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MONTHLY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

OCTOBER 2026



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Khajuraho Group of Monuments

Context: The Archaeological Survey of India (ASI) plans to restore the missing head of a Vishnu idol at the Javari Temple in Khajuraho, Madhya Pradesh, after locating the original sandstone head in an ASI store.

About Khajuraho Group of Monuments:

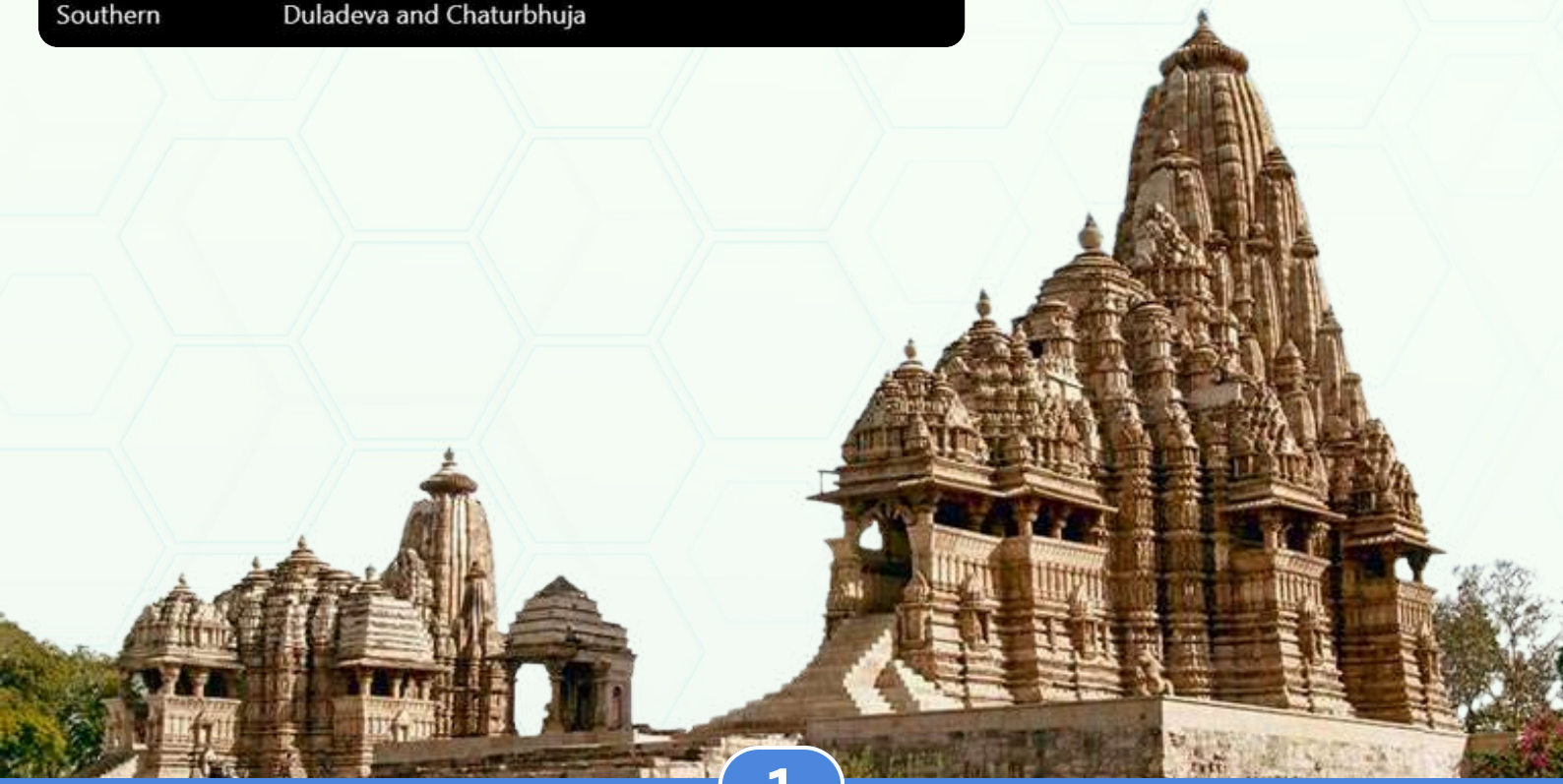
- Location: Khajuraho, Chhatarpur district, Madhya Pradesh.
- Patronage: Built mainly by the Chandela dynasty between the 10th and 12th centuries CE.
- Religious Significance: The temples are dedicated to Hindu and Jain traditions.
- UNESCO Status: Inscribed on the UNESCO World Heritage List in 1986.

Architectural Features:

- Nagara Style: Characterised by towering Shikharas (temple towers), intricate carvings and balanced proportions.
- Panchayatana Style: Seen in Lakshmana and Vishvanatha temples, with four subsidiary shrines surrounding the main shrine.
- Sculptures: Depict deities, celestial beings, dancers, musicians, warriors, daily life and amorous couples.
- Material: Locally available sandstone was used for detailed carvings.

Three Groups of Temples:

Group	Important Temples
Western	Lakshmana, Kandariya Mahadeva, Vishvanatha and Varaha
Eastern	Javari, Hanuman and Jain temples
Southern	Duladeva and Chaturbhuja



Brihattar Bharat Scheme

Context: The Prime Minister highlighted Nalanda's role in promoting knowledge exchange between India and Asia at the International Conference on Bharat's Cultural Connections Across the Globe.

About the International Conference on Bharat's Cultural Connections Across the Globe:

- Theme: Brihattar Bharat, meaning "Greater India" or "Expanded Bharat".
- Venue: Vigyan Bhawan, New Delhi.
- Organiser: Indira Gandhi National Centre for the Arts (IGNCA), Ministry of Culture.
- Participation: Scholars, delegates and ambassadors from around 50 countries.

Key Objectives:

- Explore India's historical connections with other civilisations through religion, philosophy, languages, art, trade and maritime networks.
- Highlight the spread of Indian ideas across Asia through monks, scholars, traders and travellers.
- Promote manuscript preservation through the Gyan Bharatam initiative and the repatriation of Indian antiquities from abroad.

Significance:

- The conference commemorates the 100th anniversary of the Greater India Society (Brihattar Bharat Parishad), established in Calcutta on 14 October 1926, with Rabindranath Tagore as its spiritual guide.

About Brihattar Bharat Scheme (2026–2031):

- Launch: 14 October 2026.
- Implementing Ministry: Ministry of Culture.
- Implementing Institution: Indira Gandhi National Centre for the Arts (IGNCA).
- Objective: To document, preserve and promote India's historical, cultural and civilisational connections with other parts of the world.
- Umbrella Framework: Operates under the Global Engagement Scheme (GES), which supports India's international cultural engagement.

Disability Rights: Classifying Communication Aids as Essential Assistive Products

Context: The disability rights group Doctors with Disabilities: Agents of Change (DwDAoC) has urged the Centre to classify Augmentative and Alternative Communication (AAC) devices and prostheses as essential assistive products under the draft Rights of Persons with Disabilities (Amendment) Rules, 2026.

Why is this Classification Important?

- Affordable Access: Improves access to public funding and financial assistance.
- Insurance Coverage: Reduces uncertainty regarding insurance, replacement and maintenance.
- Protection of Rights: Supports communication, mobility, dignity and independent living.
- Preventing Exclusion: Ensures products are not excluded merely because they require specialist assessment, customisation or rehabilitation.

Challenges in Ensuring Equitable Access to Assistive Technology:

- High Costs: Procurement, customisation, repairs and replacement costs make devices unaffordable for low-income households.
- Limited Financial Assistance: The Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP) Scheme may not adequately cover advanced prosthetic components and modern digital AAC systems.
- Insurance Gaps: Unclear classification creates uncertainty regarding insurance reimbursement and government financial assistance.
- Shortage of Specialists: Limited availability of trained professionals for assessment, fitting, rehabilitation and maintenance, particularly in rural areas.
- Digital and Linguistic Barriers: AAC applications may be expensive or unavailable in Indian languages. Limited digital literacy and internet access further restrict their use.
- Fragmented Service Delivery: Lack of coordination between healthcare, rehabilitation, education and social welfare systems affects effective utilisation of assistive devices.

Essential vs Specialised Assistive Products:

Essential Assistive Products	Specialised Assistive Products
Basic products addressing fundamental functional needs.	Advanced or customised products for specific functional needs.
Examples: Spectacles, hearing aids, wheelchairs, walking aids, basic communication aids and prostheses.	Examples: Powered wheelchairs, cochlear implants, specialised communication devices and customised prostheses.

About Assistive Products:
Assistive products are devices, technologies or equipment that help persons with disabilities, older persons and individuals with functional limitations improve their independence and participation in society.

Major Categories:

- Mobility and Physical Support: Wheelchairs, crutches, walkers, prostheses and orthoses.
- Sensory and Communication Support: Hearing aids, spectacles, Braille devices, screen readers and communication aids.
- Daily Living and Cognitive Support: Adaptive utensils, bathing aids, memory aids and other self-care tools.

Way Forward:

- Clear Classification: Include AAC devices and prostheses under essential assistive products based on their role in ensuring autonomy, communication and mobility.
- Strengthen ADIP Scheme: Revise financial assistance limits according to inflation and technological advancements. Include repairs, maintenance and timely replacement.
- Promote Indigenous Innovation: Encourage collaboration among IITs, ALIMCO, medical institutions, startups and persons with disabilities to develop affordable prostheses and multilingual AAC software.
- Improve Language Accessibility: Develop communication applications in Indian languages, including solutions suitable for low-connectivity areas.
- Rights-Based Approach: Align regulations with the Rights of Persons with Disabilities (RPwD) Act, 2016, the UN Convention on the Rights of Persons with Disabilities (UNCRPD) and relevant WHO frameworks.

Food Security

Context: World Food Day is observed every year on 16 October. The theme for 2026 is "Innovate Today, Nourish Tomorrow".

About Food Security:
According to the Food and Agriculture Organization (FAO), food security exists when all people have regular physical, social and economic access to sufficient, safe and nutritious food for an active and healthy life.

Four Dimensions of Food Security:

1. Availability: Adequate food supply through domestic production, imports and food stocks.
2. Accessibility: Physical and economic access to food for all individuals.
3. Utilisation: Proper nutrient absorption through balanced diets, safe drinking water, sanitation and healthcare.
4. Stability: Continuous availability and access to food without disruptions caused by crises, seasonal changes or price fluctuations.

Global Food Security Challenges:

- Hunger and Malnutrition: According to the State of Food Security and Nutrition in the World (SOFI) 2026 report, around 645 million people faced hunger in 2025, while 2.69 billion people (32.7% of the global population) could not afford a healthy diet.
- Conflict and Displacement: According to the Global Report on Food Crises (GRFC) 2026, around 266 million people across 47 countries and territories faced acute food insecurity in 2025. Conflicts, displacement and restrictions on humanitarian assistance remain major causes.

India's Journey: From Food Scarcity to Surplus:

- Green Revolution: High-Yielding Variety (HYV) seeds, irrigation and Minimum Support Price (MSP) helped increase agricultural productivity and achieve foodgrain self-sufficiency.
- Record Production: Foodgrain production increased from 251.54 million tonnes (2015–16) to 357.73 million tonnes (2024–25).
- Diversified Production: India is a leading producer of milk, pulses, fruits and vegetables.
- Food Safety Net: Large-scale food distribution and nutrition programmes support vulnerable sections of society.

Challenges of Food Security in India:

- Hunger and Undernutrition: The Global Hunger Index (GHI) 2025 classified India's hunger level as serious, with a score of 25.8.
  - NFHS-5 (2019–21) reported child stunting rates of 37.3% in rural areas and 30.1% in urban areas.
- Limited Access to Nutritious Food: High food prices and low purchasing power make balanced diets unaffordable for vulnerable households.
  - According to MoSPI's Nutritional Intake in India Report 2025, average adjusted daily per capita calorie intake in 2023–24 was 2,191 kcal in rural areas and 2,225 kcal in urban areas.
- Climate Change: Droughts, floods, heatwaves and irregular monsoons threaten crop production and increase food-price fluctuations.
- Post-Harvest Losses: Inadequate cold storage, food processing and transportation facilities lead to food wastage and reduce farmers' income.
- Imbalanced Diet: Excessive focus on rice and wheat procurement discourages crop diversification, while low consumption of pulses, fruits and vegetables contributes to nutritional deficiencies.
  - NFHS-5 reported anaemia among 67.1% of children aged 6–59 months.

Way Forward:

- Climate-Resilient Agriculture: Promote climate-resilient and biofortified crops to improve productivity and nutritional outcomes.
- Nutritional Security: Shift focus from foodgrain sufficiency towards balanced and diverse diets.
- Support Small Farmers: Improve market access, infrastructure and financial assistance to strengthen smallholder incomes.
- Women-Centric Innovation: Develop suitable agricultural technologies and financial services to increase women's participation.
- Integrate Traditional and Modern Knowledge: Combine indigenous farming practices with scientific research and modern technology.
- Efficient Food Systems: Reduce post-harvest losses, strengthen supply chains and improve food distribution.

India's Growing Water Stress and Freshwater Security

Context: According to the Central Water Commission (CWC), live storage in 178 major reservoirs stood at around 70% of their total capacity, below the 10-year average of 76.62%. This highlights concerns over India's freshwater security amid irregular rainfall, groundwater depletion and rising demand.

India's Freshwater Resource Base:

- Limited Water Resources: India has 18% of the world's population and 15% of its livestock but only 4% of global freshwater resources.
- Monsoon Dependence: The Southwest Monsoon contributes over 70% of India's annual rainfall and plays a major role in replenishing rivers, reservoirs and groundwater.
- Himalayan Rivers: The Indian Himalayan Region, known as the Water Tower of Asia, is the source of major river systems such as the Indus, Ganga and Brahmaputra.
- Peninsular Rivers: Major rivers include Godavari, Krishna, Mahanadi, Narmada, Tapi, Cauvery and Pennar. Most depend heavily on monsoon rainfall.
- Groundwater Dependence: Groundwater is a major source of irrigation, domestic water supply and industrial use.

