasayan Scheme

- The Union Cabinet approved the Bharat Audyogik Vikas
- Yojana Rasayan (BHAVYA Rasayan) Scheme to establish three
- dedicated Chemical Parks across India.
- BHAVYA Rasayan Scheme
- IND About: Announced in the Union Budget 2026–27 to
- establish three integrated Chemical Parks for chemical,
- petrochemical, downstream and ancillary industries.
- IND Funding: Total outlay of ₹3,030 crore, including ₹3,000
- crore for infrastructure and utilities.
- IND Centre–State Contribution: Centre will provide up to

- ₹1,000 crore per park, while the State must contribute at
- least ₹500 crore.
- Implementation: To be implemented from FY 2026–27 to
- FY 2030–31 by State Governments through the Challenge
- Route.
- Land Requirement: Each park must have at least 8 sq. km
- or 2,000 acres of contiguous, encumbrance-free land.
- Infrastructure: Includes effluent treatment, hazardous-
- waste management, water supply, solvent recovery,
- pipelines, logistics and warehousing.
- Benefits: Will reduce production and logistics costs, attract
- investment, promote exports and import substitution,
- generate employment and support Atmanirbhar Bharat
- and Viksit Bharat @ 2047.

PRAXIS Mission

- NASA has selected PRAXIS (Planetary Rings Autonomous
- EXploration with In-situ Sampling) for Innovative Advanced
- Concepts (NIAC) 2026 Phase I funding. PRAXIS proposes the
- first mission to directly collect particles from planetary ring
- systems & helps in improving understanding of rings around
- Saturn, Uranus, Neptune, and smaller bodies such as Chariklo
- and Chiron.
- Nature of Saturn's Rings: Saturn's rings consist mainly of
- water ice, with particles ranging from microscopic grains
- to house-sized boulders that continuously merge, and
- break apart.
- Background: Despite the Cassini mission's discoveries,
- questions remain about how planetary rings form, evolve,
- move, and disappear.
- About: PRAXIS would make the first close-up observations
- of millimetre- to centimetre-sized ring particles.
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- www.drishtiias.com
- Objective: It would measure particle size, porosity,
- structure, and chemical composition to explain features
- such as density waves, gaps, propellers, and self-gravity
- wakes.
- AI-Powered Robotic System: The mission would use an
- AI-driven, bio-inspired robot for autonomous navigation,
- collision avoidance, target selection, sampling, and real-
- time analysis.
- Sampling Method: The spacecraft would graze the ring
- plane and use a long, soft, deployable boom for touch-
- and-go sampling, avoiding direct passage through
- hazardous ring regions.
- Exploration of Multiple Regions: PRAXIS would sample
- and compare particles from different ring sections and
- gaps.
- Future Potential: NIAC Phase I will focus on simulations
- and system design. Phase II, if approved, would support
- prototypes, laboratory tests, feasibility demonstrations,
- and operational planning.

Maharashtra to Get India's 1st AI-Powered Bird Sanctuary

- A ₹45-crore Eco-Nature Park at the Thane Creek
- Flamingo Sanctuary, featuring India's 1st AI-powered bird
- detection & monitoring centre.
- AI-Based Monitoring System: AI-enabled cameras will use
- automated image and sound recognition to identify bird
- species, track migration and analyse activity across a 1.5-
- km park stretch.
- Thane Creek Flamingo Sanctuary: Located between
- Mumbai and Navi Mumbai, it was declared a wildlife
- sanctuary in 2015 & is India's 1st flamingo sanctuary. This
- coastal wetland supports thousands of flamingos and over
- 200 bird species, including greater and lesser flamingos,
- herons, egrets, shorebirds and kingfishers.
- Migratory Importance: Part of Central Asian Flyway, an
- important migratory route connecting Europe, Central Asia
- and the Indian subcontinent.
- Flamingos
- About: Tall water birds with long, S-shaped necks & stick-
- like legs.
- z H ighly social, often in large flocks inhabiting shallow,
- eutrophic water bodies and alkaline lakes.
- Species: 6 species found globally in tropical and subtropical
- regions, with only 2 found in India (Greater & Lesser
- Flamingo).
- z Other Species: Chilean Flamingo (Phoenicopterus
- chilensis), American/Caribbean Flamingo
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- (Phoenicopterus ruber), Andean Flamingo
- (Phoenicoparrus andinus) & James's or Puna Flamingo
- (Phoenicoparrus jamesi).
- Diet & Colouration: Feed on algae, molluscs, and
- crustaceans. Their plumage colour, ranging from white to
- pink to orange, is determined by carotenoid pigments in
- their diet.
- Habitat: Shallow wetlands, mudflats and coastal lagoons.
- Threats: Habitat degradation, pollution, coastal

- development, human disturbance and changes in water
- quality.

