

## Current Affairs [Prelims] Lexicon - November, 2025



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## Polity & Governance

### 103rd Constitutional Amendment

The **103rd Constitutional Amendment** to the Constitution of India was enacted in 2019, introducing a new reservation category for **Economically Weaker Sections (EWS)** outside the existing SC/ST/OBC quotas. It allows up to **10% reservation** in government jobs and educational institutions for EWS individuals, primarily targeting poor upper-caste citizens. This amendment added Articles **15(6)** and **16(6)**, permitting these reservations in addition to the existing 50% cap. The Supreme Court upheld its constitutionality in 2022-23, ruling that the 50% limit is not rigid. This amendment broadened affirmative action beyond caste to include economic criteria.

#### WHY IN NEWS?

The Supreme Court recently upheld the 103rd Amendment, confirming the legality of EWS quotas, which expanded India's reservation policy beyond caste-based affirmative action to include economic disadvantage among upper castes.

### 41st Amendment of the Constitution (1976)

The **41st Amendment** to the Constitution of India, enacted in 1976, raised the maximum age limit of members of State Public Service Commissions from 60 to 62 years. This amendment aimed to attract more meritorious and experienced civil servants to these commissions by allowing them to serve longer. It was part of broader constitutional reforms during the Emergency period, focusing on administrative efficiency. The amendment affected the tenure and appointment criteria of PSC members but did not specify minimum age or qualifications. It remains a key legal provision influencing the composition and functioning of State PSCs.

#### WHY IN NEWS?

The amendment is referenced regarding proposed further changes to age limits and qualifications for State PSC members to improve recruitment processes.

### Article 143 of Constitution of India

Article 143 empowers the President of India to seek the Supreme Court's advisory opinion on questions of law or fact of public importance. The Court's opinion is consultative, not binding. It was invoked 14 times in the recent case regarding the Governor's role in assenting to state legislature Bills. This article is rarely used but crucial for clarifying constitutional ambiguities. Its origin lies in the Constitution's Part V dealing with the Union government. The provision aims to prevent constitutional crises by providing authoritative judicial guidance on complex legal and constitutional questions referred by the President.

#### WHY IN NEWS?

The Supreme Court recently gave an advisory opinion on 11 of 14 questions under Article 143 concerning the Governor's discretionary powers in assenting to Bills passed by State legislatures.

### Article 15(2) of Constitution of India

Article 15(2) prohibits discrimination by the state and private citizens in access to public



spaces, expanding equality protections beyond state action. It addresses societal discrimination, particularly related to caste, by ensuring all citizens have equal access to public places. This provision is unique compared to Western constitutions, which typically restrict discrimination prohibitions to state actions only. It reflects the Constitution of India's recognition of social realities where non-state actors wield power. Article 15(2) is a legal tool to combat social exclusion and segregation in public life, reinforcing constitutional commitments to social equality and dignity.

#### WHY IN NEWS?

The 76th anniversary of the Constitution of India marks its innovative equality provisions, including Article 15(2), which protects citizens from caste-based discrimination in public spaces by both the state and private individuals.

#### **Article 326 of the Constitution**

Article 326 of the Constitution of India guarantees the right to vote in elections to the Lok Sabha and State Legislative Assemblies to every citizen of India who is 18 years or older. It mandates universal adult suffrage without discrimination based on race, religion, caste, or gender. This article forms the legal basis for electoral roll inclusion criteria. It works alongside Article 324, which vests the Election Commission with superintendence and control over elections. Article 326 is central to the legitimacy of the SIR process, ensuring that all eligible citizens are registered and can exercise their voting rights.

#### WHY IN NEWS?

Article 326 is brought into light in the context of the SIR exercise to emphasize the constitutional right of eligible voters, reinforcing the legal framework for electoral roll revision and voter inclusion.

#### **Article 33 of the Constitution of India**

Article 33 allows the Indian Parliament to modify the application of fundamental rights to members of the armed forces, paramilitary forces, police, and intelligence agencies to ensure proper discharge of their duties. It grants the government authority to restrict rights such as freedom of speech and movement within these services, balancing individual rights with military necessity. This article is unique as it explicitly permits curtailment of constitutional freedoms for discipline and security reasons. It was enacted to maintain armed forces' effectiveness and cohesion, preventing actions that could undermine military discipline or national security while still recognizing constitutional protections in civilian life.

#### WHY IN NEWS?

Article 33 was cited by the Delhi High Court and Supreme Court in upholding Lieutenant Samuel Kamalesan's dismissal for refusing to enter his regiment's temple during mandatory parades, grounding the decision in military necessity and discipline.

#### **Article 370**

Article 370 of the Constitution of India granted special autonomous status to Jammu and Kashmir, allowing it to have its own constitution and autonomy over internal matters



except defense, foreign affairs, and communications. It was introduced in 1949 and formally abrogated in August 2019 by the Government of India. The abrogation led to the dissolution of Jammu and Kashmir's statehood, dividing it into two Union Territories – Jammu & Kashmir and Ladakh. This move resulted in communication blackouts, prolonged curfews, and governance disruptions. It affected local economies, particularly women's entrepreneurship and artisan trades, by restricting market access and causing institutional instability.

#### WHY IN NEWS?

The text discusses the economic and governance disruptions in Srinagar following the dilution of Article 370 in 2019, denoting its impact on local livelihoods and social structures up to 2025.

#### Article 44, Uniform Civil Code

**Article 44** of the Constitution of India directs the State to strive for a Uniform Civil Code (UCC), which aims to replace personal laws based on religion with a common set of laws governing marriage, divorce, inheritance, and adoption. The UCC is intended to promote equality and national integration by eliminating legal disparities among religious communities. However, its implementation remains controversial due to concerns about cultural autonomy and religious freedom. The article is part of the Directive Principles of State Policy and is non-justiciable, meaning it is a guideline rather than enforceable law. The debate over UCC has intensified amid recent security concerns and minority rights discussions.

#### WHY IN NEWS?

The terror-related incidents have reignited debates on Article 44 and the Uniform Civil Code's role in balancing religious freedom with national security and equality.

#### Articles 29 and 30 – Minority Cultural Rights

Articles 29 and 30 protect the rights of religious and linguistic minorities to preserve their language, script, culture, and to establish and administer educational institutions. Article 29 safeguards cultural and educational rights of minorities, while Article 30 grants minorities the right to set up and manage their own schools and colleges. These provisions ensure minority communities can maintain their distinct identities within India's pluralistic society. These rights are constitutionally guaranteed and cannot be easily overridden by the state, reflecting India's commitment to cultural diversity and minority autonomy.

#### WHY IN NEWS?

The 76th Constitution anniversary marks its pioneering guarantee of minority cultural and educational rights through Articles 29 and 30, supporting India's secular and pluralistic framework.

#### Articles 323-A and 323-B

Articles **323-A** and **323-B** of the Constitution of India provide the legal framework for establishing tribunals to adjudicate disputes related to administrative and other



specialized matters. Article 323-A deals with tribunals for public services and administrative disputes, while Article 323-B covers tribunals for other matters like taxation, labor, and industrial disputes. These articles mandate tribunals to function independently from executive control, ensuring impartiality and effective adjudication. They emphasize the separation of powers and guarantee equality under Article 14. The Supreme Court has repeatedly interpreted these provisions to uphold tribunal autonomy in appointments, tenure, and functioning.

#### WHY IN NEWS?

The Supreme Court cited Articles 323-A and 323-B to invalidate the Tribunal Reforms Act of 2021, stressing constitutional requirements for tribunal independence and effective adjudication.

### **Bharatiya Nyaya Sanhita**

The **Bharatiya Nyaya Sanhita** is the proposed new criminal code intended to replace the Indian Penal Code (IPC). Drafted to modernize and simplify India's criminal laws, it aims to streamline legal provisions and incorporate contemporary legal standards. The Sanhita is designed to unify criminal laws and remove colonial-era language and provisions. It includes updated definitions of offenses and penalties, reflecting social and technological changes. The code is part of a broader legal reform agenda and is still under parliamentary consideration as of 2025.

#### WHY IN NEWS?

The IT Rules amendment references the Bharatiya Nyaya Sanhita as a legal basis alongside the IPC for defining and regulating obscene digital content.

### **Chandigarh Union Territory**

Chandigarh is a Union Territory and the shared capital of Punjab and Haryana states. It was designed by architect Le Corbusier and is known for its urban planning and architecture. Unlike most Union Territories, Chandigarh does not have its own legislative assembly. Currently, the Punjab Governor acts as its Administrator. It is one of the few Union Territories with a high degree of autonomy in administration but lacks independent legislative powers. Chandigarh's status has been disputed between Punjab and Haryana since its formation in 1966. Its inclusion under Article 240 would change its governance model.

#### WHY IN NEWS?

Chandigarh is proposed to be included under Article 240, which would introduce an independent administrator and alter its current administrative setup.