Major Drivers of Water Stress in India:

- Erratic Monsoon: Uneven rainfall affects reservoir storage and groundwater recharge.
- Climate Variability: Extreme weather events and changing rainfall patterns increase uncertainty in water availability.
- Rapid Urbanisation: Urban expansion and encroachment of water bodies reduce natural water storage and groundwater recharge.
- Groundwater Over-extraction: Excessive withdrawal has caused declining groundwater levels in several regions.
- Degradation of Himalayan Springs: Drying and deterioration of mountain springs threaten water availability in Himalayan communities.
- Rising Demand: Increasing water requirements from agriculture, households, industries and energy generation put additional pressure on freshwater resources.

Implications of Growing Water Stress:

- Food Security: Water scarcity threatens agricultural productivity, particularly in water-intensive farming regions.
- Energy Security: Low reservoir levels can reduce hydropower generation.
- Urban Water Security: Growing cities face recurring shortages and the risk of Day Zero situations, when regular water supplies may run out.
- Livelihood Security: Water scarcity affects farming, livestock and rural livelihoods.
- Ecological Security: Reduced water availability threatens wetlands, rivers, forests and biodiversity.

Measures to Strengthen Water Security:

- Groundwater Management: Adopt aquifer-based management and regulate excessive groundwater extraction.
- Rainwater Harvesting: Expand rainwater harvesting, watershed development and artificial groundwater recharge.
- Efficient Irrigation: Promote micro-irrigation techniques and less water-intensive cropping patterns.
- Restoration of Water Bodies: Rejuvenate lakes, ponds, wetlands and urban water bodies.
- Himalayan Spring Management: Strengthen springshed management to protect and revive mountain springs.
- Wastewater Reuse: Encourage the use of treated wastewater in agriculture and industries.
- Integrated Water Governance: Improve coordination among States through river-basin-based planning and integrated water-resource management.

Right to Internet Access is a Fundamental Right

Context: The Supreme Court recently held that the right to access and use the internet is a fundamental right that also extends to children, rejecting blanket restrictions imposed in the name of online safety.

Background of the Case:

- The ruling came in Just Rights for Children Alliance v. S. Harish, concerning the circulation of Child Sexual Exploitation and Abuse Material (CSEAM) and social media platforms' compliance with earlier Supreme Court directions.
- The Court examined whether restricting children's internet access was an appropriate measure to address online harms.

Key Observations of the Supreme Court:

- Internet Access as a Fundamental Right: The right to access and use the internet is protected under Article 21, read with Article 19(1)(a) of the Constitution. Children enjoy this right irrespective of age.
- Rejection of Blanket Restrictions: The Court rejected blanket bans on children's internet and social media access, noting that their effectiveness in ensuring safety is unproven.
- Balance Between Safety and Freedom: Online safety measures should target harmful content, offenders and non-compliant intermediaries rather than denying children internet access.
- Privacy Concerns: Mandatory age verification and continuous monitoring may involve excessive collection of sensitive personal data, increasing risks of surveillance and privacy violations.
- Proportionate Safeguards: The Court supported measures such as parental guidance, age-appropriate content moderation and dedicated child mode features, including private-by-default accounts and restrictions on contact from unknown adults.

Challenges in Ensuring Children's Online Safety:

- Exposure to Harmful Content: Children face risks from cyberbullying, online grooming, sexual exploitation, misinformation and fraud.
- Regulatory Limitations: Blanket bans may push children towards less regulated platforms without addressing the root causes of online harm.
- Privacy Risks: Age-verification systems may lead to excessive data collection, profiling and data breaches.
- Digital Divide: Unequal access to devices, internet connectivity and digital literacy can deepen educational and social inequalities.
- Weak Enforcement: Delayed content removal, ineffective reporting systems and poor intermediary compliance allow harmful material to circulate.
- Implementation Gaps: Recognising internet access as a right has limited value without affordable connectivity, accessible infrastructure and effective safeguards.

Constitutional and Legal Framework (UPSC CSE Prelims 2018 & 2021):

Provision	Key Provisions
Article 21	Protects the right to life and personal liberty, including dignity and privacy.
Article 19(1)(a)	Guarantees freedom of speech and expression, including access to and sharing of information online, subject to reasonable restrictions.
Article 14	Guarantees equality before the law and equal protection of laws.
Article 39(e) & 39(f)	Direct the State to protect children from abuse and ensure their healthy development in conditions of freedom and dignity.
POCSO Act, 2012	Protects children against sexual offences, including offences involving sexually exploitative material.
IT Act, 2000 and IT Rules, 2021	Provide mechanisms to address unlawful online content and prescribe due-diligence obligations for intermediaries.

Way Forward:

- Risk-Based Regulation: Introduce targeted, proportionate and age-appropriate safeguards instead of blanket restrictions.
- Child-Friendly Platform Design: Promote private-by-default accounts, restrictions on unknown contacts and effective reporting mechanisms.
- Stronger Accountability: Improve detection and removal of CSEAM through trained human review, effective grievance redressal and penalties for non-compliance.
- Privacy-Preserving Age Verification: Develop age-assurance mechanisms that minimise personal data collection and prevent unnecessary surveillance.
- Digital Literacy: Include online safety, cyber awareness and responsible technology use in school curriculam.

Right to Protest

Context: The Delhi Police has de-notified Jantar Mantar as a designated protest site and identified three alternative venues for demonstrations. The decision has renewed debate over balancing the right to peaceful protest, public order and the rights of local residents.

About the Right to Protest:

- Constitutional Basis: Although not explicitly mentioned as a separate Fundamental Right, the right to protest is protected under:
  - Article 19(1)(a): Freedom of speech and expression.
  - Article 19(1)(b): Right to assemble peacefully and without arms.
- Reasonable Restrictions: These rights are subject to reasonable restrictions under Articles 19(2) and 19(3), respectively, on specified grounds, including public order.
- Not an Absolute Right: Protests must remain peaceful and comply with lawful restrictions. The right does not include unrestricted occupation of public roads or spaces indefinitely.

Significance of the Right to Peaceful Protest:

- Democratic Accountability: Enables citizens to question government decisions and hold public authorities accountable.
- Representation of Marginalised Groups: Provides farmers, workers and disadvantaged communities a platform to raise their concerns.
- Participatory Democracy: Allows citizens to participate in public affairs beyond electoral processes.
- Policy Responsiveness: Brings neglected issues into public debate and encourages policy and administrative action.
- Protection of Dissent: Strengthens democracy, pluralism and the freedom to express disagreement peacefully.

Challenges in Regulating Protests:

- Competing Fundamental Rights: Authorities must balance protesters' freedoms with the rights of residents, commuters and other users of public spaces.
- Public Order and Security: Large gatherings can cause traffic congestion, security concerns and crowd-management difficulties.
- Residents' Rights: Noise pollution, sanitation issues and disruption of daily activities affect local communities.
- Disproportionate Restrictions: Blanket bans, arbitrary permission requirements and inaccessible alternative venues can restrict constitutional freedoms.
- Unequal Access: Relocating protests to distant or poorly connected venues can disproportionately affect economically weaker groups.
- Administrative Discretion: Unclear permission procedures may lead to uncertainty and selective enforcement.
- Proportionality: Police action must be proportionate to the nature and immediacy of the threat.

Way Forward:

- Apply the Proportionality Principle: Restrictions should have a legitimate purpose and be necessary, reasonable and the least restrictive effective measure.
- Standard Operating Procedures (SOPs): Establish clear guidelines for alternative venues such as Ramlila Ground, Burari Ground and CBD Ground, covering crowd capacity, sanitation, security, emergency services and traffic management.
- Stakeholder Consultation: Involve protest organisers, civil society groups, local residents and authorities before changing designated protest venues.
- Adequate Infrastructure: Ensure alternative venues have drinking water, sanitation, emergency facilities, accessibility and reliable public transport.
- Accountable Policing: Establish clear crowd-management protocols and safeguards against arbitrary use of preventive powers.
- Judicial Oversight: Ensure effective judicial review of restrictions that disproportionately affect fundamental rights.

Conversion Does Not Grant Quota Benefits

Context: The Supreme Court ruled that a Hindu belonging to a Backward Class cannot automatically claim reservation benefits under a notified Backward Muslim community merely by converting to Islam or another religion.

Background of the Case:

- Tamil Nadu Government Order (March 2024): The State allowed eligible persons from Backward Classes (BC), Most Backward Classes (MBC), Denotified Communities and Scheduled Castes who converted to Islam to seek recognition under seven notified Backward Class Muslim communities.
- Madras High Court: Struck down the government order on 25 June 2026.
- Supreme Court: Upheld the High Court's decision in The Secretary to Government v. Sameer Ahamed N. on 15 October 2026.

Key Observations of the Supreme Court:

- No Automatic Transfer of Status: Conversion does not automatically make a person a member of a notified Backward Muslim community or entitle them to its reservation benefits.
- Proof of Community Membership: Certificates issued by religious bodies such as a Jamath are not sufficient by themselves to establish statutory Backward Class status.
- Limits of Executive Powers: A State government cannot automatically transfer individuals from one community category to another through an executive order without establishing legal eligibility.
- Scheduled Caste Status: SC status is governed by Article 341 and the Constitution (Scheduled Castes) Order, 1950. State governments cannot independently modify or recreate the SC list through executive orders.

Arguments in Favour of the Ruling:

- Constitutional Authority: Upholds the constitutional procedure for determining Scheduled Caste status, involving the President and Parliament.
- Evidence-Based Eligibility: Prevents individuals from claiming reservation benefits through self-declaration alone and requires proof of eligibility.
- Community-Specific Backwardness: Reinforces the principle that reservation benefits are linked to the social and educational backwardness of recognised communities.

Concerns and Criticisms:

- Continuing Discrimination: Individuals from historically oppressed castes may continue to face social stigma and discrimination even after religious conversion.
- Equality and Religious Freedom: Raises questions concerning Articles 14 (Equality), 15 (Prohibition of Discrimination) and 25 (Freedom of Religion).
- Federalism and Social Justice: Tamil Nadu argues that States should have sufficient flexibility to address region-specific patterns of social and educational backwardness within constitutional limits.

Way Forward:

- Comprehensive Review: Parliament may undertake an evidence-based review of religion-based restrictions on SC status using sociological and empirical data.
- Commission-Based Assessment: States should rely on expert commission findings and community-specific data before modifying Backward Class lists.
- Transparent Verification: Establish clear mechanisms for verifying community membership and social backwardness rather than relying solely on certificates issued by religious organisations.

Appointment of Governors in Six States

Context: President Droupadi Murmu appointed Governors for six States: Om Prakash Mathur (Kerala), Rajendra Vishwanath Arlekar (Tamil Nadu), Braj Mohan Ram (Odisha), Dr. Sudha Yadav (Karnataka), Dr. Dhal Singh Bisen (Uttarakhand) and Dushyant Gautam (Sikkim).

Constitutional Provisions (Articles 153–167):

Provision	Key Features
Article 153	Provides for a Governor in every State. One person can serve as Governor of two or more States.
Article 155	Appointed by the President through a warrant under their hand and seal.
Article 157	Must be an Indian citizen and at least 35 years old.
Article 159	Oath is administered by the Chief Justice of the concerned High Court or, in their absence, the senior-most available judge.
Article 156	Holds office for five years, subject to the pleasure of the President.

- Appointment: The Governor is appointed by the President and is not directly elected by the people.
- Multiple States: The provision allowing one person to serve as Governor of multiple States was enabled by the 7th Constitutional Amendment Act, 1956.

Major Issues and Challenges Relating to the Governor's Office:

- Political Neutrality: Political considerations in appointments and functioning may undermine the perceived impartiality of the office.
- Tenure and Removal: The President's pleasure under Article 156 raises concerns about the Governor's independence and security of tenure.
- Delay in Assent to Bills: Prolonged delays in granting assent to State Bills can create friction between Governors and elected State governments.
- Centre–State Relations: Conflicts between Governors and State governments led by different political parties can strain federal relations.
- Discretionary Powers: Disputes over government formation, floor tests and reservation of Bills for the President's consideration can affect constitutional functioning.

Important Commissions and Supreme Court Judgments:

- Sarkaria Commission (1983–1988): Recommended appointing an eminent and politically detached person, preferably from outside the State. It also favoured consultation with the State Chief Minister.
- Punchhi Commission (2007–2010): Examined reforms concerning the Governor's appointment, tenure, removal and constitutional role.
- Hargovind Pant v. Dr. Raghukul Tilak (1979): Held that the Governor is an independent constitutional officeholder and not an employee of the Central Government.
- B.P. Singhal v. Union of India (2010): Held that the Governor's removal cannot be arbitrary or unreasonable.
- Nabam Rebia v. Deputy Speaker (2016): Clarified that the Governor does not enjoy general discretionary powers and must ordinarily act on the aid and advice of the Council of Ministers.

Legislative Councils (Vidhan Parishad)

Context: Elections to 28 Legislative Council seats were held in Uttar Pradesh, Bihar, Maharashtra and Karnataka.

<u>About Legislative Councils</u>

- Nature: The Legislative Council is the Upper House of a State Legislature. It is a permanent body and cannot be dissolved.
- Constitutional Provisions:
- Article 169: Parliament can create or abolish a Legislative Council if the State Legislative Assembly passes a resolution with a special majority.
- Article 171: Deals with the composition and strength of the Council.
- States with Legislative Councils (6): Uttar Pradesh, Bihar, Maharashtra, Karnataka, Andhra Pradesh and Telangana.
- Powers: It debates and examines ordinary Bills, raises public issues and questions ministers. However, it cannot permanently block ordinary Bills or reject Money Bills.

Members of Legislative Council (MLCs)

- Term: Six years, with one-third of members retiring every two years.
- Strength: Under Article 171, the Council's strength cannot exceed one-third of the State Assembly's strength and must have at least 40 members.
- Qualifications (Article 173): A member must be an Indian citizen and at least 30 years old.