Supreme Court Clarifies Scope of Special Intensive Revision

- Recently, the Supreme Court observed that the Special
- Intensive Revision (SIR) process is limited to electoral
- purposes and cannot be used for other objectives, including
- determining citizenship or affecting access to welfare benefits.
- The Court was hearing a petition alleging that the West
- Bengal government was using SIR data to remove names
- from welfare schemes such as food security programmes,
- women's welfare schemes, and Backward Caste
- certifications.
- The Court observed that, as per its earlier judgment in the
- 2025 Bihar SIR case, SIR outcomes cannot be used for any
- purpose other than elections. The Election Commission
- must refer citizenship-related issues to the government
- for adjudication under the Citizenship Act, 1955.
- Special Intensive Revision
- SIR: The SIR is a comprehensive exercise conducted under
- the supervision of the Chief Election Commissioner to
- update and purify electoral rolls.
- Legal Basis: The SIR is anchored in Article 324 of the Indian
- Constitution, which grants the ECI superintendence over
- elections, and Section 21(3) of the Representation of the
- People Act (RPA), 1950, which specifically empowers the
- commission to order a special revision.
- Objective: Its primary objective is to remove duplicate,
- deceased, shifted, and ineligible voters, including "ghost
- voters," to ensure that electoral rolls accurately reflect the
- eligible voting population and uphold the democratic
- principle of "one person, one vote."
- Background: The Special Intensive Revision (SIR) of
- electoral rolls has been conducted eight times between
- 1951 and 2004, with the last SIR carried out during
- 2002–2004, over two decades ago.

30-DAY REVISION PLAN

A day-wise revision schedule covering every topic in this edition — pace yourself through all eight sections and the Facts for UPSC bank in one month.

Day 1: SC Eases 3-Year Practice Rule for Judicial Services (Polity & Governance); SHANTI Act, 2025 and Nuclear Liability Concerns (Polity & Governance); Foreign Contribution (Regulation) Amendment Bill, 2026 (Polity & Governance); Supreme Court on Electoral Black Money (Polity & Governance)

Day 2: 80th Independence Day: 'Sapt Dhara' Framework for Viksit Bharat 2047 (Polity & Governance); Relevance of Regional Parties in India (Polity & Governance); Deepening Inclusive Development in Rural India (Polity & Governance); PM CARES Fund Under Scrutiny Over Transparency (Polity & Governance)

Day 3: Tribunals Reforms Bill, 2026 (Polity & Governance); Supreme Court's New Handbook on Gender Sensitivity (Polity & Governance); 10 Years of Government e-Marketplace (GeM) (Polity & Governance); Supreme Court Directs Measures to Curb 'Digital Arrest' Scams (Polity & Governance)

Day 4: Digital Transformation of Indian Judiciary (Polity & Governance); GOBARdhan: National Circular Bioenergy Scheme (Polity & Governance); SC Extends Protection Against Domestic Cruelty to Live-in Relationships (Polity & Governance); Indian Statistical Institute Bill, 2026 (Polity & Governance)

Day 5: Pradhan Mantri Viksit Bharat Rojgar Yojana (Polity & Governance); PM-KISAN Scheme (Polity & Governance); Pradhan Mantri Surya Sarovar Yojana (Polity & Governance); Jan Aushadhi Nutraceuticals (Polity & Governance)

Day 6: Revamped Khelo India Scheme (Polity & Governance); Prevention of Insults to National Honour (Amendment) Act, 2026 (Polity & Governance); Tackling Non-Revenue Water for a Water-Secure Viksit Bharat (Polity & Governance); Gen Z Protests: Redefining Democratic Participation in India (Polity & Governance)

Day 7: Public Examinations Amendment Bill, 2026 (Polity & Governance); Right to Protest and Excessive Policing (Polity & Governance); Amrit Bharat Station Scheme (Polity & Governance); PM Announces Fast-Track Courts to Tackle Public Examination Paper Leaks (Polity & Governance)

Day 8: Smart Border Architecture to Strengthen India's Border Security (Polity & Governance); Paternity Test in Matrimonial Dispute (Polity & Governance); Strengthening India's Defence through Self-Reliance (Nation & States); Emerging Terror Threats from Social Media (Nation & States)

Day 9: Parliament Passes Bill to Rename Kerala as Keralam (Nation & States); National Security Guidelines for Renewable Energy Projects Near International Borders (Nation & States); India Formally Names 27 Places in Arunachal Pradesh (Nation & States); Naxal-Free India Through Integrated Strategies (Nation & States)

Day 10: Cauvery Water Dispute (Nation & States); India at Commonwealth Games 2026 (Nation & States); Kargil Vijay Diwas 2026 (Nation & States); Surge in India's Merchandise Exports (Economic Scenario)