### **Eighth Central Pay Commission**

The **Eighth Central Pay Commission** was constituted in 2025 to revise pay, pension, and allowances for approximately 50 lakh central government employees and 69 lakh pensioners. Headed by Justice Ranjana Prakash Desai, it includes IIM Bangalore Professor Pulak Ghosh (part-time member) and Petroleum Secretary Pankaj Jain (Member-Secretary). The Commission will submit recommendations within 18 months, effective



from January 1, 2026. It considers economic conditions, fiscal prudence, developmental expenditure, and the impact on state finances. It uniquely addresses the unfunded cost of non-contributory pension schemes, including the Old Pension Scheme for pre-2004 employees.

#### WHY IN NEWS?

The government approved the ToR of the Eighth Central Pay Commission in October 2025 to revise pay and pensions for central government employees, with recommendations expected by April 2027.

### **Goods and Services Tax Compensation**

Goods and Services Tax (GST) compensation is a mechanism where the Central Government compensates States for revenue losses due to the introduction of GST, which subsumed many state taxes. This compensation is guaranteed for five years from the GST rollout in 2017, funded by a cess on certain goods. The Finance Commission recommends the compensation formula and revenue sharing between the Centre and States. Failure to provide timely compensation affects States' finances and governance. The compensation mechanism is critical for maintaining cooperative federalism and incentivizing States to implement GST effectively.

#### WHY IN NEWS?

The central government's recent refusal to compensate producing States for GST losses has raised concerns about the erosion of federalism and the financial autonomy of States.

### **Greater Bengaluru Authority (GBA)**

The Greater Bengaluru Authority (GBA) is a governing body responsible for coordinating urban planning, infrastructure, and civic services across the Bengaluru metropolitan area. It integrates efforts of multiple municipal corporations to address city-wide challenges. The GBA operates with a focus on sustainable development, waste management, and public health. It was established to streamline governance across fragmented administrative zones. The authority collaborates with state government agencies and local bodies for policy implementation. It uses technology and data-driven approaches to monitor urban issues. The GBA has recently initiated campaigns targeting environmental cleanliness and civic responsibility.

#### WHY IN NEWS?

The GBA launched the 'Garbage Dumping Festival' campaign to shame habitual litterers by dumping garbage in front of offenders' homes and imposing fines, aiming to reduce street littering in Bengaluru.

### **Gujarat Declaration**

The **Gujarat Declaration** was adopted during the first WHO Global Summit on Traditional Medicine in August 2023, held in Gandhinagar, Gujarat. It calls for biodiversity protection, equitable access to traditional health knowledge, fair benefit-sharing, and digital innovation in traditional medicine. The declaration underlines the importance of integrating traditional medicine with modern healthcare systems through data-driven,



ethical, and sustainable approaches. It serves as a political and scientific framework guiding global efforts to recognise and preserve traditional medicine's value while encouraging innovation and equitable health access.

#### WHY IN NEWS?

The Gujarat Declaration laid the foundation for the 2025 WHO Global Summit in New Delhi, reinforcing commitments to traditional medicine's role in global health and sustainability agendas.

### Integrity Certificate

An **Integrity Certificate** is an official document issued by a government department or authority certifying the moral and ethical conduct of a public servant. It is often required during empanelment, promotions, or transfers to higher sensitive posts, especially in police and administrative services. The certificate assesses an officer's record for any allegations of corruption, misconduct, or disciplinary actions. Withdrawal or refusal to issue such a certificate can bar an officer from consideration for key appointments. The process involves scrutiny of service records and vigilance clearance.

#### WHY IN NEWS?

Tamil Nadu withdrew the integrity certificate of one IPS officer, contributing to the controversy over the empanelment and appointment of the State's DGP.

### Lok Adalats

Lok Adalats are **alternative dispute resolution forums** established under the Legal Services Authorities Act to amicably settle disputes pending in courts or at the pre-litigation stage. They operate at national, state, and permanent levels, resolving cases through negotiation and consent. Between 2022-23 and 2024-25, over 23.58 crore cases were resolved via Lok Adalats. These forums reduce the burden on regular courts, provide speedy justice, and are cost-effective, often requiring no court fees. Lok Adalats cover civil, criminal compoundable cases, and public utility disputes, promoting access to justice for economically weaker sections.

#### WHY IN NEWS?

Lok Adalats have contributed to disposing of millions of cases, aiding India's legal system in managing backlog and providing accessible justice.

### Marine Genetic Resources (MGRs)

Marine Genetic Resources refer to genetic material from marine organisms with actual or potential value, including DNA used for pharmaceuticals, biotechnology, and research. MGRs are considered the common heritage of humankind under the treaty, requiring fair and equitable benefit-sharing. Prior to the treaty, governance of MGRs was unclear, causing concerns over biopiracy and exploitation by developed countries. The treaty creates a framework for sharing monetary and non-monetary benefits, but the exact mechanisms for calculation and distribution remain undefined, creating ongoing ambiguity in the management and commercial use of MGRs.

#### WHY IN NEWS?

MGRs are a central issue in the newly ratified High Seas Treaty, with the agreement



addressing benefit-sharing from genetic resources found beyond national jurisdictions.

### **Multi-Disciplinary Partnership (MDP)**

Multi-Disciplinary Partnership (MDP) firms combine professionals from various disciplines like Chartered Accountants, lawyers, and consultants under one entity. In India, MDPs are currently restricted under the Companies Act, 2013, limiting their ability to offer combined audit and advisory services. Globally, MDPs enable firms to provide integrated professional services, enhancing competitiveness. The proposed amendment aims to allow Indian MDPs to compete with global giants like the Big Four by permitting certain non-CA professionals within MDPs, with safeguards to maintain audit independence. MDP governance requires clear ownership structures and firewalls between audit and advisory functions to prevent conflicts of interest.

#### WHY IN NEWS?

The Indian Government plans to amend the Companies Act, 2013, to relax restrictions on MDPs, enabling Indian firms to compete globally while preserving audit independence.

### **NABHMITRA Tracking System**

NABHMITRA is a vessel tracking and communication system designed for small fishing boats under 20 meters operating in Indian coastal waters. It enables two-way communication between onboard terminals and a Centralized Control Centre. Features include real-time location tracking, emergency SOS alerts, and resource management. As of January 2025, over 36,000 transponders had been distributed to coastal fishers. NABHMITRA enhances maritime safety, supports enforcement agencies, and helps monitor secure fishing activities. It is part of India's digital safety technology initiatives to improve the livelihoods and security of small-scale fishers.

#### WHY IN NEWS?

NABHMITRA was mentioned in the context of new EEZ Sustainable Harnessing Rules and digital safety technologies introduced to strengthen fishing sector governance in 2025.

### **National Higher Education Regulatory Council**

The **National Higher Education Regulatory Council (NHERC)** is one of the four verticals proposed under the Higher Education Commission of India (HECI) as per NEP 2020. It is tasked with regulating all fields of higher education except medical and legal education. NHERC is designed to function as an independent regulatory body focusing on setting standards and ensuring compliance across universities and colleges. It aims to replace multiple existing regulators to reduce redundancy and conflicts. The NHERC will operate alongside other verticals like the National Accreditation Council and the Higher Education Grants Council to streamline governance in higher education.

#### WHY IN NEWS?

The NHERC is part of the new HECI Bill 2025, which aims to consolidate regulatory bodies into a single authority for better governance of higher education in India.

### **National Tribunal Commission**

The **National Tribunal Commission** is a proposed independent body mandated by the



Supreme Court to oversee the appointment, administration, and functioning of tribunals in India. It aims to ensure transparency, uniformity, and autonomy in tribunal operations, insulating them from executive interference. The Commission is intended to replace ad hoc government control over tribunals and standardize service conditions, tenure, and qualifications of tribunal members. The Supreme Court ordered its establishment within four months following the invalidation of the Tribunal Reforms Act of 2021. The Commission is seen as an institutional safeguard to uphold constitutional principles under Articles 323-A and 323-B.

#### WHY IN NEWS?

The Supreme Court directed the Union Government to establish the National Tribunal Commission as an essential structural safeguard after striking down the Tribunal Reforms Act of 2021.

#### **NDPS Act, 1985**

The **NDPS Act, 1985** stands for the Narcotic Drugs and Psychotropic Substances Act, enacted to regulate and prohibit narcotic drugs and psychotropic substances in India. It defines cannabis-related substances distinctly – charas as the resin, ganja as the flowering or fruiting tops, and excludes seeds and leaves without tops. The Act criminalizes cultivation, possession, and sale of cannabis, except for medical, scientific, or industrial purposes under government license. It classifies offences based on quantity into small and commercial, with penalties ranging from fines to 20 years imprisonment. The Act allows state regulation of bhang, an edible cannabis preparation from leaves.

#### WHY IN NEWS?

Kerala High Court dismissed a petition challenging prosecution for growing cannabis plants without flowering tops, clarifying the legal interpretation of cannabis under the NDPS Act.

#### **NDPS Kit**

The NDPS (Narcotic Drugs and Psychotropic Substances) kit is a field testing tool used by Indian law enforcement to detect narcotics quickly. It contains chemical reagents that react with substances like cannabis, cocaine, and heroin to produce color changes indicating the presence of narcotics. The kit enables on-the-spot preliminary identification, facilitating immediate action and seizure under the NDPS Act, 1985. It is widely used by agencies like the DRI, Customs, and Police across India. Despite its utility, confirmatory lab testing is required for prosecution, as the kit provides presumptive results only.