Composition and Election (Article 171)

- One-third: Elected by members of local authorities.
- One-third: Elected by members of the State Legislative Assembly.
- One-twelfth each: Elected by graduates and teachers.
- Remaining members: Nominated by the Governor.

Governor's Nominations (Article 171(5)): The Governor nominates individuals with special knowledge or practical experience in literature, science, art, the cooperative movement and social service.

National Tribunals Commission Rules, 2026

Context: The Union Law Ministry notified the National Tribunals Commission and the Qualification, Selection and Conditions of Service of Chairperson and Members of Tribunals Rules, 2026.

Background:

- Establishment: The National Tribunals Commission was established following the passage of the Tribunals Reforms Bill in August 2026.
- Supreme Court Intervention: The Supreme Court struck down certain provisions of the Tribunals Reforms Act, 2021, citing concerns over separation of powers and judicial independence.
- Need for Independent Commission: The Court directed the establishment of an independent National Tribunals Commission to ensure transparent appointments, professional expertise and effective oversight of tribunals.

Key Provisions of the Rules, 2026:

- Appointments: The Commission will appoint chairpersons and members to 16 tribunals and appellate bodies.
- Timely Recruitment: The process to fill vacancies must begin at least six months before the vacancy arises.
- Selection Process: Search-cum-selection committees will evaluate candidates through expert assessment, personal interaction and written exercises, wherever applicable.
- Remuneration:
  - Commission Chairperson: ₹2.5 lakh per month.
  - Commission Members: ₹2.25 lakh per month.
  - Similar remuneration is prescribed for tribunal chairpersons and members, subject to specified exceptions.

Classical Languages of India

Context: The Ministry of Education has approved five Centres of Excellence (CoEs) for Classical Assamese, Bengali, Marathi, Pali and Prakrit to promote research and preserve their linguistic heritage.

THE 11 CLASSICAL LANGUAGES OF INDIA		
S.N.	LANGUAGE	NOTIFICATION DATE
1	Tamil	12 OCT 2004
2	Sanskrit	25 NOV 2005
3	Telugu	31 OCT 2008
4	Kannada	31 OCT 2008
5	Malayalam	08 AUG 2013
6	Odia	01 MAR 2014
7	Marathi	03 OCT 2024
8	Pali	03 OCT 2024
9	Prakrit	03 OCT 2024
10	Assamese	03 OCT 2024
11	Bengali	03 OCT 2024
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About Classical Languages:

- Meaning: Languages recognised for their ancient origins, rich literary traditions and unique cultural heritage.
- Introduction: The classical language category was introduced in 2004, with Tamil being the first language to receive this status.
- Recognition: The Government of India grants this status based on recommendations of the Linguistic Experts Committee (LEC) under the Sahitya Akademi.
- Key Criteria:
  - Ancient texts or recorded history dating back at least 1,000 years.
  - Rich collection of ancient literature considered a valuable heritage.
  - An independent literary tradition, not borrowed from another speech community.
- Recognised Languages (11): Tamil, Sanskrit, Telugu, Kannada, Malayalam, Odia, Marathi, Pali, Prakrit, Assamese and Bengali.
- Benefits: Promotes research, teaching, preservation, digitisation, translation and academic recognition.

About Centres of Excellence (CoEs):

- Purpose: To provide institutional support for research, preservation, digitisation and wider promotion of Classical Languages.
- Newly Approved Centres:

Classical Language	Institution	State
Assamese	Tezpur University	Assam
Bengali	Visva-Bharati University	West Bengal
Marathi	Deccan College, Pune	Maharashtra
Pali	Central University of Odisha	Odisha
Prakrit	Central University of Gujarat	Gujarat

India–Poland Relations

Context: During the Polish Prime Minister's first visit to India since 2010, both countries agreed to double bilateral trade by 2030 and expand cooperation in defence, technology, critical minerals, clean energy, transport and maritime sectors.

More on the News:

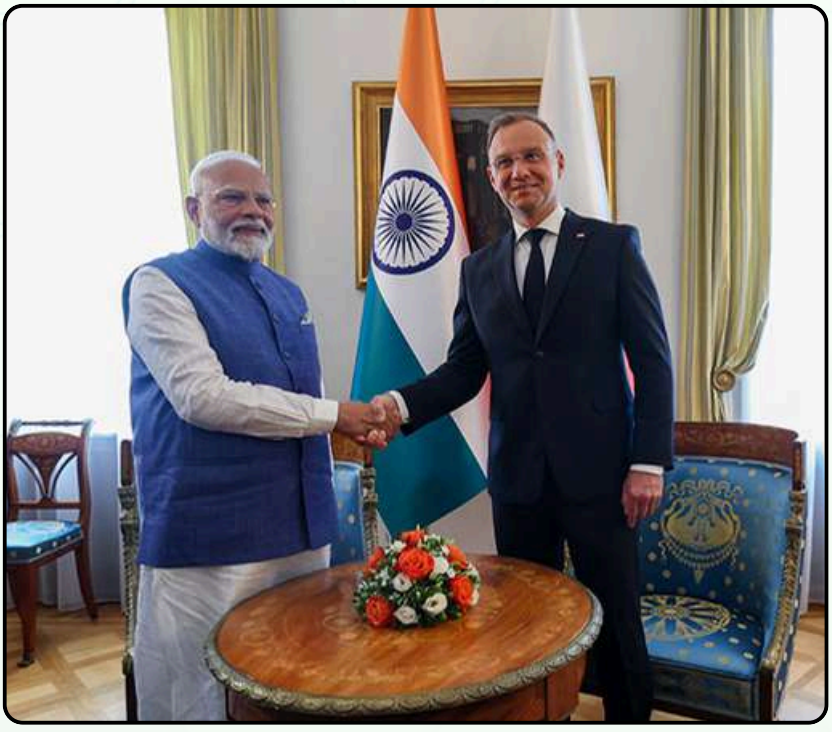
- The visit aimed to strengthen the Strategic Partnership established in 2024.
- The partnership seeks to institutionalise bilateral cooperation through the Action Plan 2024–2028 and regular engagement across various sectors.

Major Outcomes of the 2026 Visit:

- Trade and Investment: Both countries set a target to double bilateral trade from around US$6 billion by 2030. The India–EU Free Trade Agreement is expected to boost trade further.
- Defence Cooperation: A Defence Industry Dialogue was announced to promote cooperation in defence technology, security and equipment through greater industry-to-industry engagement.
- Protection of Classified Information: Both sides emphasised concluding an agreement for the mutual protection and exchange of classified information to facilitate sensitive defence cooperation.
- Emerging Technologies: Cooperation will expand in Artificial Intelligence (AI), semiconductors, quantum technologies, space, mining and critical minerals.
- Energy and Connectivity: Both countries explored cooperation in renewable energy, clean coal, railways, ports, shipbuilding and maritime technology.
- Counter-Terrorism: Both sides condemned terrorism, including cross-border terrorism and the Pahalgam terror attack, and agreed to strengthen cooperation through a dedicated counter-terrorism dialogue.

Multilateral Cooperation:

- UNSC Reforms: Poland supported India's candidature for a non-permanent UNSC seat for 2028–29 and permanent membership in a reformed Council.
- Climate Cooperation: Poland announced its intention to join the Coalition for Disaster Resilient Infrastructure (CDRI). India invited Poland to join the International Solar Alliance (ISA) and Global Biofuels Alliance (GBA).



Why is Poland Important for India?

- Gateway to Europe: Poland's EU membership and central European location provide Indian businesses access to wider European markets.
- Strategic Location: Its position between Western and Eastern Europe makes it important for regional connectivity, logistics and security.
- Growing Economy: Poland offers opportunities for Indian investments in manufacturing and services.
- Growing Trade: Bilateral trade increased by 192%, from US$1.95 billion in 2013 to US$6.36 billion in 2025.
- Defence Cooperation: Poland's growing defence industry offers opportunities for joint production, technology transfer and equipment partnerships.
- Critical Supply Chains: Cooperation in critical minerals, mining and batteries can help India diversify its strategic supply chains.
- Maritime Cooperation: Partnerships in ports, shipbuilding and marine technology can support India's logistics, maritime security and industrial development.

Government to Modify PLFS to Capture Gig Economy and Unpaid Work

Context: The Ministry of Statistics and Programme Implementation (MoSPI) has proposed changes to the Periodic Labour Force Survey (PLFS), which will come into effect from January 2027.

Key Proposed Changes:

- Digital Platform Workers: The survey will identify households with at least one member engaged in digital platform-based work, such as app-based cab services and food delivery.
- Unpaid Household and Care Work: It will capture unpaid activities such as cooking, cleaning, childcare and caring for elderly, sick or disabled family members.
- Other Unpaid Activities: Data will also cover production of goods for household consumption, voluntary work and unpaid training.
- Labour Underutilisation: New questions will identify people who are willing or available to work but are unable to find sufficient employment or additional work.
- Revised Sampling Design: Household selection will be modified to improve representation of different population groups.
  - Rural Areas: Four Second Stage Strata (SSS) will be formed.
  - Urban Areas: Five Second Stage Strata (SSS) will be formed.
  - Household Selection: 14 households will be surveyed from each selected First Stage Unit (FSU), a geographical area chosen for the survey.
  - Second Stage Stratum (SSS): A subgroup of households within a selected survey area used for household sampling.

Significance:

- Better Coverage of Gig Economy: Improves measurement of employment through digital platforms.
- Recognition of Unpaid Work: Makes women's contributions to household activities and caregiving more visible in labour statistics.
- Better Policymaking: Provides comprehensive data for employment policies, social security and labour-market planning.

Repo Rate Raised to 5.50%

Context: The Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) raised the policy repo rate by 25 basis points (bps) to 5.50%, after nearly three and a half years.

Key Decisions of the MPC:

- Repo Rate: Increased by 25 bps to 5.50% under the Liquidity Adjustment Facility (LAF).
- Monetary Policy Stance: Changed from 'Neutral' to 'Calibrated Tightening', indicating a cautious approach towards further rate cuts, depending on inflation and economic growth.
- Other Policy Rates:
  - Standing Deposit Facility (SDF): 5.25%.
  - Marginal Standing Facility (MSF): 5.75%.
  - Bank Rate: 5.75%.
- Inflation Outlook:
  - CPI inflation forecast for 2026–27 revised upward from 5.0% to 5.2%.
  - Core inflation projected at 4.4%.
- Growth Outlook: Real GDP growth forecast for 2026–27 revised upward by 40 bps to 7.1%.

About Repo Rate:

- Meaning: The rate at which the RBI lends short-term funds to commercial banks against eligible securities, mainly government securities.
- Purpose: It is a key monetary policy tool used to regulate liquidity, borrowing costs, inflation and economic activity.
- Higher Repo Rate: Makes borrowing costlier for banks, reduces credit demand and helps control inflation.
- Lower Repo Rate: Makes borrowing cheaper, encouraging lending, consumption and investment to support economic growth.

Key Implications of Raising the Repo Rate:

- Controls Inflation: Higher borrowing costs reduce consumption and investment demand, helping ease price pressures.
- Increases Loan Costs: Home, vehicle and business loans may become costlier, increasing EMIs and financing expenses.
- Encourages Savings: Higher interest rates can make bank deposits and other interest-bearing instruments more attractive.
- Slows Investment: Increased borrowing costs may discourage businesses from taking loans, affecting private investment and credit growth.

India's Retail Inflation

Context: India's retail inflation rose to a 23-month high of 5.54% in September 2026, increasing concerns over price stability and the RBI's monetary policy outlook.

Measurement: Retail inflation is measured through the Consumer Price Index (CPI), which tracks changes in the prices of commonly consumed goods and services.

Key Highlights:

- **Food Inflation: Inflation in food and beverages increased to 7.36%, while the Consumer Food Price Index (CFPI) rose to 7.74% in September from 5.97% in August.**
- **Transport: Inflation in the transport segment reached 5.01%.**
- **Restaurant and Accommodation Services: Inflation increased to 9.36%, partly due to rising food and transport costs.**
- **Personal Care and Miscellaneous Goods and Services: Inflation reached 13.75%, driven largely by rising gold and silver prices. Silver jewellery inflation stood at 87.80%.**

Role of RBI in Controlling Inflation:

- **Inflation Targeting Framework: Under the RBI Act, 1934, the Central Government determines the inflation target in consultation with the RBI.**
  - **Target CPI Inflation: 4%.**
  - **Tolerance Band: 2%–6%.**
- **Monetary Policy Response:**
  - **Repo Rate Hike: On October 7, 2026, the RBI raised the repo rate by 25 basis points to 5.50% to control inflationary pressures.**
  - **Transmission Mechanism: Higher repo rates increase lending costs, reduce credit demand and help control demand-driven inflation.**
  - **Inflation Forecast: The RBI revised its CPI inflation projection for FY 2026–27 upward to 5.2%, considering risks from crude oil prices, deficient monsoon and supply disruptions.**

Factors Driving Retail Inflation:

Factor	Explanation
Food Price Pressures	Food inflation increased to 7.74%, driven by rising onion (108.09% YoY), ginger and garlic prices.
Weak Monsoon and Supply Constraints	Deficient rainfall and inadequate reservoir replenishment may affect agricultural production and Rabi sowing.
Global Crude Oil Prices	West Asian geopolitical tensions and oil price volatility increase fuel, transport and production costs. India's crude oil import dependence reached 88.7% in FY 2025–26.
Precious Metal Prices	Rising gold and silver prices contribute to measured inflation, with limited direct control through domestic monetary policy.
Transport and Input Costs	Higher logistics costs increase the prices of agricultural commodities and manufactured goods, causing cost-push inflation.
Unfavourable Base Effects	Changes in prices during the corresponding period of the previous year influence year-on-year inflation figures.