Day 11: Electronics Component Manufacturing Scheme (Economic Scenario); Foreign Assets of Small Taxpayers Disclosure Scheme, 2026 (Economic Scenario); India's Makhana Sector (Economic Scenario); Building a Business-Ready India (Economic Scenario)

Day 12: NITI Aayog Report on India's Regulatory Regime in Professional Services (Economic Scenario); Greenium and Sovereign Green Bonds (Economic Scenario); National Cooperative Development Corporation (Amendment) Bill, 2026 (Economic Scenario); Mines and Minerals (Development and Regulation) Amendment Bill, 2026 (Economic Scenario)

Day 13: Container Manufacturing Assistance Scheme (CMAS) (Economic Scenario); Ship Recycling in India (Economic Scenario); Taxation and Other Laws (Amendment) Act, 2026 (Economic Scenario); National Handloom Day 2026 (Economic Scenario)

Day 14: RBI to Resume Licensing of Urban Cooperative Banks (Economic Scenario); Geographical Indications in India (Economic Scenario); Critical Minerals: The Foundation for Strategic Resource Security (Economic Scenario); India's Solar Growth Enters a New Era (Economic Scenario)

Day 15: Indian Rupee: From Overvaluation to Undervaluation (Economic Scenario); Minimum Support Price and the Need for Alternative Farmer Support (Economic Scenario); India as a Tourism Hub (Economic Scenario); ILO Convention No. 193 on Decent Work in the Platform Economy (Economic Scenario)

Day 16: India Allows FDI in Inventory-Based E-Commerce Model for Exports (Economic Scenario); India-Japan Maritime Security Pact (International Relations); India's Trade Agreements in Action (International Relations); The Makkah Joint Defence Agreement (International Relations)

Day 17: A Climate Resilience Pathway Between India and China (International Relations); India's Trade Balancing Act: Navigating US, China and Strategic Autonomy (International Relations); US-Saudi Arabia Nuclear Deal (International Relations); President's State Visit to Romania (International Relations)

Day 18: Rome Declaration for an Unarmed and Disarming Peace (International Relations); Bay of Bengal as India's SHANTI Anchor (International Relations); World Elephant Day 2026 (Environment & Ecology); Thinning-Induced Deceleration of Zanskar Glaciers (Environment & Ecology)

Day 19: Agasthyamalai Evictions and the Forest Rights Act, 2006 (Environment & Ecology); World Lion Day (Environment & Ecology); SC Extends 10 km Mining Buffer Rule to Wetland Reserves Across India (Environment & Ecology); India Launches Clouded Leopard Conservation Action Plan (CAP) (Environment & Ecology)

Day 20: Ken-Betwa River Linking Project (Environment & Ecology); SC Verdict on Ex Post Facto Environmental Clearances (Environment & Ecology); Cloudbursts in India (Environment & Ecology); Western Ghats Ecologically Sensitive Area: 7th Draft Notification (Environment & Ecology)

Day 21: Teesta Tunnel Disaster: Methane Risks and Himalayan Infrastructure Vulnerability (Environment & Ecology); Soil Management for Sustainable Agriculture (Environment & Ecology); Generative AI in Synthetic Biology (Science & Technology); Transforming India's Space Ecosystem (Science & Technology)

Day 22: Rotating Detonation Engines (Science & Technology); Total Solar Eclipse (Science & Technology); Physicist Deepak Dhar Awarded the 2026 Dirac Medal (Science & Technology); NASA Invites ISRO to Join Moon Base Programme (Science & Technology)

Day 23: Lab-Grown Diamonds (Science & Technology); World Hepatitis Day (WHD) 2026 (Science & Technology); Mega Data Centres and the Sustainability Challenge (Science & Technology); Royal Indian Navy Mutiny of 1946 (History, Art & Culture)

Day 24: Indian Independence Act, 1947 (History, Art & Culture); Veeragallu Discovery Sheds Light on Ruler Vishnuvardhana's Death (History, Art & Culture); Centre's Opposition to Creamy Layer for SC/STs (Social Issues); Debate on Alcohol Prohibition (Social Issues)

Day 25: The State of Food Security and Nutrition in the World 2026 (Social Issues); NITI Aayog Report on India's Caregiving Ecosystem (Social Issues)

Final Days: Revise all Facts for UPSC categories — Report & Indices, Awards & Honours, Important Days, Defence & Security, Summits & Conferences, Places in News, Portals & Apps, Species in News, Miscellaneous.

समाप्त

That completes the Ghatak Series — August 2026. Every topic and fact from this month's Saraansh has been compiled here for your revision.

॥ जय हिंद ॥

DHALIWAL'S NEW CAREERS ACADEMY

On behalf of three generations: Late Lt. Col. Hardit Singh Dhaliwal → Capt. Nirmal Dhaliwal → Hartaj Dhaliwal, Director

Powered by Hardit AI