#### WHY IN NEWS?

The NDPS kit was used to confirm the presence of Hydroponic Weed in food packets seized at Mumbai airport during a major drug bust under Operation Weed Out.

#### **Neem Coating**

**Neem coating** on urea became mandatory in India in May 2015 to improve nitrogen use efficiency and reduce illegal diversion. The coating uses oil extracted from the **neem tree (Azadirachta indica)**, which slows nitrogen release, prolonging fertilizer action. This helps



reduce the amount of urea needed per acre and lowers environmental impact. Neem-coated urea also discourages its use in non-agricultural industries such as particle board, plywood, cattle feed, and milk adulteration. Despite these benefits, neem coating has not reduced overall urea consumption since its introduction.

#### WHY IN NEWS?

Neem coating was introduced as a policy to improve urea efficiency and curb misuse but has not lowered consumption amid rising demand.

### **Nowgam Police Station**

Nowgam Police Station is located in Srinagar, Jammu and Kashmir. It gained attention after a large explosion on November 14, 2025, caused by the accidental detonation of explosives stored on-site during examination. The explosives primarily consisted of ammonium nitrate, with minor quantities of PETN, SEMTEX, and RDX. This incident brought into light the risks of storing volatile materials in police facilities. The station's role extends beyond law enforcement to managing counterterrorism and security operations in a conflict-prone region. The explosion raised concerns about safety protocols and storage regulations for hazardous materials in police infrastructure.

#### WHY IN NEWS?

The Nowgam Police Station exploded on November 14, 2025, when seized explosives detonated during examination, causing damage and raising security concerns.

### **Odd-Even Traffic Scheme**

The odd-even traffic scheme is a vehicular rationing policy introduced in Delhi to reduce road traffic and vehicle emissions. On odd dates, vehicles with odd-numbered license plates are allowed on roads, and on even dates, only even-numbered vehicles can operate. Introduced first in 2016, the scheme aims to cut down air pollution by decreasing vehicular congestion and emissions. It is a temporary, emergency measure often applied during severe pollution episodes. The policy exempts emergency vehicles, public transport, and certain categories like women drivers. Its impact on pollution levels has been debated, with critics citing limited enforcement and displacement effects.

#### WHY IN NEWS?

The odd-even scheme is part of the recurring pollution control interventions implemented each winter in Delhi, reflecting short-term governance responses criticized for limited effectiveness.

### **ONDC (Open Network for Digital Commerce)**

ONDC is an Government of India-backed initiative aimed at democratizing digital commerce by creating an open, interoperable network connecting buyers, sellers, and logistics providers. It reduces dependence on dominant e-commerce platforms by enabling small merchants to participate in online trade. ONDC uses open protocols for cataloging, inventory, and order management, facilitating seamless transactions across multiple platforms. It promotes inclusivity by integrating local businesses and MSMEs into the digital economy. The network is designed to encourage competition, lower costs, and



enhance consumer choice. ONDC is a key part of India's digital infrastructure strategy to boost domestic digital commerce.

#### WHY IN NEWS?

ONDC is brought into light as public technology initiative contributing to India's digital success and ecosystem, showcasing the country's efforts to build scalable, inclusive digital commerce infrastructure.

### **Operation Crystal Fortress**

Operation Crystal Fortress is a coordinated intelligence-driven crackdown launched by the Narcotics Control Bureau (NCB) and Delhi Police targeting synthetic drug trafficking networks. It focuses on dismantling high-volume methamphetamine cartels operating trans-nationally. The operation utilizes multi-agency coordination, technical intercepts, and intelligence gathering to identify and arrest key operatives. The name "Crystal Fortress" symbolizes the focus on methamphetamine, often referred to as "crystal meth." The operation involves surveillance of couriers, safe houses, and layered handlers to disrupt distribution channels within India and overseas. It represents a strategic shift towards targeting synthetic drugs rather than traditional narcotics.

#### WHY IN NEWS?

Operation Crystal Fortress led to the seizure of 328 kg of methamphetamine worth ₹262 crore and the arrest of two suspects in Delhi in November 2025.

### **Panchayat Samitis**

Panchayat Samitis are intermediate-tier rural local government bodies in India, functioning between the gram panchayat (village level) and zilla parishad (district level). They coordinate development activities across multiple villages, including water supply, road maintenance, and agricultural extension services. Panchayat Samitis consist of elected members from the gram panchayats and representatives from the zilla parishad. They also implement government schemes and manage local resources. Maharashtra has 351 panchayat samitis, with 336 involved in the upcoming election phase. These bodies are crucial for grassroots democracy and rural administration.

#### WHY IN NEWS?

Maharashtra's local body elections will cover 336 of 351 panchayat samitis in the second phase, emphasizing their role in rural governance and development.

### **Pankaj Kumar Sharma**

Pankaj Kumar Sharma is the Deputy Commissioner of Kishtwar district, Jammu and Kashmir. He is responsible for administrative governance, law and order, and disaster management in the district. Sharma has overseen several infrastructure projects and coordinated emergency responses in the region. His role includes liaising between local authorities and state or central government agencies. Sharma's office manages coordination during crises, such as natural disasters or industrial accidents, ensuring timely rescue and relief operations.

#### WHY IN NEWS?

Pankaj Kumar Sharma was involved in coordinating the rescue operation and providing



official updates following the tunnel fire incident at the Kwar Hydroelectric Project.

### **PRS Legislative Research**

PRS Legislative Research is an independent, non-profit organization based in India that tracks and analyzes parliamentary proceedings and legislative developments. Founded in 2005, it provides data-driven insights to policymakers, media, and the public. PRS publishes reports on finance, governance, and socio-economic issues, including detailed analyses of tax regimes like GST. It is known for its comprehensive legislative briefs and state-level fiscal studies. PRS also engages in capacity-building workshops for legislators and supports transparency in governance through accessible, evidence-based research. It operates without government funding, relying on grants and donations.

#### WHY IN NEWS?

PRS Legislative Research recently published an analysis showing that aggregate GST revenues remain lower than pre-GST subsumed taxes, denoting fiscal challenges for state of India's post-GST implementation.

### **Regulatory Sandboxes**

**Regulatory sandboxes** are controlled environments where new regulatory processes or technologies can be tested safely before wider implementation. In the context of RegStack, these sandboxes will be set up in about 100 urban bodies to digitize and trial specific regulatory processes such as building plan approvals or vendor licensing. They allow experimentation with automated compliance verification and data sharing between agencies while minimizing risks. These sandboxes help identify technical challenges and refine digital governance models before scaling to all municipalities and parastatal bodies.

#### WHY IN NEWS?

Regulatory sandboxes are central to the phased rollout of RegStack, enabling practical testing and refinement of digital compliance systems in Indian cities.

### **Samvidhan Divas**

Samvidhan Divas, celebrated annually on **November 26**, commemorates the adoption of the Constitution of India in 1949. Instituted in **2015** by the Government of India on B R Ambedkar's 125th birth anniversary, it honors the Constitution's principles and its framers. The day emphasizes the values, rights, and duties enshrined within the Constitution. It serves as a reminder of the democratic ethos and governance ideals that guide India. Public participation through petitions and memoranda during the Constitution's drafting was unprecedented. The celebration promotes awareness of constitutional values across diverse socio-economic groups in India.

#### WHY IN NEWS?

Samvidhan Divas is brought into light annually to reaffirm the importance of the Constitution of India and to honor its framers, especially on the 125th birth anniversary of B R Ambedkar, a key architect of the Constitution.

### **State Election Commission (SEC)**

The State Election Commission (SEC) is a constitutional body in India responsible for



conducting elections to local urban and rural bodies such as municipal corporations, municipal councils, nagar panchayats, zilla parishads, and panchayat samitis. Unlike the Election Commission of India, the SEC does not prepare voters' lists but uses those prepared by the Chief Electoral Officer under the Representation of the People Act, 1950. The SEC controls the delimitation of wards, election scheduling, and supervision but lacks authority to add or delete voter names. Maharashtra's SEC ensures fair conduct of local elections within legal frameworks.

#### WHY IN NEWS?

Maharashtra SEC is conducting local body elections in three phases, using the electoral list as of July 1, 2025, amid opposition concerns about duplicate and inaccurate voter entries.

### **Surakshit Bharat Concept**

'Surakshit Bharat' translates to 'Safe India' and is a national security vision aligned with 'Viksit Bharat' (Developed India). It emphasizes comprehensive safety measures including crime prevention, disaster management, women's safety, and counter-terrorism. The concept integrates modern technologies like forensic science and artificial intelligence into policing strategies. It is a guiding framework for law enforcement agencies to enhance public security and build trust between citizens and police. The initiative supports welfare, infrastructure, and operational improvements within police forces to meet evolving security challenges effectively.

#### WHY IN NEWS?

The 2025 Police Conference centered on building a 'Surakshit Bharat' as part of the broader 'Viksit Bharat' vision, discussing security dimensions and future roadmaps.