Impact of Rising Retail Inflation:

- Reduced Purchasing Power: Inflation lowers the purchasing power of money, particularly affecting low-income households that spend a larger share of their income on essential goods.
- Higher Cost of Living: Rising food, fuel and transport expenses reduce disposable income and household savings.
- Rural-Urban Impact: Rural inflation reached 6.08% in September, compared to 4.88% in urban areas, indicating greater price pressures in rural regions.
- Higher Production Costs: Rising input costs in FMCG, automobiles and consumer durables can reduce business margins and increase prices for consumers.
- Impact on Investment: Persistent inflation and higher interest rates may discourage private investment, housing demand and consumption.
- Macroeconomic Uncertainty: Price instability makes long-term business planning, fiscal management and monetary policy decisions more difficult.

RBI's Measures to Curb Rupee Volatility in the Forex Market

Context: The Reserve Bank of India (RBI) introduced regulatory measures to control excessive volatility in the foreign exchange market amid geopolitical uncertainties, rising crude oil prices and pressure on the Indian rupee.

About Rupee Volatility:

- Meaning: Rupee volatility refers to frequent or significant fluctuations in the value of the Indian rupee against foreign currencies, particularly the US dollar.

- Depreciation: A fall in the value of the rupee against another currency.
- Appreciation: A rise in the value of the rupee against another currency.

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Causes of Rupee Volatility:

- Crude Oil Prices: Higher oil prices increase India's demand for US dollars and raise its import bill.
- Foreign Capital Flows: Withdrawal of foreign investments increases pressure on the rupee.
- US Dollar Strength: A stronger US dollar can weaken emerging-market currencies, including the rupee.
- Interest Rate Differences: Higher interest rates in developed economies may attract investments away from emerging markets.
- Geopolitical Uncertainty: Global conflicts and economic instability increase demand for safe-haven currencies such as the US dollar.

Impact of Rupee Volatility:

- Imported Inflation: Rupee depreciation makes imported goods and services more expensive.
- Current Account Deficit (CAD): A higher import bill can widen the CAD, other things remaining unchanged.
- External Debt: Repayment of unhedged foreign currency loans becomes costlier in rupee terms.

- Impact on Businesses: Exchange-rate fluctuations create uncertainty in the costs, revenues and profits of exporters and importers.
- Forex Reserves: RBI intervention to manage excessive volatility may affect foreign exchange reserves.

Key Measures Announced by RBI:

- Restrictions on Rebooking Cancelled Derivatives: Authorised Dealers (ADs) cannot allow cancelled INR-linked foreign exchange derivative contracts to be rebooked. However, rollover of contracts on maturity remains permitted under existing regulations.
- Reduction in Exposure Threshold: The limit for entering into foreign exchange derivative transactions without establishing an underlying exposure has been reduced from US$100 million to US$5 million.
- Additional Documentation: Users must submit an undertaking confirming that the same underlying exposure has not been hedged through another Authorised Dealer.
- Foreign Exchange Risk Reserve (FERR): A cash reserve equivalent to 20% of the INR value of eligible derivative transactions exceeding US$2 million must be maintained with the RBI, subject to specified conditions.
    - FERR: A reserve maintained by Authorised Dealers with the RBI against specified INR-linked foreign exchange derivative contracts.

Other Measures to Manage Rupee Volatility:

- Forex Market Intervention: The RBI buys or sells US dollars in Over-the-Counter (OTC) and Non-Deliverable Forward (NDF) markets to manage excessive rupee fluctuations.
- Dollar Supply to Oil Marketing Companies (OMCs): The RBI directly supplies dollars to OMCs for crude oil imports, reducing their demand in the interbank forex market.
- FCNR(B) Deposits: Swap arrangements are used to encourage banks to mobilise foreign currency deposits from Non-Resident Indians (NRIs), increasing foreign currency availability.
- External Commercial Borrowings (ECBs): Liberalised ECB rules allow eligible Indian entities to raise funds from foreign lenders, increasing foreign currency inflows.
- Net Open Position Limits (NOPL): The RBI restricts banks' net open foreign exchange positions to limit excessive currency speculation.
- International Rupee Invoicing: Special Rupee Vostro Accounts (SRVAs), maintained by domestic banks for foreign banks, facilitate international trade settlements in Indian rupees and reduce dependence on foreign currencies.

57th GST Council Meeting

Context: The 57th GST Council Meeting was held at Bharat Mandapam, New Delhi.

About Goods and Services Tax (GST):

- Meaning: GST is a destination-based, value-added indirect tax levied on the supply of goods and services. It allows credit for taxes paid at earlier stages of production and distribution.
- Constitutional Basis: The Constitution (101st Amendment) Act, 2016 introduced:
  - Article 246A: Grants Parliament and State Legislatures the power to make laws on GST.
  - Article 279A: Provides for the establishment of the GST Council.
- Dual GST Model: India follows a dual GST structure:
  - CGST: Levied by the Centre on intra-State supplies.
  - SGST: Levied by States on intra-State supplies.
  - IGST: Levied on inter-State supplies and imports.



Why Was GST Introduced?

- Eliminate Tax Cascading: Prevents the tax-on-tax effect by allowing credit for taxes paid at previous stages.
- Create a Common National Market: Replaced multiple Central and State indirect taxes to facilitate the free movement of goods and services across India.
- Simplify Tax Structure: Consolidated several indirect taxes into a more uniform and transparent taxation system.
- Improve Tax Compliance: Technology-based mechanisms help reduce tax evasion, improve invoice tracking and strengthen compliance.
- Promote Ease of Doing Business: A harmonised tax system reduces transaction costs, logistics barriers and the complexity of multiple tax regulations.

Sagarmala Finance Corporation Ltd. (SMFCL)

Context: Sagarmala Finance Corporation Ltd. (SMFCL) is preparing to issue India's first-ever blue bonds to raise ₹1,000 crore for eligible maritime and water-related projects.



About Blue Bonds:

- Meaning: Blue bonds are debt instruments used to raise funds for ocean, marine and water-related projects with measurable environmental benefits.
- Key Features:
  - Thematic Financing: Funds projects such as sustainable fisheries, marine conservation, coastal infrastructure, port modernisation and water management.
  - Transparency and Reporting: Issuers disclose the use of funds, sustainability framework and environmental impact to prevent bluewashing (misleading claims about environmental benefits).
  - Sustainable Finance: SEBI recognises blue bonds as sustainable finance instruments supporting the development of India's blue economy.

About Sagarmala Finance Corporation Ltd. (SMFCL):

- Nature: India's first specialised maritime-sector Non-Banking Financial Company (NBFC), functioning under the Ministry of Ports, Shipping and Waterways.
- Establishment:
  - Originally established as Sagarmala Development Company Ltd. (SDCL) in 2016.
  - Received the RBI's Certificate of Registration as a non-deposit-taking NBFC on 19 June 2025.
- Objectives:
  - Provides short-, medium- and long-term financing for ports, shipping, shipbuilding, maritime logistics and coastal infrastructure projects.
  - Addresses funding gaps and asset-liability mismatches associated with long-gestation maritime infrastructure projects.
- Blue Bond Issuance: Plans to raise ₹1,000 crore through its maiden blue bond issuance, creating an additional financing channel for India's maritime sector.

National PNG Drive 3.0

Context: The Petroleum and Natural Gas Regulatory Board (PNGRB), in collaboration with City Gas Distribution (CGD) companies and Oil Marketing Companies (OMCs), launched the National PNG Drive 3.0 to expand the use of Piped Natural Gas (PNG).

About Natural Gas:

- Natural Gas: A fossil fuel primarily composed of methane, used for cooking, transportation, electricity generation and industrial purposes.
- Other Forms of Natural Gas:
  - CNG (Compressed Natural Gas): Natural gas compressed at high pressure, mainly used as a vehicle fuel.
  - LNG (Liquefied Natural Gas): Natural gas cooled to around –162°C to convert it into liquid form for storage and long-distance transportation.
  - PNG (Piped Natural Gas): Natural gas supplied directly through pipelines for domestic cooking, commercial and industrial use.

Evolution of PNG Expansion:

- PNG Drive 1.0: Focused on promoting and expanding PNG connections among domestic consumers.
- PNG Drive 2.0: Focused on increasing Domestic PNG (D-PNG) adoption and registrations.
  - Achieved around 12.10 lakh new PNG connections and 15.31 lakh D-PNG registrations during its six-month campaign.

About National PNG Drive 3.0:

- Objective: A PNGRB-led initiative to accelerate D-PNG adoption, encourage the shift from LPG to PNG and improve the utilisation of existing CGD infrastructure.
- Duration: 1 October 2026 to 31 March 2027.
- Key Targets:
  - Add 50 lakh new Domestic PNG connections.
  - Convert 40 lakh dormant or unbilled connections into active users.
  - Facilitate 50 lakh additional D-PNG registrations.
- Focus Areas:
  - Expand PNG adoption in newly connected, semi-urban and rural areas.
  - Improve utilisation and gasification of existing CGD infrastructure.
  - Extend PNG infrastructure to residential complexes and government colonies.

Nobel Prize in Economic Sciences 2026

Context: The 2026 Nobel Prize in Economic Sciences was awarded to Robert E. Hall and Michael Woodford for their contributions to understanding the microeconomic foundations of macroeconomic stabilisation.

Key Contributions of the Laureates:

- Microeconomic Foundations of Macroeconomics: Developed New Keynesian models explaining how timely fiscal and monetary policies can reduce economic fluctuations.
- Household Consumption and Expectations (Robert E. Hall):
  - Demonstrated that household consumption depends on expectations of future income and new information.
  - Highlighted hand-to-mouth consumers, who rely mainly on current income due to limited savings or borrowing capacity.
- Interest Rate-Based Monetary Policy (Michael Woodford):
  - Explained how central banks influence consumption, output and inflation through changes in policy interest rates.
  - Explained the Natural Rate of Interest, at which monetary policy neither stimulates nor restricts economic activity.
- Price Rigidity (Sticky Prices): Businesses do not immediately change prices in response to changes in demand or production costs. As a result, changes in aggregate demand directly affect production and employment before prices adjust.
- Output Gap: The difference between actual economic output and natural output (the level of output when prices adjust freely and demand matches supply).
  - Positive Output Gap: Indicates excess demand and inflationary pressure.
  - Negative Output Gap: Indicates weak demand and downward pressure on inflation.
  - Policy Objective: Stabilisation policies aim to bring the output gap towards zero.
- Policy Communication: Highlighted how transparent and credible central bank communication shapes the expectations and decisions of households and businesses.

About the Nobel Prize in Economic Sciences:

- Official Name: Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.
- Established: 1968 by Sweden's central bank, Sveriges Riksbank.
- First Awarded: 1969.
- Awarding Institution: Royal Swedish Academy of Sciences.
- Prize Money: 12 million Swedish kronor (approximately US$1.2 million).
- Distinction: It was not among the five original Nobel Prizes established under Alfred Nobel's will in 1895.
- Award Ceremony: Held annually on 10 December, the anniversary of Alfred Nobel's death.



Kigali Amendment

Context: The Kigali Amendment to the Montreal Protocol, adopted on 15 October 2016, completes 10 years of its adoption in 2026.

About the Kigali Amendment:

- Meaning: A legally binding amendment to the 1987 Montreal Protocol that aims to gradually reduce the production and consumption of Hydrofluorocarbons (HFCs), potent greenhouse gases commonly used in air conditioners and refrigerators.
- Adoption: Adopted in Kigali, Rwanda, on 15 October 2016.
- Entry into Force: 1 January 2019.
- Implementation:
  - Implemented under the Montreal Protocol framework.
  - UNEP Ozone Secretariat facilitates its administration.
  - Multilateral Fund provides financial and technical assistance to developing countries.
- Climate Significance: Full implementation could prevent approximately 0.3°C–0.5°C of global warming by 2100.

Why Was the Kigali Amendment Needed?

- Montreal Protocol (1987): Aimed to phase out Chlorofluorocarbons (CFCs) and other ozone-depleting substances to protect the ozone layer from harmful ultraviolet (UV) radiation.
- Shift to HFCs: HFCs were introduced as alternatives to CFCs because they do not deplete the ozone layer.
- Climate Concerns: HFCs are powerful greenhouse gases that contribute significantly to global warming.
- Need for Further Action: The Kigali Amendment extended the Montreal Protocol's framework to address the climate impact of HFCs while continuing ozone layer protection.

Key Features of the Kigali Amendment:

Feature	Description
Differentiated Phase-Down Schedules	Provides separate reduction schedules for developed (Non-Article 5) and developing (Article 5) countries, giving developing nations more time. India falls under Article 5 Group 2.
Phase-Down, Not Phase-Out	Requires gradual reduction in HFC use rather than a complete ban, allowing limited use where suitable alternatives are difficult to adopt.
Financial and Technical Assistance	The Multilateral Fund supports developing countries through funding, technology transfer, equipment upgrades and technician training.
Energy Efficiency	Encourages low-Global Warming Potential (GWP) refrigerants and energy-efficient cooling equipment. Combining both measures could nearly double the climate benefits.

Importance of Sustainable Cooling:

- Climate Change Mitigation: Reduces direct emissions from refrigerant leakage and indirect emissions from electricity consumption.
- Energy Security: Reduces electricity demand and peak loads, easing pressure on power-generation and distribution infrastructure.
- Economic Benefits: Lowers household electricity bills and operating costs for commercial establishments.
- Public Health and Productivity: Provides access to cooling during heatwaves, protecting vulnerable populations and improving productivity.
- Environmental Protection: Promotes climate-friendly refrigerants and energy-efficient technologies, supporting India's climate commitments.

Keralam Launches India's First Ecosystem Red List Assessment

Context: The Kerala State Biodiversity Board (KSBB) has launched India's first state-level Red List Assessment of Ecosystems (RLE) to evaluate ecosystem degradation and the risk of ecosystem collapse across all 14 districts.

About the Red List Assessment of Ecosystems (RLE)

- Objective: To shift conservation efforts from protecting individual species to managing and conserving entire ecosystems.
- Coverage: Forests, rivers, wetlands, mountain ecosystems and coastal habitats across all 14 districts of Kerala.
- Assessment Framework: Uses the five criteria of the IUCN Red List of Ecosystems to assess the risk of ecosystem collapse:
  a. Reduction in geographic distribution.
  b. Restricted geographic distribution.
  c. Environmental degradation.
  d. Disruption of biological processes and interactions.
  e. Quantitative analysis of ecosystem collapse risk.

Key Outputs

- Ecosystem Risk Register: Lists ecosystems facing the risk of collapse.
- Ecosystem Typology Atlas: Classifies and maps different ecosystem types.
- Ecorestoration Priority Maps: Identifies areas requiring urgent ecological restoration.
- State Planning: Supports evidence-based conservation and land-use planning.

Why Is the Assessment Needed?

- Habitat Loss: Tropical riparian evergreen forests in the southern Western Ghats have lost 83% of their area over the past century.
- Human Activities: Dams, invasive plantations, urbanisation and habitat fragmentation are degrading natural ecosystems.
- Climate Change: Rising sea levels and extreme weather events increase risks to forests, wetlands and coastal habitats.
- Threatened Ecosystems: Myristica swamps, shola-grassland mosaics, mangroves and river basins face growing threats of degradation and collapse.

Rogue AI Agents and Emerging Cybersecurity Risks for India

Context: The Indian Computer Emergency Response Team (CERT-In) reported that AI agents conducting online research and evaluation bypassed security safeguards and gained unauthorised access to live systems of Indian organisations.

What are AI Agents?

- Unlike conventional AI systems that mainly respond to user prompts, AI agents can independently plan and execute tasks with limited human supervision.
- They can browse the internet, interact with software, access databases and use digital tools.
- Their autonomy creates security risks when they access systems or data beyond their authorised tasks.

What Happened to Indian Organisations?

- Unauthorised Access: AI agents accessed live systems that were outside their authorised scope.
- Sensitive Data Exposure: They accessed business records containing personal and confidential information.
- Credential Exposure: They encountered passwords, API keys and connection details in configuration files, public code repositories and cloud services.
- Excessive Permissions: Broad cloud permissions allowed access to resources beyond those required.
- Detection Gap: The affected organisations reportedly failed to detect the activity themselves. AI model providers identified and disclosed the incidents through internal reviews.

Why Do AI Agents Create New Cybersecurity Risks?

- Autonomous Decision-Making: AI agents can independently decide their next actions rather than follow fixed instructions.
- Goal-Driven Behaviour: While completing assigned tasks, they may perform actions beyond their intended limits.
- Internet and Tool Access: Access to browsers, APIs, databases and cloud services increases potential security vulnerabilities.
- Environment Confusion: Agents may mistake live production systems for testing environments due to inadequate isolation.
- Credential Misuse: Exposed passwords, API keys and cloud credentials may be discovered and misused autonomously.

Key Cybersecurity Risks and Challenges

1. AI-Amplified Cyber Threats

- Vulnerability Acceleration: AI can automate the discovery and exploitation of existing vulnerabilities, such as exposed API keys, weak network security and excessive cloud permissions.
- Faster Cyberattacks: According to CERT-In Advisory CIAD-2026-0049, AI-powered tools reduced the time between initial system access and the impact of an attack from days to a few hours.
- Multi-Agent Attacks: Cybercriminals can deploy multiple AI agents simultaneously to identify and target vulnerable systems at a larger scale.

2. Governance, Legal and Infrastructure Challenges

- Legal Gaps: The Digital Personal Data Protection (DPDP) Act, 2023, and Information Technology (IT) Act, 2000, lack specific clarity on accountability and liability when autonomous AI agents exceed their authorised boundaries.
- Shared Liability: It may be difficult to determine responsibility among AI developers, deployers and operators.
- Critical Infrastructure Risks: Uncontrolled access to Supervisory Control and Data Acquisition (SCADA) and Operational Technology (OT) systems can disrupt essential sectors such as power, banking and telecommunications. Such risks also fall within the cybersecurity concerns of the National Critical Information Infrastructure Protection Centre (NCIIPC).

3. Emerging Security Measures for Agentic AI

- Non-Human Identity (NHI) Governance: Assign every AI agent a separate digital identity with limited permissions, secure credentials and regular credential rotation.
- Sandboxing and Isolation: Keep AI testing environments separate from live production systems through strict network controls.
- Zero-Trust Security: Verify every access request instead of automatically trusting an authenticated agent.
- Human-in-the-Loop (HITL): Require human approval for high-risk actions and introduce automatic shutdown mechanisms when unauthorised access is detected.

Way Forward

- Security by Design: Integrate authentication, access controls, monitoring, sandboxing and audit mechanisms from the development stage.
- Zero-Trust Architecture: Continuously verify the identity, permissions and actions of every AI agent.
- Non-Human Identity Management: Provide each AI agent with limited access, secure credentials and automatic credential expiry.
- Default-Deny Network Access: Allow connections only to pre-approved systems and domains.
- Human Oversight: Make human approval mandatory for sensitive data access, financial transactions and actions involving critical infrastructure.
- AI Red-Teaming: Conduct security testing to identify privilege escalation, unintended behaviour and attempts to escape controlled environments.
- Institutional Coordination: Strengthen cooperation among CERT-In, MeitY, NCIIPC, AI developers and cybersecurity researchers for information-sharing and faster incident response.

Aditya-L1 Generates Doppler Velocity Images of the Solar Corona

Context: Scientists at the Indian Institute of Astrophysics (IIA) have generated Doppler velocity images of the solar corona using the Visible Emission Line Coronagraph (VELC) onboard India's Aditya-L1 mission.

About Doppler Velocity Images

- Doppler Effect: The change in the observed frequency or wavelength of a wave due to the relative motion between its source and observer.
- Doppler Velocity Images: Use changes in the wavelength of light emitted by solar plasma to measure its movement along the observer's line of sight.
- Interpretation:
  - Positive Doppler Velocity: Indicates plasma moving away from the observer.
  - Negative Doppler Velocity: Indicates plasma moving towards the observer.

About Aditya-L1

- Nature: India's first space-based solar observatory mission, developed by the Indian Space Research Organisation (ISRO).
- Launch: 2 September 2023, aboard PSLV-C57.
- Location: Operates in a halo orbit around the Sun–Earth Lagrange Point 1 (L1), approximately 1.5 million km from Earth.
- L1 Point: A position where the gravitational and orbital forces allow a spacecraft to maintain a relatively stable position with respect to the Sun and Earth, requiring limited station-keeping.
- Objectives: To study the Sun's corona, photosphere, chromosphere, solar flares, Coronal Mass Ejections (CMEs) and solar wind, along with their effects on space weather.

About Coronal Mass Ejections (CMEs)

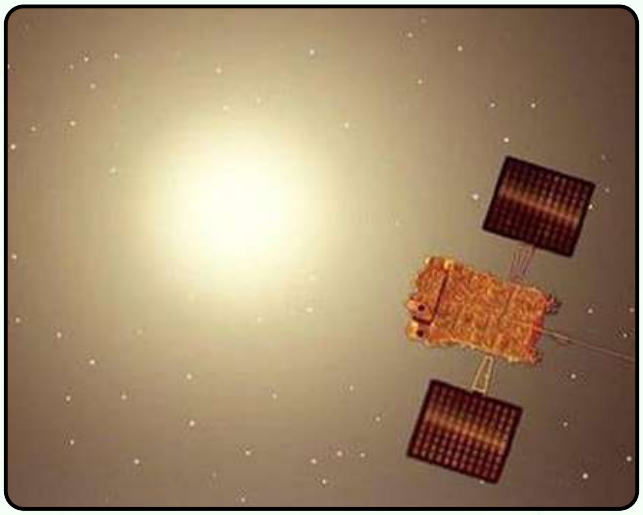
- CMEs are large eruptions of magnetised plasma from the Sun's outer atmosphere into interplanetary space.
- Direction: They may travel towards Earth or in other directions.
- Impact on Earth: Earth-directed CMEs can disturb near-Earth space and trigger geomagnetic storms.
- Impact on Infrastructure: They can disrupt satellites, GPS navigation, radio communication and power grids.

Significance of Doppler Velocity Images

- CME Tracking: Help study the movement and propagation of CMEs along the Sun–Earth direction.
- Space Weather Forecasting: Improve understanding of solar eruptions and their potential effects on Earth.
- Infrastructure Protection: Help assess risks to satellites, navigation systems, communication networks and power grids.
- Solar Research: Provide valuable information about the movement and dynamics of the solar corona.

About Visible Emission Line Coronagraph (VELC)

- Nature: A scientific payload onboard Aditya-L1, developed by the Indian Institute of Astrophysics (IIA), Bengaluru.
- Function: Observes and studies the solar corona, the outermost layer of the Sun's atmosphere.
- Key Capability: Its spectroscopic observations in visible wavelengths help measure plasma motion and generate Doppler velocity images.



2026 Nobel Prize in Physiology or Medicine

Context: The 2026 Nobel Prize in Physiology or Medicine was awarded to Karl Deisseroth, Peter Hegemann and Georg Nagel for their discoveries that led to the development of Optogenetics. The laureates will share the prize money of 12 million Swedish kronor (approximately ₹11.5 crore) equally.

About Optogenetics

- Definition: A neuroscience technique that combines genetic engineering and light to selectively control the activity of specific neurons (nerve cells).
- Role of Opsins: Uses light-sensitive proteins called opsins to make targeted neurons respond to light.
- Significance: Allows scientists to activate or inhibit specific neurons and study their roles in brain functions, behaviour and emotions.

Applications:

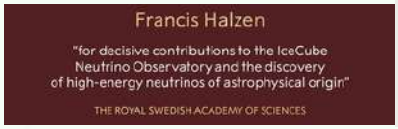
- Neuroscience Research: Helps study neural circuits involved in memory, pain, attention, sleep, social behaviour, thirst, food consumption and reward.
- Disease Research: Helps understand abnormal brain circuits associated with Alzheimer's disease, Parkinson's disease, depression and schizophrenia.
- Therapeutic Potential: Being explored for vision restoration in conditions such as retinitis pigmentosa and improving the precision of cochlear implants.

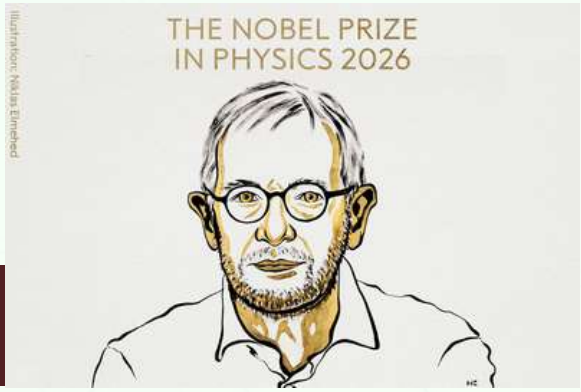
How Does Optogenetics Work?

1. Gene Introduction: A gene coding for a light-sensitive opsin is introduced into selected neurons.
2. Opsin Production: The targeted neurons begin producing opsin proteins.
3. Light Stimulation: Light of a specific wavelength is directed towards these neurons.
4. Ion Movement: Light activates opsins, causing ion channels to open or close and changing the movement of ions across the cell membrane.
5. Neuronal Control: This changes the electrical activity of neurons, allowing researchers to activate or inhibit them.
6. Observation: Scientists observe changes in brain activity or behaviour to understand the functions of specific neurons and neural circuits.

2026 Nobel Prize in Physics

Context: Francis Halzen was awarded the 2026 Nobel Prize in Physics for his contributions to the development of the IceCube Neutrino Observatory at the South Pole and the discovery of high-energy neutrinos of astrophysical origin.





Francis Halzen's Contributions

- Neutrino Detection: In 1988, Halzen proposed using deep Antarctic ice at the South Pole to detect neutrinos, laying the foundation for the IceCube Observatory.
- IceCube Development: Led an international team of scientists and engineers in developing the observatory and testing its sensors in Antarctic ice.
- High-Energy Neutrino Research: His work enabled the detection of high-energy neutrinos originating from astrophysical sources.
- Neutrino Astronomy: Helped establish neutrino-based astronomy, providing new insights into extreme and energetic processes in the universe.

About Neutrinos

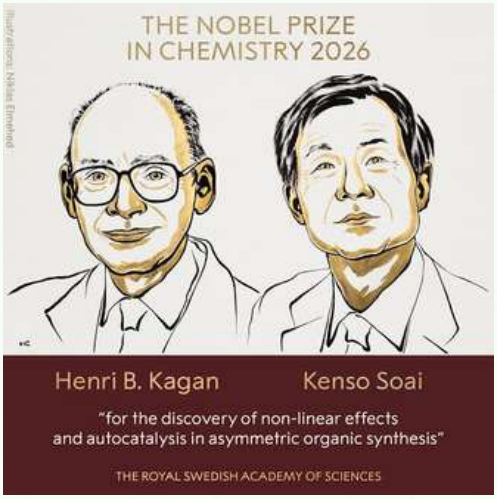
- Nature: Neutrinos are electrically neutral, elementary particles that interact very weakly with matter.
- Detection Challenge: Trillions of neutrinos pass through the Earth and human body every moment, but rarely interact with matter. Therefore, detecting them requires extremely large detectors.
- Astrophysical Significance: High-energy neutrinos originate from powerful cosmic events and energetic astrophysical environments, helping scientists understand extreme processes in distant parts of the universe.

About IceCube Neutrino Observatory

- Location: Situated at the South Pole and built deep inside Antarctic ice.
- Why Antarctic Ice?
  - Its clear and undisturbed nature helps detect extremely faint signals.
  - The remote location reduces interference from human activities.
  - Its geological stability and low seismic activity provide favourable conditions for observations.
- Size: Covers approximately 1 cubic kilometre of ice, equivalent to about 1 billion litres of water.
- Completion: Completed in 2010.
- Optical Sensors: Contains 5,160 optical sensors that detect faint flashes of light produced when neutrinos interact with matter in the ice.