### **Sustainable Security**

Sustainable security is a concept linking **security** with long-term political stability, governance, development, and regional cooperation. Unlike preventive intervention, it respects **state sovereignty** and emerges from negotiated settlements rather than imposed solutions. The approach emphasizes nationally led peace processes and gradual legitimization of political agreements. It integrates conflict management with inclusive governance and responsible leadership, aiming to avoid the risks associated with coercive or external interventions. Sustainable security promotes enduring peace by addressing root causes and aligning security efforts with social and political realities, rather than focusing solely on military or immediate crisis responses.

#### WHY IN NEWS?

The text proposes sustainable security as the guiding principle for the new UN Board, emphasizing political accompaniment and long-term stability over episodic crisis management.

### **Swayamsevaks**

Swayamsevaks are volunteer members of the Rashtriya Swayamsevak Sangh (RSS), a Hindu nationalist organization founded in 1925. The term means "self-volunteers," reflecting a commitment to disciplined social and cultural service. Swayamsevaks



participate in daily or weekly physical drills, ideological training, and community work. The RSS has played role in shaping Hindu nationalist thought and has influenced Indian politics, especially through its affiliates. Swayamsevaks have been active in campaigns related to cultural revivalism, social reform, and political mobilization, often emphasizing Hindu identity and heritage. Their organizational discipline and grassroots presence have made them a key force in India's socio-political landscape.

#### WHY IN NEWS?

Mohan Bhagwat mentioned swayamsevaks in his speech, emphasizing their role in sustaining the belief and efforts to restore the Ram Janmabhoomi at Ayodhya.

### **The Sukraniti**

The **Sukraniti** is an ancient Indian treatise on **statecraft, governance, and warfare**, attributed to the sage Sukra (Shukracharya). It covers topics such as diplomacy, military strategy, law, and administration. Unlike the Arthashastra, it is less studied but offers detailed vital information about **ethical rulership and war ethics**. The text emphasizes the importance of moral conduct alongside pragmatic governance. It also discusses **alliances, espionage, and battlefield tactics**. The modern publication by Col PK Gautam (Retd) reintroduces the text to contemporary strategic studies, denoting its relevance to India's defense philosophy.

#### WHY IN NEWS?

The Sukraniti was recently published at the Third Annual Indian Military Heritage Festival, showcasing its significance in Indian military and strategic thought.

### **Transplantation of Human Organs and Tissues Act, 1994**

The **Transplantation of Human Organs and Tissues Act, 1994** is an Indian law regulating organ donation and transplantation to prevent commercial dealings and ensure ethical practices. It defines brain death criteria, regulates hospitals authorized to perform transplants, and mandates donor consent procedures. The Act has undergone several amendments to expand the list of transplantable tissues and organs and improve donation rates. It also established the National Organ and Tissue Transplant Organisation (NOTTO) as a central authority to coordinate organ donation and allocation across India. The Act was very important in formalizing organ donation frameworks in the country.

#### WHY IN NEWS?

The Ministry of Health issued a notification under this Act in 2025 to amend rules boosting cornea donation and transplantation services nationwide.

### **Transport Research Wing (TRW)**

The Transport Research Wing (TRW) is a division under India's Ministry of Road Transport and Highways responsible for collecting, validating, and analyzing road accident data from states and union territories. TRW physically collects data from state agencies and cross-verifies it with digital records such as e-DAR/iRAD. It plays a key role in identifying black spots and producing reports that guide road safety policies. TRW also coordinates with state departments to resolve data discrepancies and improve reporting accuracy. In 2024,



TRW data showed differences from e-DAR data in some states, denoting challenges in data integration.

#### WHY IN NEWS?

TRW's data collection and validation efforts are central to the upcoming release of black spot data for 2023 and 2024, aimed at improving road safety planning.

### **Tribunals Reforms Act, 2021**

The **Tribunals Reforms Act, 2021** re-enacted provisions previously struck down by the Supreme Court, including fixing tribunal members' tenure at four years and setting a minimum appointment age of 50. It followed an ordinance with identical provisions invalidated in 2021 for undermining judicial independence. The Act governs the appointment, tenure, and administration of tribunals, which resolve specialized disputes in areas like taxation and corporate law. The re-enactment was challenged for violating separation of powers and judicial independence. The Act's provisions have caused delays in tribunal appointments, impacting their functioning nationwide.

#### WHY IN NEWS?

The Supreme Court is hearing petitions challenging the constitutional validity of the Tribunals Reforms Act, 2021, focusing on tenure and age limits for tribunal members.

### **UN Climate Change Council**

The proposed **UN Climate Change Council** is a governance body intended to be linked to the United Nations General Assembly. It aims to address the paralysis of the current multilateral system, especially the UN Security Council, in enforcing climate commitments. The council would have the authority and legitimacy to monitor, verify, and ensure countries fulfill their climate promises. It is designed to improve global climate governance by providing a focused, effective institution to oversee international climate action, enhancing accountability and cooperation among nations. The proposal was brought into light at the Belém Summit as a step toward reforming global governance structures.

#### WHY IN NEWS?

The creation of a UN Climate Change Council was advocated at the Belém Summit to strengthen enforcement and accountability of international climate commitments.

### **Uniform Civil Code (UCC) Uttarakhand 2024**

The **Uniform Civil Code (UCC) passed by Uttarakhand in 2024** is the first state-level legislation in India to implement a common set of personal laws governing marriage, divorce, inheritance, and adoption for all citizens, regardless of religion. The UCC replaced multiple religious personal laws with one secular law to promote equality and gender justice. It faced legal challenges but marked precedent in India's civil law reform. Uttarakhand's UCC includes provisions to outlaw polygamy, child marriage, and other discriminatory practices. It influenced other states, including Assam, to consider similar legislative reforms aligned with the UCC principles.

#### WHY IN NEWS?

Assam delayed its anti-polygamy bill to align with the Uniform Civil Code passed by



Uttarakhand in 2024, indicating a move towards standardized civil laws in India.

### Urban Naxals

Urban Naxals is a term used in India to describe left-wing activists and intellectuals in cities who are alleged sympathizers or supporters of Maoist insurgents. These individuals are accused of promoting the narrative that Maoists represent tribal and poor communities, often defending or romanticizing their violent methods. The term gained prominence in political and media discourse as a label for perceived ideological allies of the Naxal movement operating in urban centers. Urban Naxals are said to provide ideological, logistical, or moral support to Maoists, complicating counter-insurgency efforts. Their activities include protests, advocacy, and dissemination of Maoist ideology through academic and cultural platforms.

#### WHY IN NEWS?

Urban Naxals were brought into light during recent protests in Delhi where activists shouted slogans supporting Madvi Hidma, escalating tensions with law enforcement and drawing attention to their ongoing influence.

## Economy & Banking/Finance

### Bilateral Trade Agreement (BTA)

A Bilateral Trade Agreement (BTA) is a pact between two countries aimed at reducing tariffs, import quotas, and trade barriers to facilitate smoother trade flows. The BTA between India and the U.S. involves negotiations to address trade imbalances and tariff disputes, including the contentious 50% tariffs imposed by the U.S. on Indian goods. BTAs often include multiple tranches or phases, with initial agreements covering select sectors before expanding. The process involves formal negotiation rounds, with both sides making concessions and setting timelines for implementation. BTAs can impact export volumes and economic relations between the countries involved.

#### WHY IN NEWS?

India and the U.S. concluded the sixth round of negotiations on their BTA in October 2025, signaling a possible easing of the 50% tariffs affecting Indian merchandise exports.

### CASA Deposits

CASA stands for **Current Account and Savings Account** deposits. These deposits have a lower interest cost for banks compared to term deposits. The proportion of CASA in total deposits affects bank margins, as CASA funds are cheaper sources of funds. A declining CASA ratio forces banks to rely more on term deposits, which require higher interest rates often linked to small savings schemes. CASA deposits are a key determinant of the **Net Interest Margin (NIM)** of banks, influencing profitability. Indian banks typically maintain high NIMs partly due to a relatively high CASA ratio compared to global peers.

#### WHY IN NEWS?

The text marks the declining CASA proportion affecting deposit rates and bank margins amid monetary policy decisions in India during 2025.



## Chakravarty Committee

The Chakravarty Committee was formed in India in 1985 to review the monetary and credit policy framework. It recommended an inflation target of around **4%** to balance price stability with economic growth. The committee emphasized that moderate inflation reflects necessary relative price adjustments to attract resources to growth sectors. It also advocated for monetary policy autonomy and brought into light inflation's regressive impact on the poor. Its recommendations influenced India's monetary policy evolution, including the eventual adoption of Flexible Inflation Targeting. The committee's reasoning on inflation targets remains somewhat opaque, reflecting complexities in balancing growth and inflation control.

### WHY IN NEWS?

The Chakravarty Committee's inflation target recommendation is referenced in the ongoing review of India's Flexible Inflation Targeting framework ending in 2026.

## E-way Bill Generation

The e-way bill is an electronic document required for the movement of goods worth over ₹50,000 within India. Introduced under the GST regime, it aims to track goods in transit, reduce tax evasion, and improve compliance. The system is automated and integrates with GST returns. It records details like consignor, consignee, goods description, and vehicle number. E-way bills are valid for a limited time based on distance traveled. Its adoption has increased transparency in interstate and intrastate goods movement, helping improve logistics and tax collection efficiency.