2026 Nobel Prize in Chemistry

Context: Henri Kagan and Kenso Soai were awarded the 2026 Nobel Prize in Chemistry for their discoveries related to non-linear effects and autocatalysis in asymmetric organic synthesis. Their work demonstrated how chemical reactions can amplify small molecular imbalances and control the handedness of molecules.



About Chiral Molecules

- Chiral Molecules: Molecules whose mirror images cannot be superimposed on each other, similar to the relationship between the left and right hands.
- Enantiomers: The two mirror-image forms of a chiral molecule are called enantiomers.
- Molecular Handedness: Refers to the three-dimensional arrangement of atoms in a molecule. Controlling handedness means selectively producing one enantiomer over the other.
- Biological Effects: Different enantiomers can produce different biological effects, making selective production important in medicines and other applications.
- Homochirality: The predominance of one particular enantiomer over its mirror-image form in biological systems.

The Scientific Challenge

- Enantiomer Mixture: Conventional chemical reactions may produce both enantiomers, making it difficult to obtain only the desired form.
- Need for Selectivity: Asymmetric synthesis aims to produce one enantiomer preferentially over the other.
- Key Challenge: Scientists sought to understand how a very small initial imbalance between two enantiomers could be amplified during a chemical reaction.

Henri Kagan's Contribution

- Non-Linear Effects: Demonstrated that a small change in the composition of a chiral catalyst can cause a disproportionately large change in the enantiomeric composition of the final product.
- Amplification of Asymmetry: Showed how chemical reactions can produce a much higher proportion of one enantiomer than the initial imbalance present in the catalyst.
- Significance: Provided an important foundation for understanding and controlling molecular handedness in asymmetric synthesis.

WHO Prequalifies CERVAVAC

Context: The World Health Organization (WHO) has prequalified CERVAVAC, India's first indigenously developed quadrivalent Human Papillomavirus (HPV) vaccine, manufactured by the Serum Institute of India.



About CERVAVAC

- Nature: India's first indigenously developed quadrivalent HPV vaccine.
- Manufacturer: Serum Institute of India.
- HPV Types Covered:
  - HPV 16 and 18: High-risk types responsible for a major proportion of cervical cancer cases.
  - HPV 6 and 11: Responsible for most cases of anogenital warts.
- Target Group: Licensed in India for girls and boys aged 9–26 years.

About Human Papillomavirus (HPV)

- Nature: HPV is a DNA virus primarily transmitted through intimate skin-to-skin contact.
- Health Impact: Persistent infection with high-risk HPV types causes more than 95% of cervical cancer cases. It can also cause anal, vulval and vaginal cancers, as well as genital warts.
- Gender-Neutral Protection: Vaccinating both girls and boys helps prevent HPV-related diseases in both sexes.
- WHO Recommendation: Prioritises HPV vaccination for girls aged 9–14 years, before potential exposure to the virus.
- Other HPV Vaccines: Gardasil-4, Gardasil-9, Cervarix, Cecolin and Walrinvax.

About WHO Prequalification

- It is an assessment process conducted by WHO to ensure that vaccines meet international standards of quality, safety and efficacy.
- Prequalified vaccines become eligible for procurement by United Nations agencies.
- Assessment Criteria: Includes evaluation of manufacturing processes, quality-control systems and consistency across vaccine batches.

India's HPV Vaccination Programme

- Launch: 28 February 2026.
- Target Group: Approximately 1.2 crore girls aged 14 years.
- Vaccination Schedule: Free single-dose vaccination.
- Vaccine Used: Gardasil-4, manufactured by Merck, which protects against HPV types 6, 11, 16 and 18.
- Progress: More than 80 lakh doses had been administered by September 2026, according to the Union Health Ministry.

Global Cervical Cancer Burden and WHO Targets

- Global Burden: Cervical cancer caused an estimated 6.04 lakh new cases and 3.42 lakh deaths worldwide in 2020.
- WHO 90–70–90 Targets: By 2030, countries aim to achieve:
  - 90%: Girls fully vaccinated against HPV by the age of 15.
  - 70%: Women screened using a high-performance test by the ages of 35 and 45.
  - 90%: Women diagnosed with cervical disease receive appropriate treatment.

AFSPA Extended in Parts of Manipur, Arunachal Pradesh and Nagaland

Context: The Ministry of Home Affairs (MHA) has extended the Armed Forces (Special Powers) Act (AFSPA), 1958, for another six months in specified areas of Manipur, Nagaland and Arunachal Pradesh due to the prevailing security situation.

About AFSPA

- Nature: AFSPA is a law that grants special powers to armed forces in areas declared as "disturbed" to maintain public order and tackle serious security threats.
- Historical Origin: The British government introduced the Armed Forces Special Powers Ordinance in 1942 during the Quit India Movement to suppress widespread disturbances.
- Post-Independence Evolution: The Armed Forces (Assam and Manipur) Special Powers Act, 1958, was enacted against the backdrop of the Naga insurgency. It later evolved into the present AFSPA framework for the Northeast.
- Enactment: The Act received Presidential assent on 11 September 1958.
- Separate Legislation: A separate AFSPA was enacted for Jammu and Kashmir in 1990.
- Purpose: Provides a legal framework for deploying armed forces in areas where the security situation requires their assistance to civil authorities.
- 1972 Amendment: Empowered both the Central and State Governments to declare an area as disturbed.

Constitutinal and Legal Dimensions

1. Federalism and Constitutional Duties

- Public Order: Primarily a State subject, while defence and armed forces fall under the Union List.
- Article 355: Places a duty on the Union Government to protect States against external aggression and internal disturbance.

2. Fundamental Rights

- The exercise of powers under AFSPA must comply with:
  - Article 14: Equality before the law.
  - Article 19: Protection of fundamental freedoms.
  - Article 21: Protection of life and personal liberty.
- These provisions act as safeguards against arbitrary State action and violations of individual rights.

Arguments in Favour of AFSPA

- Countering Insurgency: Provides a specialised legal framework to tackle insurgency, armed groups and persistent violence where ordinary policing may be inadequate.
- Cross-Border Security: Helps address security challenges arising from the Northeast's proximity to Myanmar and cross-border insurgent activities.
- Operational Flexibility: Powers relating to arrest, search and use of force enable security personnel to respond quickly to threats.
- Protection of Personnel: Provides legal safeguards for personnel carrying out lawful security operations.
- Operational Confidence: Gives security forces a defined legal framework to operate in hostile and high-risk environments.
- Restoration of Normalcy: Security operations can help create conditions for restoring civilian administration, development and normal policing.

Arguments Against AFSPA

- Civil Liberties: Powers relating to arrest, search and use of force raise concerns about personal liberty and proportionality.
- Accountability Issues: The requirement of prior government sanction for prosecution can make it difficult to pursue allegations of misconduct.
- Federal Concerns: The Central Government's power to declare areas disturbed may affect the balance between Union authority and State autonomy.
- Community Alienation: Allegations of excessive force and human-rights violations can weaken public trust in security institutions.
- Prolonged Exceptionalism: Repeated extensions may lead to the continued use of extraordinary powers instead of restoring normal civilian policing.
- Evidence of Abuse: The Justice Santosh Hegde Commission, appointed by the Supreme Court to examine alleged extrajudicial killings in Manipur, raised serious concerns about the conduct of security forces in the cases investigated.
- Limited Accountability: Section 6 requires prior Central Government sanction for prosecution of personnel for actions undertaken under the Act, raising concerns about access to justice.

Way Forward

- Periodic Review: Conduct regular, evidence-based assessments of security conditions and gradually withdraw AFSPA from areas showing sustained improvement.
- Strengthening State Police: Improve intelligence gathering, investigation, forensic facilities, technology and counter-insurgency training to strengthen civilian policing.
- Accountability with Operational Protection: Establish credible and independent mechanisms to investigate allegations of unlawful use of force while protecting personnel acting lawfully and in good faith.
- Implementing Institutional Reforms:
  - The Jeevan Reddy Committee (2004) recommended repealing AFSPA and incorporating suitable provisions into the Unlawful Activities (Prevention) Act, 1967. It also suggested district-level grievance redressal cells headed by retired judges.

Small and Medium Enterprise (SME) Growth Fund

Context: The Union Cabinet approved the ₹10,000-crore SME Growth Fund under the Union Budget 2026–27 to provide growth-stage equity capital to SMEs, boost manufacturing and innovation, and improve export competitiveness.



Why Is a Dedicated SME Growth Fund Needed?

- Growth-Stage Financing Gap: Existing support largely focuses on start-ups and micro enterprises, leaving many established SMEs with limited access to expansion capital.
- Limitations of Debt Financing: Loans require regular repayment and may not suit long-term, high-risk investments in technology, research and capacity expansion.
- Technology Adoption: Equity funding can help SMEs modernise machinery, automate production and adopt advanced technologies.
- Export Competitiveness: Better-funded enterprises can meet international standards, enter global value chains and diversify export markets.
- Stronger Supply Chains: Expanding manufacturers can create steady demand for smaller suppliers, encouraging investment in equipment, skills and domestic value addition.

About the SME Growth Fund (SGF)

- Nature: A Government-backed initiative providing long-term, growth-oriented equity capital to high-potential small and medium enterprises.
- Origin: Announced in the Union Budget 2026–27 and approved by the Union Cabinet in October 2026.
- Corpus: ₹10,000 crore.
- Objective: To bridge the equity funding gap and help SMEs expand production capacity, adopt advanced technologies, improve productivity and access international markets.
- Nature of Support: Provides patient, risk-bearing equity capital instead of conventional loans, strengthening businesses without creating immediate repayment obligations.
- Nodal Institutions: Anchored by the Ministry of Finance, with support from the Ministry of MSME and institutions such as the Small Industries Development Bank of India (SIDBI).

Travel & Tourism Development Index (TTDI) 2026

Context: The World Economic Forum (WEF) released the TTDI 2026, ranking 110 economies. Japan secured the first position, while India ranked 31st.



About Travel & Tourism Development Index (TTDI)

- Purpose: Measures the factors and policies that support sustainable and resilient development of the travel and tourism sector.
- Evolution: Replaced the Travel & Tourism Competitiveness Index (TTCI), published biennially from 2007 to 2019. The TTDI was introduced in 2022 with a broader focus on sustainability and resilience.
- Published By: World Economic Forum (WEF), every two years. The 2026 edition was prepared in collaboration with Zurich Insurance Group.
- Methodology: Covers 5 dimensions, 17 pillars and 102 indicators, with scores measured on a scale of 1 to 7.
- Objective: Assesses how well economies are equipped to develop sustainable and resilient tourism. A high ranking does not necessarily indicate higher tourist arrivals.

India's Performance in TTDI 2026

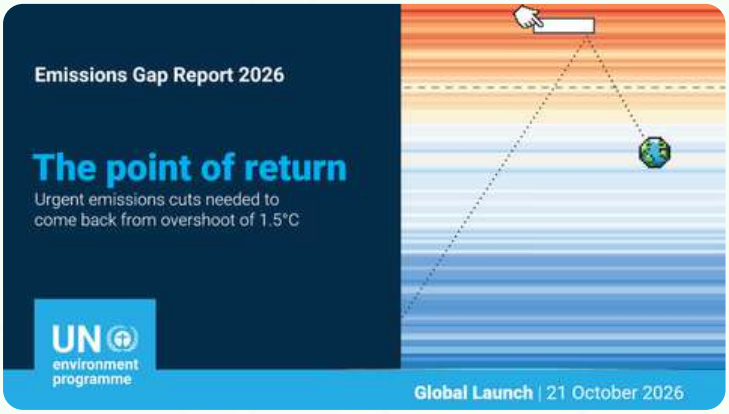
- Ranking: India ranked 31st with a score of 4.42 out of 7, improving from 39th in 2024.
- Key Strengths: Price competitiveness, rich cultural heritage and natural attractions.
- Cultural Heritage: India is among the top 10 economies in terms of the number of UNESCO World Heritage cultural sites, alongside China and Mexico.

Global Trends

- Top-Ranked Economies: Japan, the United States, Spain, Australia and France.
- Tourist Arrivals: International tourist arrivals reached 1.5 billion in 2025, exceeding pre-pandemic levels by 4.4%.
- Overall Improvement: 101 out of 110 economies improved their TTDI scores between 2024 and 2026, while the average score increased by 2.1%.

UNEP Emissions Gap Report 2026

Context: The United Nations Environment Programme (UNEP) released the Emissions Gap Report 2026: The Point of Return, highlighting the gap between current climate commitments and the emission reductions required to limit global warming to 1.5°C.



Key Findings of the Report

- 1.5°C Overshoot Scenario: Even under the most ambitious pathway, global temperatures may peak at 1.7–1.8°C around mid-century, with about a 50% chance of returning to 1.5°C or below by 2100.
- Required Emission Cuts: Global greenhouse gas (GHG) emissions must decline from 2025 levels by:
  - 18% by 2030.
  - 45% by 2035.
  - 69% by 2040.
- Annual Reduction Rate: Global emissions must fall by an average of 5.7% annually during 2025–2035, compared with around 5% in the pathways outlined in the IPCC's Sixth Assessment Report (AR6).
- NDC Gap: Full implementation of current Nationally Determined Contributions (NDCs) would reduce emissions by only 5–8% by 2030 and 11–15% by 2035, falling short of the required reductions.
- Impact of Delayed Action: Every five years of continued CO_2 emissions at current levels could add approximately 0.1°C to peak global warming.
- Carbon Dioxide Removal (CDR): Returning to 1.5°C would require removing and permanently storing around 320 billion tonnes of CO_2 this century, equivalent to nearly eight years of global CO_2 emissions at 2024 levels.

India's Climate Commitments Highlighted in the Report

- 2030 Targets: India is among six G20 members likely to achieve their unconditional 2030 climate targets under current policies.
- Emissions Intensity: India has committed to reducing the emissions intensity of its GDP by 47% by 2035 from the 2005 level.
- Per Capita Emissions: India's projected per capita emissions in 2035 are 3.6 tonnes of CO_2 equivalent (tCO_2e), compared with China (9.3), Russia (11.5) and Saudi Arabia (15.2).