### WHY IN NEWS?

Improvement in e-way bill generation in 2025 signals better compliance and increased movement of goods, reflecting stronger activity in the service and manufacturing sectors despite global economic uncertainties.

## Equalisation Levy

India's **equalisation levy** is a tax on digital transactions by non-resident e-commerce operators, introduced to tax foreign digital companies earning revenue from Indian users. It was initially imposed at 6% on online advertising and later expanded to 2% on e-commerce supply. India revoked two equalisation levies in anticipation of the OECD Pillar 1 framework, expecting a global solution. The levy was a pioneering move to capture tax revenue from digital services lacking physical presence, reflecting India's attempt to adapt tax policy to the digital economy. The levy's removal has caused short-term revenue losses amid ongoing international tax negotiations.

### WHY IN NEWS?

India revoked its equalisation levies expecting the OECD tax pact's implementation, a key topic at the recent G20 summit.

## Haircut

A **haircut** in insolvency and finance refers to the reduction in the amount creditors agree to accept from the original debt owed by a distressed firm. It represents a negotiated loss



to facilitate debt restructuring or resolution. Haircuts are common in insolvency proceedings to enable revival by easing the debtor's repayment burden. Under the IBC, haircuts may involve partial waivers of principal or interest, converting debt into equity, or deferring payments. While haircuts help align creditor recovery with the firm's long-term viability, excessive focus on upfront haircuts can prioritize immediate closure over sustainable revival.

#### WHY IN NEWS?

Public discourse on haircuts has intensified as creditor preferences for immediate recoveries have led to higher liquidation rates and fewer firm revivals under the IBC framework in 2025.

#### HS-Chapter Breakdown

The **HS (Harmonized System) chapter breakdown** is an international nomenclature for the classification of products used in global trade. Managed by the World Customs Organization, it categorizes goods into chapters based on their nature and type, facilitating uniform customs procedures and trade statistics. Each chapter covers a broad product category, subdivided into headings and subheadings for detailed classification. Countries use HS codes to monitor imports and exports, impose tariffs, and compile trade data. The system is updated every five years to reflect changes in technology and trade patterns. India uses HS codes extensively to analyze commodity-specific trade flows.

#### WHY IN NEWS?

The text mentions the need for a detailed HS-chapter breakdown to better understand the commodity-wise import surge and source countries amid India's record trade deficit in October 2025.

#### ICEGATE System

ICEGATE (Indian Customs Electronic Gateway) is the Indian Customs Department's digital platform for electronic filing and processing of customs documents. It facilitates electronic clearance of imports and exports, enabling faster customs processing and reducing paperwork. ICEGATE connects stakeholders such as importers, exporters, customs brokers, and government agencies. It supports e-payment of duties, electronic submission of shipping bills, and real-time tracking of shipments. ICEGATE is linked with other government systems to ensure seamless data flow and improved transparency in trade logistics.

#### WHY IN NEWS?

ICEGATE is one of the 35 external systems integrated with the new Bhandaran 360 ERP, enhancing digital connectivity and streamlining food grain movement in India's public distribution system.

#### Insolvency and Bankruptcy Code (IBC), 2016

The **Insolvency and Bankruptcy Code (IBC), 2016** is a comprehensive law consolidating insolvency and bankruptcy proceedings in India. It replaced multiple fragmented laws to streamline resolution of insolvency cases within a strict 330-day timeline. The IBC



mandates the formation of Insolvency Resolution Professionals and the Insolvency and Bankruptcy Board of India (IBBI) for regulatory oversight. Cases under IBC are adjudicated primarily by the NCLT. Despite its intent to expedite resolutions, the rising number of filings has caused delays, with average resolution times exceeding the stipulated limit. The IBC has impacted corporate restructuring and creditor-debtor relations in India.

#### WHY IN NEWS?

The Supreme Court and parliamentary committees brought into light delays in IBC case disposal, urging the creation of dedicated NCLT benches to manage the growing caseload effectively.

### **Institute of International Finance (IIF)**

The Institute of International Finance is a global association of financial institutions headquartered in Washington, D.C., established in 1983. It provides data, research, and policy analysis on global financial markets and economies. The IIF tracks capital flows, including foreign investments in emerging markets like China. It reported that offshore investments in Chinese stocks totaled **\$50.6 billion from January to October 2025**, a sharp increase from **\$11.4 billion in 2024**. The IIF's data is widely used by policymakers and analysts to monitor international financial trends and risks.

#### WHY IN NEWS?

The IIF's figures show the surge in foreign portfolio investment into China's stock markets in 2025, signaling renewed global investor confidence despite economic concerns.

### **Interest Subvention Schemes**

Interest subvention schemes provide partial interest subsidies on loans, reducing effective borrowing costs. In India, these schemes target sectors like agriculture, agricultural machinery, and housing, often linked to government welfare and development objectives. Borrowers benefit from lower interest rates adjusted for tax expenditures, improving affordability. These schemes support Micro, Small, and Medium Enterprises (MSMEs) and farmers by making institutional credit more accessible and cheaper. Interest subvention is a fiscal tool complementing monetary policy to stimulate investment in priority sectors without directly altering policy rates.

#### WHY IN NEWS?

The text mentions interest subvention schemes as factors helping MSMEs and agricultural borrowers despite unchanged policy rates in late 2025.

### **Labour Force Participation Rate (LFPR)**

The **Labour Force Participation Rate (LFPR)** measures the percentage of the population that is either employed or actively seeking employment. It is a key indicator of economic engagement. LFPR varies by gender, age, and region. In India, female LFPR has historically been low but showed a modest increase to 33.7% in Q2FY26, driven mainly by rural participation. Male LFPR tends to be higher but showed a slight decline to 77.2%. LFPR is sensitive to social, economic, and cultural factors and is critical for understanding the labor market's capacity to absorb the working-age population.



## WHY IN NEWS?

Recent data showed a slight rise in India's overall LFPR to 55.1% in Q2FY26, with notable gender and rural-urban variations influencing employment trends.

**Liquefied Natural Gas Terminals**

India operates seven operational **liquefied natural gas (LNG) terminals** located at Dahej, Hazira, Mundra (Gujarat), Kochi (Kerala), Dabhol (Maharashtra), Ennore (Tamil Nadu), and Dhamra (Odisha). These terminals import LNG, which is regasified and supplied via pipelines to urea plants across the country. The LNG infrastructure is critical for domestic urea production, as natural gas is the primary feedstock for ammonia synthesis in fertilizer manufacturing. Six additional terminals are under construction, aiming to expand capacity and reduce dependence on urea imports by enabling more localized production.

## WHY IN NEWS?

LNG terminals support domestic urea production by supplying natural gas, crucial amid rising consumption and limited production capacity.

**Liquefied Petroleum Gas (LPG)**

Liquefied Petroleum Gas (LPG) is a flammable mixture of hydrocarbon gases, primarily propane and butane, used as fuel in heating appliances, cooking equipment, and vehicles. It is stored under pressure in liquid form. India imports over 60% of its LPG requirements, mainly from West Asian countries like Saudi Arabia and Qatar. LPG is preferred for its clean-burning properties compared to traditional fuels. The Government of India subsidizes LPG to promote its use among rural and poor households, aiming to reduce health hazards from biomass fuels. LPG demand in India is rapidly growing due to urbanization and government schemes expanding LPG access.

## WHY IN NEWS?

India signed its first structured one-year contract to import 2.2 million tonnes of LPG from the US, diversifying away from traditional West Asian suppliers amid trade pact negotiations.

**Member Lending Institutions (MLIs)**

Member Lending Institutions (MLIs) refer to banks and financial institutions authorized to extend loans under government-backed credit guarantee schemes. MLIs receive credit guarantees from entities like NCGTC, which reduce their risk exposure when lending to sectors such as MSMEs and exporters. This arrangement encourages MLIs to provide collateral-free credit, increasing financial inclusion. MLIs include public sector banks, private banks, regional rural banks, and non-banking financial companies (NBFCs). Their participation is crucial for the implementation of schemes like CGSE, where they act as the primary lenders distributing government-supported credit to target beneficiaries.

## WHY IN NEWS?

MLIs are central to implementing the CGSE, as they will extend the additional Rs.20,000 crore credit facilities to exporters under the government's new export credit guarantee scheme.



## National Savings Certificates (NSC)

National Savings Certificates (NSC) are government-backed savings instruments in India, primarily used for small savings and tax benefits under Section 80C of the Income Tax Act. NSCs have fixed maturity periods, commonly 5 or 10 years, and can be encashed after maturity at post offices or designated banks. Contrary to official rules allowing encashment at any post office, some post offices may require the original purchase location for redemption. NSCs do not allow premature encashment except under specific circumstances like death or forfeiture. They are widely used for secure, low-risk investments by individual investors.

### WHY IN NEWS?

NSCs are mentioned as part of anecdotal evidence showing difficulties in encashing matured certificates, reflecting inefficiencies in the system managing unclaimed funds.

## National Statistical Office (NSO)

The National Statistical Office is the principal government agency responsible for collecting, compiling, and disseminating statistical data in India. Formed in 2019 by merging the Central Statistics Office and the National Sample Survey Office, NSO handles national accounts, economic indicators, and social statistics. It releases official GDP figures, inflation data, and employment statistics, which are crucial for policymaking. NSO operates under the Ministry of Statistics and Programme Implementation. Its methodologies and data are widely referenced in academic and economic research. The office also coordinates with state statistical bureaus to ensure uniformity and accuracy in data collection.

### WHY IN NEWS?

NSO is scheduled to release the official GDP numbers for India's Q2 FY26 on November 28, providing authoritative economic growth data.

## Net State Domestic Product (NSDP)

Net State Domestic Product (NSDP) measures the total economic output of a state after deducting depreciation on capital assets. It reflects the net value added by all resident producers within a state. NSDP is used to compare economic performance across states and over time. Unlike Gross State Domestic Product (GSDP), NSDP accounts for wear and tear on machinery and infrastructure. Bihar's NSDP per capita in 2024-25 is estimated at Rs69,321, which is lower than India's average of Rs2,05,324. This gap marks Bihar's slower economic development despite recent growth rates.

### WHY IN NEWS?

Bihar's NSDP per capita for 2024-25 was reported, showing economic disparity with the national average and denoting challenges in Bihar's growth despite a higher growth rate than India's overall.

## Non-Basmati Rice

Non-basmati rice refers to varieties of rice grown in India that are distinct from the aromatic basmati type. It includes white, parboiled, and broken rice. Between September



2022 and August 2023, India imposed export restrictions on non-basmati rice, including a ban on broken and white types and a 20% duty on parboiled rice, to control domestic food inflation. These restrictions were lifted starting late 2023 due to good monsoons and ample government stockpiles. Non-basmati rice exports are projected to surpass the previous record of \$6.5 billion in 2023-24, reflecting strong recovery.

#### WHY IN NEWS?

Non-basmati rice exports are driving India's agricultural export growth in 2025 after restrictions were eased, contributing to the \$25.9 billion farm exports in the first half of 2025.

### **NPCI International Payments Limited (NIPL)**

NPCI International Payments Limited (NIPL) is a subsidiary of the National Payments Corporation of India (NPCI), formed in 2020 to expand India's digital payment infrastructure internationally. It focuses on enabling cross-border payment solutions and partnerships with global payment systems. NIPL operates the Unified Payments Interface (UPI) internationally, facilitating instant payments in foreign markets. It has been instrumental in linking UPI with payment systems in countries such as Singapore and the UAE. NIPL is headquartered in Mumbai and plays a key role in India's digital payment diplomacy by promoting interoperable payment networks across borders.

#### WHY IN NEWS?

NIPL is collaborating with the European Central Bank to connect India's UPI with the EU's TIPS system, enabling faster, cheaper cross-border payments.

### **Priority Sector Lending (PSL) A-Family Rating**

The **A-Family rating** is a credit rating category used by public sector banks in India to evaluate NBFCs and fintech lenders eligible for Priority Sector Lending (PSL) benefits. Only NBFCs with a minimum A-family rating qualify, excluding many innovative and younger fintech firms. PSL mandates banks to allocate a percentage of their lending to priority sectors like agriculture and MSMEs. The A-family rating assesses financial strength, governance, and risk management. This rating criterion limits the participation of emerging lenders in MSME financing, affecting credit availability and innovation in the sector.

#### WHY IN NEWS?

Calls are increasing to revise A-family rating requirements to allow more fintech and NBFC players to access PSL benefits and boost MSME credit flow.

### **Private Credit Funds**

Private credit funds are investment vehicles that lend directly to companies, bypassing traditional banks and bond markets. They grew after the 2008 financial crisis due to tighter bank regulations. These funds are primarily financed by institutional investors such as pension funds, insurers, banks, and high-net-worth individuals. They offer bespoke loans with faster approval but less transparency, leading to concerns about risk assessment and regulatory oversight. The global private credit market is valued at around



**\$3 trillion** and has nearly tripled in size over the past decade, outpacing other credit types in growth.

#### WHY IN NEWS?

The collapse of three US firms financed through private credit funds raised concerns about the risks and opacity in this rapidly growing market.

#### **Prosperiti Think Tank**

Prosperiti is an Indian think tank focused on economic policy and labour reforms. It conducts research on labour market dynamics, industrial relations, and workforce skill development. Prosperiti advocates for flexible labour laws, improved worker accountability, and reforms like variable reward mechanisms and changes to working-hour regulations. It promotes evidence-based policy recommendations to support India's transition to a modern manufacturing economy. The think tank emphasizes continuous consultation between government, industry, and unions for progressive labour reforms. Prosperiti's work influences debates on balancing worker protections with industry flexibility in India's evolving economic landscape.

#### WHY IN NEWS?

Prosperiti is referenced for its policy proposals on labour reforms, including flexible work allocation and overtime regulation, relevant to India's new economy and labour code improvements.

#### **Public Sector Refiners (India)**

India's public sector refiners include Indian Oil Corporation Ltd (IOCL), Bharat Petroleum Corporation Ltd (BPCL), and Hindustan Petroleum Corporation Ltd (HPCL). These government-owned companies dominate India's refining capacity and fuel distribution network. They play important role in implementing government energy policies and subsidies, including LPG distribution. Public sector refiners conduct joint tenders for bulk fuel procurement to optimize costs and supply security. These companies have increasingly diversified crude and LPG sourcing to include new suppliers like the US to enhance energy security and reduce geopolitical risks.

#### WHY IN NEWS?

Indian public sector refiners jointly awarded a tender for US LPG imports for 2026, importing about 10% of India's annual LPG requirement, marking a strategic shift in sourcing.

#### **Purchasing Managers' Index (PMI)**

The Purchasing Managers' Index (PMI) is an economic indicator derived from monthly surveys of private sector companies, reflecting business conditions in manufacturing and services. It is a composite index based on new orders, output, employment, supplier deliveries, and inventories. A PMI above 50 signals expansion, below 50 contraction. India's manufacturing PMI rose from 57.7 in September to 59.2 in October 2025, indicating robust growth, while services PMI slightly declined from 60.9 to 58.9. PMI is closely watched as a leading indicator of economic health, influencing monetary policy decisions.



## WHY IN NEWS?

The recent PMI figures show mixed but generally positive economic momentum, influencing RBI's growth forecast and interest rate decisions for the upcoming budget cycle.

**Regional Rural Banks**

Regional Rural Banks (RRBs) were established in India in 1975 under the RRB Act to provide banking services to rural areas, especially to small farmers and artisans. They are jointly owned by the Central Government, State Governments, and Sponsor Banks, with the Central Government holding 50% equity. RRBs primarily focus on agricultural credit and rural development. They operate under the supervision of the Reserve Bank of India and have a unique mandate to serve unbanked rural populations. Despite their rural focus, RRBs have evolved to offer modern banking services including digital transactions and insurance products.

## WHY IN NEWS?

RRBs hold ₹51,489 crore in PMJDY accounts, reflecting their role in mobilizing rural deposits under financial inclusion schemes in 2025.

**Rules of Origin**

**Rules of Origin** are criteria used to define where a product was made, crucial for implementing trade agreements and determining tariff eligibility. These rules prevent trade deflection by ensuring that only goods substantially produced or transformed in a member country receive preferential treatment. They can be based on change in tariff classification, value-added content, or specific processing operations. Complex and varying across agreements, they affect customs procedures and trade compliance. In Latin America, Rules of Origin are particularly important for managing supply chains involving raw materials like critical minerals and manufactured goods such as automobiles and textiles.

## WHY IN NEWS?

Rules of Origin were a key discussion point in the India-Peru and India-Chile trade negotiations rounds held in late 2025, influencing tariff and customs arrangements in the proposed agreements.

**Shadow Central Banks**

Shadow central banks is a term used to describe large private stablecoin issuers who perform central banking functions such as creating and withdrawing liquidity by issuing digital tokens backed by assets like US Treasuries. Unlike official central banks, these entities operate for profit, lack formal access to emergency lending facilities, and are not directly controlled by public institutions. Their growing influence can undermine traditional monetary policy tools and fiscal coordination. They profit from interest on backing assets while relying on public sector bailouts during crises, creating systemic risk and regulatory challenges.

## WHY IN NEWS?

The rise of stablecoin issuers as shadow central banks threatens the Federal Reserve's



control over liquidity and monetary policy, raising concerns about financial stability and regulatory oversight.

### **SJVN Limited**

SJVN Limited, formerly Satluj Jal Vidyut Nigam Limited, is an Indian public sector undertaking specializing in hydroelectric power generation. Established in 1988, it operates multiple hydro and solar power projects across India and Nepal. SJVN is known for pioneering cross-border power projects, including the 1,200 MW Arun-3 Hydroelectric Project in Nepal. The company is involved in both project development and operations, with a focus on sustainable energy sources. Despite its extensive portfolio, SJVN faced controversy when the Etalin Hydroelectric Project was reassigned to NHPC in 2025, raising questions about project continuity and local employment.

#### WHY IN NEWS?

SJVN Limited lost management of the Etalin Hydroelectric Project to NHPC Ltd as per the Ministry of Power's decision, causing unrest among local workers previously employed under SJVN.