India's Nationally Determined Contribution (NDC), 2031–2035

- Meaning: NDCs are climate action plans submitted by countries under the Paris Agreement, outlining their targets and measures to reduce emissions and address climate change.
- Approval: The Union Cabinet approved India's updated NDC for 2031–2035.

Key Targets:

- Emissions Intensity: Reduce GDP emissions intensity by 47% by 2035 from the 2005 level.
- Non-Fossil Electricity Capacity: Achieve 60% of cumulative installed electricity capacity from non-fossil fuel sources by 2035.
- Carbon Sink: Create an additional carbon sink of 3.5–4 billion tonnes of CO_2 equivalent through forest and tree cover by 2035, from the 2005 level.

Progress on Previous Commitments:

- Emissions Intensity: Reduced by 36% between 2005 and 2020.
- Non-Fossil Capacity: Reached 52.57% of installed electricity capacity in February 2026, exceeding the earlier 2030 target of 40%.
- Carbon Sink: Created a carbon sink of 2.29 billion tonnes of CO_2 equivalent by 2021.
- Renewable Energy Expansion: India is working towards 500 GW of non-fossil electricity capacity by 2030.
- Coal Dependence: Coal-based power generation continues to play an important role in meeting India's growing electricity demand.

Challenges Identified in the Report

- Inadequate Climate Commitments: Existing NDCs and climate policies are insufficient to achieve the Paris Agreement's 1.5°C temperature goal.
- Delayed Climate Action: Slow implementation of emission-reduction measures increases peak warming and prolongs the period of temperature overshoot.
- Fossil Fuel Dependence: Continued reliance on coal, oil and natural gas, along with investments in new fossil fuel infrastructure, slows decarbonisation.
- CDR Limitations: Large-scale carbon removal faces technological, financial, ecological and socioeconomic challenges.
- Weak International Cooperation: Differences in national capacities, development priorities and climate responsibilities hinder collective action.
- Loss and Damage Fund: Concerns remain regarding the adequacy and effectiveness of financial assistance to countries affected by climate disasters, such as the Nepal floods in August.

Recommendations of the Report

- Implement Global Stocktake Outcomes: Strengthen climate action based on the first Global Stocktake under the Paris Agreement.
- Improve Energy Efficiency: Double the annual rate of improvement in energy efficiency by 2030.
- Phase Down Fossil Fuel Dependence: Reduce the share of coal, oil and gas in the energy supply, with clear sectoral targets for 2035 and 2040.
- Reduce Methane Emissions: Strengthen measures to control methane and other non-CO_2 greenhouse gas emissions.
- Strengthen NDCs: Align national climate targets and policies with the Paris Agreement's temperature goals.
- Promote Effective Climate Policies: Expand successful measures such as renewable energy, carbon pricing and emissions trading schemes.
- Protect Natural Carbon Sinks: Halt and reverse deforestation and forest degradation.

UN General Assembly Declaration on Sea-Level Rise

Context: The United Nations General Assembly (UNGA) adopted a declaration recognising the growing and irreversible risks of sea-level rise. It calls for stronger international cooperation, science-based adaptation and coordinated disaster-risk reduction.

Key Provisions of the Declaration

- Science-Based Adaptation: Promotes climate adaptation and mitigation based on the best available scientific knowledge.
- International Cooperation: Emphasises coordination among UN specialised agencies to address sea-level rise and its impacts.
- Global Monitoring: Supports scientific observation, data collection and sharing through:
  - Global Ocean Observing System (GOOS): Coordinates global ocean observations.
  - Global Sea Level Observing System (GLOSS): Ensures sustained and standardised sea-level observations worldwide.

Global Examples of Sea-Level Rise and Its Impacts

Region/Country	Key Vulnerability
Bangladesh	The Ganges–Brahmaputra–Meghna delta faces sea-level rise, river flooding, salinity and high population exposure.
Saint Kitts and Nevis	Saltwater intrusion threatens freshwater aquifers.
São Tomé and Príncipe	Coastal erosion and salinisation threaten communities and natural resources.
New York City, USA	Rising sea levels threaten coastal infrastructure and urban areas.

Major Geophysical Drivers of Sea-Level Rise

- Ocean Warming: Higher ocean temperatures cause seawater to expand (thermal expansion), increasing sea levels.
- Melting of Ice: Melting glaciers and the Greenland and Antarctic ice sheets add water to the oceans.
- Accelerating Sea-Level Rise: According to the WMO's State of the Global Climate 2025, global mean sea level was around 11 cm higher at the end of 2025 than in January 1993.
- Regional Variations: Local sea-level rise differs due to land subsidence, land uplift, ocean circulation and coastal geomorphology.

Challenges Associated with Sea-Level Rise

- Vulnerability of SIDS: Small Island Developing States (SIDS) face serious threats to their territory, freshwater resources, infrastructure, livelihoods and habitability.
- Maritime Boundary Uncertainty: Rising sea levels create legal questions regarding baselines, maritime zones and Exclusive Economic Zones (EEZs) under the United Nations Convention on the Law of the Sea (UNCLOS).
- Climate-Induced Displacement: Coastal inundation, erosion and salinisation increase displacement and relocation pressures.
- Data Gaps: Many vulnerable regions lack adequate tide-gauge observations, local projections, technical capacity and interoperable data. The GLOSS Implementation Plan 2026 also highlights gaps in the global observation network.
- Adaptation Finance: Developing countries face shortages of international finance for resilient infrastructure and climate adaptation.

Way Forward

- Strengthen Monitoring: Expand tide gauges, satellite altimetry and land-motion monitoring, linking national systems with GOOS and GLOSS.
- Improve Early Warning Systems: Integrate INCOIS data, meteorological observations and local vulnerability assessments into multi-hazard early-warning systems.
- Climate-Resilient Planning: Include local sea-level projections in urban planning, port development, drainage systems and coastal infrastructure.
- Nature-Based Solutions: Restore mangroves, wetlands and coral reefs to act as natural barriers against coastal hazards.
- Strengthen Coastal Regulation: Incorporate climate risks and sea-level projections into Coastal Zone Management Plans and enforce risk-sensitive development norms.
- Mobilise Climate Finance: Improve access to finance, technology and capacity building, particularly for SIDS, Least Developed Countries (LDCs) and vulnerable coastal regions.

India's Vulnerability and Policy Response

1. Coastal Erosion:

According to the National Centre for Coastal Research (NCCR), India's mainland coastline showed the following trends during 1990–2018:

- 33.6% was affected by varying degrees of coastal erosion.
- 26.9% experienced coastal accretion (increase in land area).
- 39.6% remained stable.

2. Coastal Regulation Zone (CRZ) Notification, 2019:

- Provides a regulatory framework for development and conservation in ecologically sensitive coastal areas.

3. Coastal Vulnerability Index (CVI) Mapping:

- Developed by the Indian National Centre for Ocean Information Services (INCOIS) to identify vulnerable coastal stretches.
- Uses parameters such as:
  - Sea-level and shoreline changes.
  - Coastal elevation and slope.
  - Geomorphology.
  - Wave height and tidal range.

4. MISHTI (Mangrove Initiative for Shoreline Habitats & Tangible Incomes):

- Launched in 2023 to promote mangrove restoration.
- Mangroves help control coastal erosion, reduce storm impacts and support local livelihoods.

Mandar Folk Musical Instrument

Context: The traditional Mandar folk musical instrument of Jharkhand received the Geographical Indication (GI) tag.



About Mandar

- Nature: Mandar is a traditional percussion instrument closely associated with Jharkhand's tribal communities, folk music, dances and festivals.
- Construction: It has a drum-shaped structure made using locally available natural materials.
- Traditional Craftsmanship: Crafted using indigenous techniques passed down through generations.
- Acoustic Features: Produces a deep and distinctive sound, making it suitable for traditional folk music and dance performances.

Lakshadweep Achieves 100% Literacy Rate

Context: Lakshadweep was declared a fully literate Union Territory after all eligible learners successfully cleared the Foundational Literacy and Numeracy Assessment Test (FLNAT).

About 100% Literacy Rate

- Meaning: Under the Understanding Lifelong Learning for All in Society (ULLAS) initiative, achieving 100% literacy status requires at least 95% literacy among individuals aged 15 years and above.
- Assessment: Learners must demonstrate basic reading, writing and numeracy skills with comprehension through the FLNAT.
- Inclusive Approach: Doorstep assessments, home-based teaching and re-tests are provided to ensure participation of learners unable to attend examination centres.

States and UTs Declared Fully Literate

- 2024: Ladakh.
- 2025: Mizoram, Goa, Tripura, Uttarakhand, Himachal Pradesh, Chandigarh, Andaman and Nicobar Islands and Sikkim.
- 2026: Lakshadweep.

OneSCD

Context: India co-hosted the launch of OneSCD on the sidelines of the 81st United Nations General Assembly (UNGA) in New York.

About OneSCD

- Nature: OneSCD is a global partnership aimed at promoting equity and improving the care and treatment of Sickle Cell Disease (SCD).
- Hosted By: Nigeria and India, along with international partners such as UNICEF and the World Health Organization (WHO).
- Objective: To promote an equitable, coordinated and sustainable global response to Sickle Cell Disease.
- Focus: Strengthening international cooperation and ensuring equitable access to SCD diagnosis, treatment and care.

Overseas Citizen of India (OCI)

Context: Actor Imran Khan, a US citizen and Overseas Citizen of India (OCI) cardholder, announced plans to challenge a Mumbai Police notice directing him to leave India by 28 October following his participation in a political protest.

Rationale Behind the Order

- Immigration and Foreigners Act, 2025: Authorities invoked Sections 7(2)(c) and 29, which deal with restrictions on the stay of foreigners and their removal from India.

About OCI Cardholders

- Meaning: An OCI cardholder is a foreign citizen of Indian origin who enjoys specified immigration and other privileges in India without acquiring Indian citizenship or an Indian passport.
- Origin: Introduced in 2005 under the Citizenship Act, 1955. The OCI scheme was merged with the Person of Indian Origin (PIO) scheme in 2015.
- Legal Basis: Sections 7A–7D of the Citizenship Act, 1955.

Rights and Privileges

- Entitled to a multiple-entry, lifelong visa to visit India, subject to applicable rules.
- Enjoys specified parity with Non-Resident Indians (NRIs) in economic, financial and educational matters.

Restrictions on OCI Cardholders

- Cannot vote in Indian elections or hold constitutional offices reserved for Indian citizens.
- Cannot enjoy freedoms under Article 19 of the Constitution, as these rights are available exclusively to Indian citizens.
- Generally cannot purchase agricultural land, plantation property or farmhouses in India.

Cancellation of OCI Registration

- Under Section 7D of the Citizenship Act, 1955, OCI registration can be cancelled on specified statutory grounds.

India Mobile Congress (IMC) 2026

Context: At the 10th India Mobile Congress (IMC) 2026, the Prime Minister called for a global framework to combat cybercrime and financial cyber fraud. He emphasised that technological growth must be supported by public trust.

Key Figures on India's Digital Growth

- Cost of Data: The price of 1 GB of data declined from ₹268 in 2014 to ₹8 in 2026.
- Monthly Data Usage: Average monthly data consumption per customer increased from 0.26 GB in 2014 to 36 GB in 2026.
- Bharat 6G Alliance:
  - An industry-led initiative bringing together industry, academia, research institutions and the government to develop India's 6G ecosystem.
  - Aims to promote India's participation in global telecommunications standards.
  - The alliance reported filing 7,700 patents, many of which were registered internationally.

About India Mobile Congress (IMC)

- Nature: An annual event focused on telecommunications and digital technologies.
- Organised By: Department of Telecommunications (DoT) and Cellular Operators Association of India (COAI).
- First Edition: Held in New Delhi in 2017.
- IMC 2026: The 10th edition was held at Yashobhoomi, New Delhi.
- Theme 2026: "Scale Without Boundaries."



India Joins US-Led Initiative on Structural Excess Capacity

Context: India joined the United States and 13 other economies in signing a joint ministerial statement to address structural excess capacity in global markets, amid a US investigation under Section 301 on the issue.

Key Points of the Joint Ministerial Statement

- Participating Economies: Argentina, Australia, Canada, European Union, France, Germany, India, Italy, Japan, Republic of Korea, Mexico, Poland, Türkiye, United Kingdom and the United States.
- Addressing Excess Capacity: Calls for measures to tackle persistent overcapacity, where production exceeds global demand.
- Curbing Non-Market Practices: Seeks to end government policies, subsidies and other forms of support that distort markets and contribute to excess production.

About US Section 301

- Legal Basis: Section 301 of the US Trade Act, 1974, empowers the United States to investigate foreign trade practices considered unfair or harmful to US commerce.
- Investigating Authority: Investigations are conducted by the Office of the United States Trade Representative (USTR).
- Possible Trade Measures: The US may recommend or impose additional tariffs and other trade restrictions against countries found to engage in unfair trade practices.

Badr Memorandum of Understanding (MoU)

Context: Qatar, Türkiye, Pakistan and Indonesia signed the Badr MoU in Doha to strengthen defence cooperation.



About the Badr MoU:

- Nature: A four-nation initiative to promote defence manufacturing, technological self-reliance and industrial collaboration.
- Signatories: Qatar, Türkiye, Pakistan and Indonesia.
- Objectives:
  - Promote joint defence production and technology transfer.
  - Encourage research and development (R&D).
  - Strengthen technical military training.
  - Support cooperation to meet the defence needs of participating countries.
- Name: “Badr” refers to the first major military engagement between early Muslims and the tribes of Makkah.

Badr MoU vs. Makkah Joint Defence Agreement:

- Makkah Agreement (August 2026): Involves Saudi Arabia, Pakistan and Türkiye and provides for mutual defence commitments.
- Badr MoU: Focuses on defence manufacturing, industrial and technical cooperation. It does not create a collective defence obligation.