### **Small Finance Banks**

Small finance banks (SFBs) in India were introduced in 2015 to enhance financial inclusion by serving unbanked and underbanked sections, especially small businesses and low-income households. They operate like regular banks but focus on providing basic banking services and credit to underserved sectors. SFBs are allowed to accept deposits, lend, and offer payment services but with restrictions on lending to large corporates. They must maintain a minimum capital adequacy ratio of 15%. As of 2025, there are over 15 licensed SFBs in India, many of which evolved from microfinance institutions or non-banking financial companies (NBFCs).

#### WHY IN NEWS?

The text references differentiated banks including small finance banks, denoting their role in the Indian banking system amidst debates about creating larger banks.

### **Special Drawing Rights (SDRs)**

Special Drawing Rights are an international reserve asset created by the IMF in 1969 to supplement member countries' official reserves. SDRs are allocated based on IMF quotas and can be exchanged among governments for freely usable currencies. The last major allocation was \$650 billion during the 2021-22 pandemic, intended to provide liquidity during global economic stress. However, this allocation disproportionately benefited developed and large G20 economies due to their IMF quota shares. SDRs do not represent a claim on the IMF but rather a potential claim on the freely usable currencies of IMF members. Their value is based on a basket of major currencies.

#### WHY IN NEWS?

SDRs are brought into light due to slow IMF reforms and the disproportionate benefit to developed countries during the recent allocation amid shifting global financial power.



## State Government Securities (SGS)

State Government Securities (SGS) are debt instruments issued by state of India governments to finance their fiscal deficits. They typically have tenures ranging from short (1 year) to ultra-long (up to 30 years). SGS yields usually trade at a spread above central government securities (G-Secs), reflecting higher risk and liquidity premiums. The spread has historically ranged between 25-50 basis points but widened to nearly 100 basis points in 2025 due to states front-loading borrowing and issuing large volumes of ultra-long-tenure bonds. SGS are considered virtually risk-free, backed by state revenues and central government guarantees in some cases. Institutional investors often avoid long-dated SGS due to duration risk.

### WHY IN NEWS?

The SGS-G-Sec yield spread widened in 2025, pressuring India's bond market and prompting RBI interventions like auction cancellations to manage yield curves and borrowing costs.

## Subsumed Taxes

Subsumed taxes refer to various indirect taxes that were merged into the Goods and Services Tax (GST) when it was implemented in India in 2017. These include central sales tax, excise duty, value-added tax (VAT), and entry tax, among others. Before GST, these taxes were levied separately by central and state governments, leading to a complex tax structure. The subsuming of these taxes under GST aimed to create a unified tax system, reduce cascading taxes, and simplify compliance. Despite these objectives, total revenues from subsumed taxes have declined as a percentage of GDP since GST replaced them.

### WHY IN NEWS?

The decline in revenue from subsumed taxes compared to pre-GST levels has been brought into light in recent government and PRS data releases, raising concerns about the fiscal impact of GST on states.

## Sugar Season (2025-26)

The sugar season refers to the annual cycle of sugarcane harvesting and sugar production, typically running from October to September in India. The 2025-26 season began in October 2025, with projected production of 34 million tonnes (MT) against domestic demand of 28.5 MT. This surplus affects prices, exports, and government policy. The season's output depends on factors like weather, cane yield, and processing capacity. India is the world's second-largest sugar producer. Export quotas and duties are adjusted seasonally to manage surplus and protect farmer interests. Seasonal sugar production data guides industry planning and government interventions.

### WHY IN NEWS?

The 2025-26 sugar season started in October 2025 with an expected production surplus, prompting export decisions and policy adjustments by the Government of India.

## SWIFT Financial Messaging

SWIFT (Society for Worldwide Interbank Financial Telecommunication) is a global



messaging network used by banks and financial institutions to securely transmit information and instructions related to financial transactions. Established in 1973, SWIFT does not hold funds or manage accounts but facilitates communication between institutions. It is critical for international trade and finance, enabling cross-border payments and settlements. Control over SWIFT access has been used as a geopolitical tool, notably to exclude countries like Iran and Russia from the global financial system, effectively isolating them economically. SWIFT's governance involves member banks and is headquartered in Belgium.

#### WHY IN NEWS?

SWIFT's role in enforcing economic sanctions against Russia and Iran illustrates the weaponization of financial infrastructure in global digital power dynamics.

### **Terephthalic Acid**

Terephthalic Acid (TPA) is a key chemical intermediate used primarily in the production of polyester fibers and polyethylene terephthalate (PET) resins. It is derived from para-xylene through catalytic oxidation. TPA is critical in textile manufacturing and plastic bottle production. India imports portion of its TPA due to limited domestic production capacity. The purity of TPA directly affects the quality of polyester fibers. Globally, major producers include China, South Korea, and Taiwan. TPA production involves environmental challenges, such as emissions of volatile organic compounds (VOCs), requiring strict regulatory controls in manufacturing plants.

#### WHY IN NEWS?

TPA was among the raw materials on which QCOs were revoked to reduce costs and ease operational complexity for Indian textile exporters.

### **Total Expense Ratio (TER)**

The **Total Expense Ratio (TER)** is a measure of the total costs associated with managing and operating a mutual fund, expressed as a percentage of the fund's assets under management (AUM). It includes management fees, administrative fees, and other operational expenses but excludes brokerage and transaction costs. TER impacts investor returns since higher TER reduces net gains. In India, TER slabs vary with AUM size, with higher charges for smaller funds. Since 2018, SEBI has regulated TER, including a temporary 5 bps additional expense charge, which is now proposed to be removed to lower investor costs.

#### WHY IN NEWS?

SEBI has proposed changes to TER structure, including removing the 5 bps additional charge and adjusting TER slabs for open-ended equity schemes to reduce costs for investors and simplify compliance.

### **Tradeables and Non-tradeables**

Tradeables are goods and services that can be sold internationally, while non-tradeables are consumed domestically and not easily exported. In India, a large portion of manufacturing output is non-tradeable, serving the domestic market and informal



sectors. This sector supports employment and helps control inflation in essential goods. The distinction impacts economic strategies, with tradeables driving export-led growth and non-tradeables focusing on internal demand. About this split is crucial for policy-making, as India's manufacturing strength lies more in non-tradeables, unlike China's export-heavy tradeables focus.

#### WHY IN NEWS?

The text marks the need for institutions like NITI Aayog to study India's tradeables versus non-tradeables to better shape manufacturing policies.

### **UPI Circle Full Delegation**

UPI Circle Full Delegation is a feature introduced by NPCI BHIM Services Limited enabling a primary user to authorize a secondary user to make UPI payments on their behalf up to a monthly limit of **Rs 15,000**. The delegation can last for up to **5 years**. It allows trusted contacts to conduct transactions without needing their own bank-linked UPI ID or account. This feature supports shared financial management among families, dependents, and small business staff, offering transparency and control over transactions. It is designed to enhance digital payment accessibility and security for senior citizens and young adults.

#### WHY IN NEWS?

UPI Circle Full Delegation was launched on November 25, 2025, to enable trusted contacts to make payments on behalf of primary users via the BHIM Payments App, focusing on senior citizens and young adults.

### **Viability Gap Funding (VGF)**

Viability Gap Funding (VGF) is a financial support mechanism provided by the government to make infrastructure projects commercially viable. In the UDAN scheme, VGF subsidizes airlines operating on regional routes that are not profitable initially. This funding covers part of the operating costs, reducing financial risk for carriers. VGF is disbursed based on bids submitted by airlines during route allocation. The scheme has disbursed over ₹4,300 crore as VGF so far, supporting 649 operational routes. VGF encourages private participation and helps connect underserved and unserved airports, including heliports and water aerodromes, by making regional air travel affordable and sustainable.

#### WHY IN NEWS?

VGF is a key component in the proposed ₹30,000 crore outlay for the expanded UDAN scheme, aimed at continuing and enhancing regional air connectivity in India beyond April 2027.

### **Viksit Bharat 2047**

Viksit Bharat 2047 is a long-term national development vision aiming to transform India into a developed economy by the 100th anniversary of independence. It focuses on inclusive growth, sustainable development, technological advancement, and infrastructure modernization. The initiative emphasizes job creation, industrial expansion, environmental sustainability, and enhanced quality of life. It integrates sectoral reforms,



including mining, to boost economic opportunities and regional development. The vision aligns with global sustainable development goals and aims to position India as a leading global power by 2047 through policy reforms and strategic investments.

#### WHY IN NEWS?

The limestone auction in Jammu & Kashmir is part of efforts contributing to the Viksit Bharat 2047 vision by promoting regional economic growth and sustainable development.

### Vision 2030 (India Textile Sector)

Vision 2030 is an ambitious strategic roadmap for India's textile industry aiming to increase domestic consumption and export value. The plan targets growing the sector's market size to \$350 billion and boosting exports to \$100 billion by 2030. It focuses on enhancing manufacturing competitiveness, adopting technological innovation, and expanding global market share. Vision 2030 supports MSMEs and promotes sustainability and job creation. Collaboration between government, industry bodies, and stakeholders is integral to its implementation. The vision aligns with Make in India and Atmanirbhar Bharat initiatives, positioning India as a global textile hub.