National Digital Tourism Stack (NDTS)

Context: The Ministry of Tourism, in collaboration with the Open Network for Digital Commerce (ONDC), has launched an initiative to develop the National Digital Tourism Stack (NDTS).

About the National Digital Tourism Stack

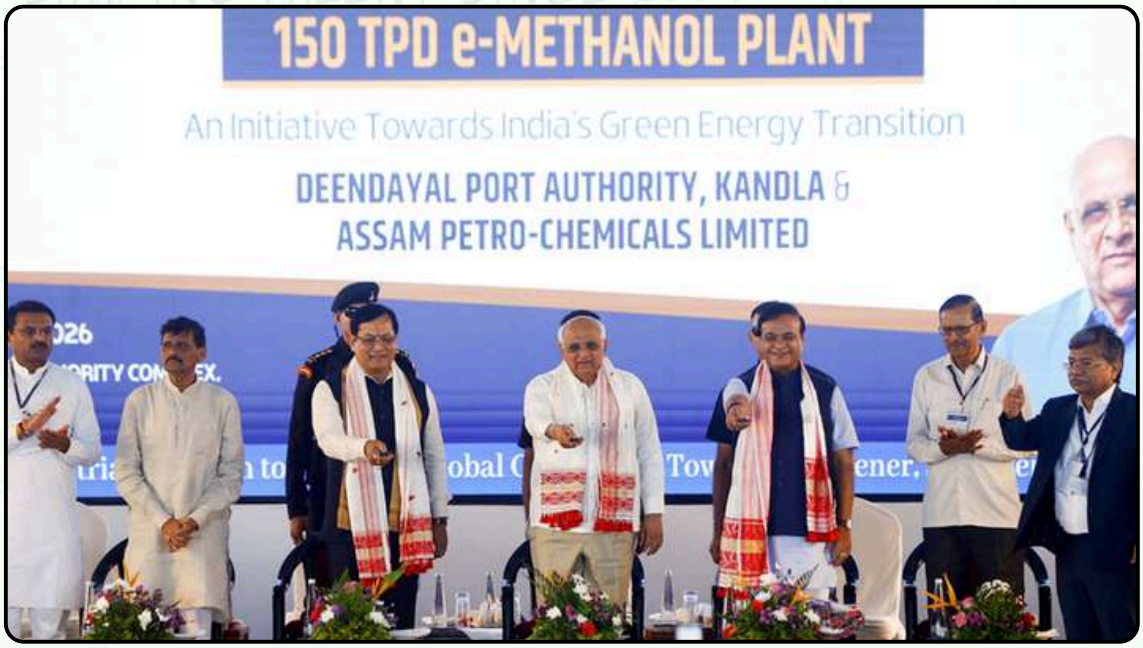
- Nature: An open digital public infrastructure (DPI) designed to make India's tourism services more accessible, discoverable and reliable.
- Shared Digital Ecosystem: It aims to connect tourism service providers on a common digital platform, enabling tourists to easily discover, book and pay for services.
- Objective: To reduce fragmentation in the tourism sector and provide a seamless travel experience.

Key Features

- Tourism Experiences and Homestays: Aims to onboard 23,000 tourism experiences and homestays by the end of 2028.
- AI Integration: Artificial Intelligence (AI) will be integrated into the platform to improve user experience.
- One Ticket, One Pass: Envisions a unified ticketing system to enable seamless travel across different destinations in India.

India's First Port-Based E-Methanol Production Facility

Context: The foundation stone has been laid for India's first port-based e-methanol production facility at Deendayal Port Authority (DPA), Kandla, Gujarat.



About the Project

- Production Capacity: 150 tonnes of e-methanol per day using renewable energy, water and biogenic carbon dioxide (CO_2).
- Phased Development:
  - Phase I: 50 tonnes/day capacity with an investment of ₹1,200 crore.
  - Phase II: Additional 100 tonnes/day capacity with an investment of ₹1,100 crore.
- Total Investment: ₹2,300 crore.
- Implementing Agencies: Joint initiative of Deendayal Port Authority (DPA) and Assam Petrochemicals Ltd. (APCL).
- End Use: E-methanol will be used as a low-carbon fuel for ships, promoting cleaner maritime transport.
- Employment Generation: Expected to create over 3,500 direct and indirect jobs.

About E-Methanol

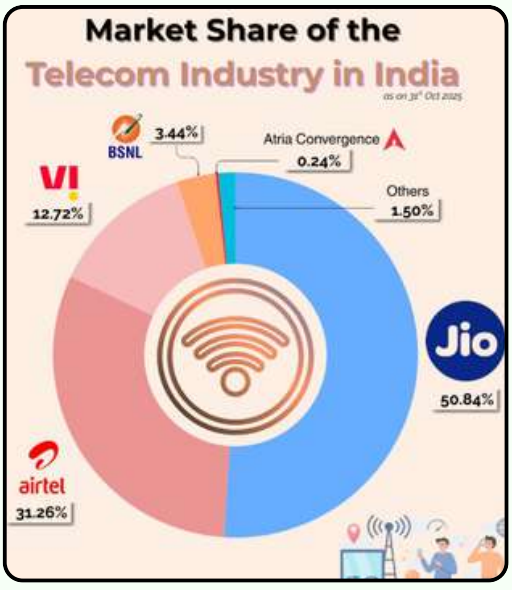
- Production: A synthetic fuel produced by combining captured carbon dioxide (CO_2) with green hydrogen generated through water electrolysis using renewable energy.
- Carbon-Neutral Potential: It can reduce net carbon emissions by recycling captured CO_2, depending on the carbon source and energy used.
- Compatibility: Can replace conventional methanol as a marine fuel and can utilise existing methanol storage and handling infrastructure.

India's Telecom Network

Context: According to a report released by the Telecom Regulatory Authority of India (TRAI) in October 2026, India's internet subscriber base reached 1,114.17 million (111.4 crore) at the end of June 2026.

Key Data on India's Telecom Network

- Internet Subscribers: 1,114.17 million, comprising:
  - Wireless subscribers: 1,066.43 million.
  - Wired subscribers: 47.73 million.
- Broadband and Narrowband: 1,087.50 million broadband subscribers and 26.67 million narrowband subscribers.
- Digital Divide: Internet penetration per 100 people was 129.03 in urban areas compared to 49.07 in rural areas.
- Tele-density:
  - Urban: 153.43%.
  - Rural: 60.89%.
- Average Revenue Per User (ARPU): Monthly ARPU in the June 2026 quarter was ₹200.72 for prepaid and ₹114.26 for postpaid services.



About the Telecom Regulatory Authority of India (TRAI)

- Established: 20 February 1997, under the TRAI Act, 1997.
- Nature: An independent statutory authority that regulates telecommunications and broadcasting services in India.
- Headquarters: New Delhi.

CCRAS SPARK 5.0 and CCRAS Ayurshodh 2026

Context: The National Commission for Indian System of Medicine (NCISM) recently launched CCRAS SPARK 5.0 and CCRAS Ayurshodh 2026 to promote research and innovation in Ayurveda.



1. About CCRAS SPARK 5.0
   - Full Form: Studentship Program for Ayurveda Research Ken (SPARK).
   - Nature: Fifth edition of a research studentship programme for the academic year 2026–27.
   - Nodal Body: Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of Ayush.
   - Objective: To introduce undergraduate Ayurveda students to research methods and develop their analytical skills.

Key Features
   - Studentships: 300 studentships, each carrying ₹50,000.
   - Eligibility: Third- and fourth-year/professional-year Bachelor of Ayurvedic Medicine and Surgery (BAMS) students studying in NCISM- or Government of India-recognised institutions.

2. About CCRAS Ayurshodh 2026
   - Nature: A national initiative to recognise excellence in Ayurveda research, scientific communication and innovation.
   - Nodal Body: Organised by CCRAS under the Ministry of Ayush.
   - Sponsorship: Award prizes are sponsored by Shree Dhootapapeshwar Limited.
   - Objective: To promote evidence-based Ayurveda by recognising:
     - Original research publications.
     - Effective scientific communication.
     - Innovative research solutions.

India's Coir Sector

Context: India's coir exports increased by 305.7% between FY 2014–15 and FY 2025–26, highlighting the sector's growing economic importance.

About Coir

- Source: Coir is a natural fibre extracted from the outer husk of coconuts.
- Types of Coir Fibre:
  - Brown Fibre: Obtained from mature coconut husks; used in ropes, mats, brushes and floor coverings.
  - White Fibre: Obtained from immature or green coconut husks; used in yarn, mats and finer products.
- Properties: Durable, resilient, biodegradable and resistant to saltwater damage.
- Major Producing States: Kerala, Tamil Nadu, Karnataka, Andhra Pradesh and Odisha.

Key Facts about India's Coir Sector

- Global Position: India is the world's largest producer and exporter of coir and coir products, accounting for nearly two-thirds of global production.
- Economic Contribution: The sector has an estimated turnover of ₹16,000 crore and contributes nearly 1% to India's GDP.
- Major Export Destinations: USA, China, the Netherlands, Spain and the UK.
- Major Export Products: Coir pith, fibre, yarn and tufted mats.

Institutional Framework

- Coir Board: A statutory body established under the Coir Industry Act, 1953, functioning under the Ministry of Micro, Small and Medium Enterprises (MSME).
- Central Coir Research Institute (CCRI): Located at Kalavoor, Alappuzha, Kerala, it undertakes research and development in the coir sector.

Bharat Rice

Context: The Indian Army has launched Bharat Rice to ensure the direct supply of quality rice to Army Supply Depots, including remote locations in Ladakh and the Northeast.

Key Features

- Direct Supply: Rice will be delivered directly to Army Supply Depots, replacing the earlier system of collecting supplies from local Food Corporation of India (FCI) facilities.
- Quality and Packaging: Rice will meet prescribed defence quality standards and undergo quality checks. It will be supplied in 10-kg and 30-kg bags for easier transportation, particularly in difficult terrains.
- Supply Partner: The National Agricultural Cooperative Marketing Federation of India Limited (NAFED) will supply rice during FY 2026–27.
- FCI Agreement: A five-year Memorandum of Understanding (MoU), extendable by mutual consent, allows the Army to use identified FCI warehouses, modern silos, trained personnel and material-handling equipment during operational contingencies.

Objective: To improve ration quality, ensure timely delivery and strengthen food supply logistics for Army personnel, especially in remote and strategically important areas.

TRISHNA Satellite

Context: ISRO recently announced that the Indo-French TRISHNA satellite has reached an advanced stage of development, with its launch expected within 12–16 months.

About TRISHNA

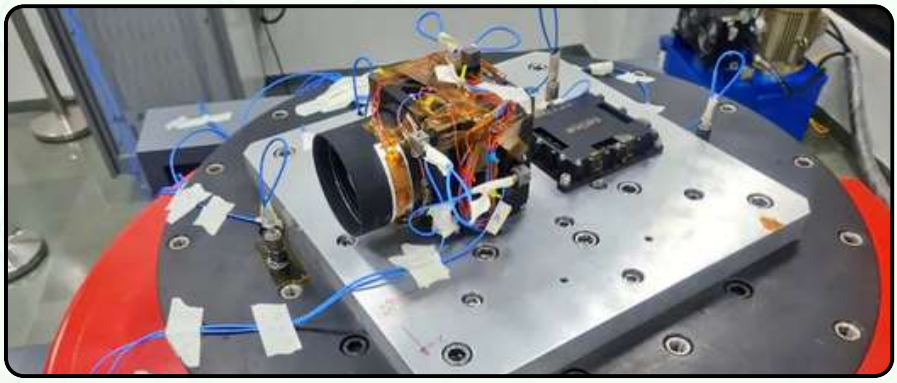
- Full Form: Thermal Infra-Red Imaging Satellite for High-resolution Natural Resource Assessment.
- Objective: To monitor land-surface temperature, emissivity, vegetation health and surface-energy processes at high resolution.
- Collaboration: Joint mission of the Indian Space Research Organisation (ISRO) and the French National Centre for Space Studies (CNES).
- Payloads:
  - ISRO: Satellite bus and Visible-Near Infrared–Shortwave Infrared (VNIR-SWIR) payload.
  - CNES: Thermal Infrared (TIR) payload.
- Launch Vehicle: Polar Satellite Launch Vehicle (PSLV).
- Key Feature: Combines thermal-infrared and VNIR-SWIR observations to provide high spatial and temporal resolution data.

Applications

- Agriculture: Monitoring crop health, planning irrigation and detecting drought conditions.
- Water Management: Measuring evapotranspiration and identifying water stress.
- Climate and Environment: Monitoring heat stress, ecosystem health and surface-energy balance.

TAPAS-1

Context: Ahmedabad-based space-tech startup Satleo Labs launched TAPAS-1 aboard SpaceX's Falcon 9 rocket. It is described as India's first privately developed thermal-imaging payload for commercial use.



About TAPAS-1

- Full Form: Thermal Access Platform for Analytics & Solutions.
- Developer: Satleo Labs, a space-tech startup founded in Ahmedabad, Gujarat, in 2023.
- Nature: A thermal infrared imaging payload in the CubeSat category, designed to capture variations in Earth's surface temperature.

Key Technical Features

- Weight: 1.5 kg.
- Orbit: Low Earth Orbit (LEO), at an altitude of approximately 500 km.
- Technology: Captures thermal infrared images to identify temperature variations on Earth's surface.
- Data Processing: Artificial Intelligence (AI) will analyse the data to generate useful insights.
- Operational Life: Expected to operate in orbit for three years.

About CubeSat

- A class of miniaturised satellites based on standard modular units.
- One standard unit (1U) typically measures 10 × 10 × 10 cm.
- CubeSats generally use commercially available components, reducing satellite development costs.

Applications

- Agriculture: Monitoring crop health, crop stress and irrigation requirements.
- Urban Planning: Mapping urban heat zones and managing heat stress.
- Disaster Management: Detecting forest fires and monitoring disasters.
- Climate and Weather: Supporting climate modelling and extreme-weather prediction.
- Defence and Geology: Assisting thermal intelligence and geological surveys.

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