#### WHY IN NEWS?

Vision 2030 frames the context for policy changes like the QCO removal on VSF to stimulate growth and global competitiveness in India's textile sector.

## Geography (Indian & Physical)

### Altiplano Puna Magma Body

The Altiplano Puna magma body is a large mid-crustal reservoir beneath the Central Andes, containing pockets of partially molten rock. It spans hundreds of kilometers and influences regional volcanism and tectonics. Seismic studies estimate up to 25% melt fraction in parts of this body. It acts as a heat source and fluid supplier for overlying volcanic systems like Uturuncu. Electrical resistivity data reveal conductive pathways within the body, likely representing hot, salty fluids transporting heat and chemicals upward. This magma body plays a key role in the geodynamics of the Altiplano plateau and the Andes volcanic arc.

#### WHY IN NEWS?

The recent Uturuncu volcano study linked its shallow fluid system to the deep Altiplano Puna magma body, explaining the volcano's long-term surface deformation pattern.

### Changthang Cold Desert

The **Changthang Cold Desert** is a high-altitude plateau spanning eastern Ladakh and western Tibet, characterized by extreme cold, arid conditions, and sparse vegetation. It supports unique wildlife including the rare Kiang (Tibetan wild ass) and the black-necked crane. The region is part of the **Changthang Wildlife Sanctuary**, established to protect its fragile ecosystem. It lies above 4,500 meters elevation and has a harsh climate with temperatures dropping below -30°C in winter. Nomadic Changpa herders inhabit the area, practicing traditional pastoralism. The desert is also an important breeding ground for migratory birds.



## WHY IN NEWS?

Several defence projects, including training facilities and ammunition storage, were approved inside the Changthang Cold Desert's protected areas by the NBWL Standing Committee in November 2025.

**Ganges-Brahmaputra-Meghna Basin**

The **Ganges-Brahmaputra-Meghna Basin** is one of the world's most complex transboundary river systems, shared by China, and Bangladesh. It covers over 1,415 rivers, with at least 81 rivers in Bangladesh either extinct or endangered. The basin experiences overlapping challenges – about 60% of Bangladesh's population is flood-prone, while half the population faces drought risks. Only 7% of the basin's watershed lies within Bangladesh, making it heavily dependent on upstream water management. Climate change has altered water flows, causing salinity intrusion, rising sea levels, and loss of arable land in the Bangladesh delta.

## WHY IN NEWS?

Bangladesh's water security depends on this basin, and recent developments like dam projects and climate change have intensified cross-border water disputes, prompting Bangladesh to join the UN Water Convention for protection.

**Geographical Indication (GI) Tag for Makhana**

The **Geographical Indication (GI) tag** granted to Bihar's makhana in 2022 identifies it as a unique product linked to its geographical origin. A GI tag protects the product's name, ensuring that only makhana grown and processed in Bihar can use this label. This status helps prevent misuse or imitation of the product and can enhance market value by guaranteeing authenticity and quality. GI tags also promote rural development by encouraging local producers and preserving traditional knowledge. The GI recognition is expected to improve export potential and price premiums, though its full impact on Bihar's economy remains to be seen.

## WHY IN NEWS?

The GI tag for Bihar's makhana aims to boost exports and improve the economic value of this aquatic crop, positioning it as a premium product in global markets.

**Great Nicobar Island**

Great Nicobar Island is the southernmost and largest island of the Nicobar Islands, part of the Andaman and Nicobar Islands union territory of India. It spans about **1,045 square kilometers** and is home to indigenous tribes such as the Shompen and Nicobarese. The island hosts a unique tropical rainforest ecosystem with rich biodiversity, including endemic species. It is strategically located near the Malacca Strait, a major global shipping route. The island is sparsely populated, with limited infrastructure, and is subject to environmental and tribal protection laws. It is also prone to seismic activity due to its location near tectonic plate boundaries.

## WHY IN NEWS?

The island is the site of a ₹92,000-crore mega-infrastructure project including a port, airport, power plant, and township, with ongoing land denotification and tribal rights



controversies.

### Great Rift Valley

The Great Rift Valley is a continuous geographic trench running from Lebanon to Mozambique, formed by the splitting and spreading of the continental plate. It is a key site of tectonic activity where the African Plate is slowly rifting apart. This rifting creates numerous faults, earthquakes, and volcanic activity. The valley hosts geological features, including Lake Turkana. Sediment displacement along faults in the valley can be measured to track tectonic movements. The valley's tectonic dynamics influence regional climate, hydrology, and ecosystems.

#### WHY IN NEWS?

The Great Rift Valley's tectonic activity is linked to increased seismic and volcanic events beneath Lake Turkana as the lake's water level decreases, altering pressure on fault lines.

### Gulf of Khambhat

The Gulf of Khambhat is a large inlet of the Arabian Sea located on the west coast of India, in Gujarat. It is known for its high tidal range, reaching up to **11 meters**, one of the highest in the world. The gulf is a rich ecosystem supporting diverse marine life including mudflats, mangroves, and numerous species of fish and crustaceans. It is also for its sediment deposition and has several important ports along its coast. The gulf's unique hydrodynamics influence local fisheries and coastal ecology, making it a critical area for marine research and conservation.

#### WHY IN NEWS?

The Gulf of Khambhat was the collection site for the newly identified amphipod species *Grandidierella khambhatensis* by Indian researchers in 2024.

### Jawadhu Hills

Jawadhu Hills is a hill range located in the Tiruvannamalai district of Tamil Nadu, rising to about **1,500 meters** above sea level. It is part of the Eastern Ghats and is known for its tribal population, primarily the Malayali tribe. The hills are rich in biodiversity and have a cooler climate compared to surrounding plains. Jawadhu Hills have historically been a remote area with limited infrastructure, but they hold cultural significance due to ancient temples and tribal customs. The region is also noted for its medicinal plants and traditional herbal knowledge.

#### WHY IN NEWS?

The discovery of ancient Vijayanagara-era gold coins was made during excavation work at a temple located near Jamunamarathur village atop Jawadhu Hills, denoting the area's historical importance.

### Kimberlite

Kimberlite is a rare, volcanic rock best known as the primary source of natural diamonds. It forms deep within the Earth's mantle and is brought to the surface through explosive volcanic eruptions. Kimberlite pipes are carrot-shaped geological formations that often contain diamonds embedded in the rock matrix. These pipes are major targets for



diamond exploration globally. Kimberlite also carries mantle xenoliths, providing valuable information about Earth's interior. The Geological Survey of India displays kimberlite samples to showcase India's potential for diamond mining and its geological heritage.

WHY IN NEWS?

Kimberlite samples were part of the Geological Survey of India's exhibit at the Ministry of Mines Pavilion at IITF 2025, denoting India's mineral wealth and strategic resources.

### **Koraga Tribe**

The Koraga tribe is an indigenous community primarily located in southwest India, known for practicing strict endogamy, which leads to high haplotype sharing and a recent founder event. They carry a maternal lineage linked to **North Dravidian languages**. Genomic studies reveal that the Koragas have distinct genetic markers, including variants associated with several genetic disorders such as Loey-Dietz Syndrome and Cockayne Syndrome, contributing to higher infant mortality and congenital disabilities within the community. The tribe's genetic and linguistic heritage provides crucial vital information about ancient Dravidian populations and their migrations.

WHY IN NEWS?

Koraga tribe genetics were central to the study identifying Proto-Dravidian ancestry and understanding linguistic-genetic correlations in Dravidian-speaking populations.

### **Lake Turkana**

Lake Turkana, located in the Great Rift Valley between Kenya and Ethiopia, is the world's largest desert lake. It contains **greenish, salty water** and is surrounded by sandy shrublands and windy outcrops. The lake is often called the **cradle of humanity** due to fossils of hominin species up to 4.2 million years old found there. Around 4000 to 6000 years ago, the lake's water level dropped by 100 to 150 meters due to a drying climate, transforming the surrounding landscape from lush grasslands to arid shrublands. It hosts three volcanic islands, one of which erupted in 1888.

WHY IN NEWS?

Recent studies link the drying of Lake Turkana over millennia to increased seismic activity, including earthquakes and volcanoes, driven by reduced water pressure on the lakebed.

### **Mahi River**

The **Mahi River** originates in the Vindhya Range, Madhya Pradesh, and flows through Rajasthan and Gujarat before draining into the Arabian Sea via the Gulf of Khambhat. It is one of the few west-flowing rivers in India, alongside Tapi and Narmada. The Mahi River uniquely crosses the Tropic of Cancer twice due to a U-shaped bend in Rajasthan. The river basin spans tens of thousands of square kilometers, supporting agriculture, ecosystems, and local communities. The Mahi Bajaj Sagar Dam on the river provides power and irrigation. Environmental issues include high silt loads and salinity intrusion near the estuary.

WHY IN NEWS?

The Mahi River is brought into light for its rare geographical feature of crossing the Tropic of Cancer twice, a unique phenomenon in India, and its significance in regional water



management and ecology.

### **Mayel Lyang**

Mayel Lyang is the name given to the Khangchendzonga area by the Lepcha people, meaning hidden paradise. It holds deep spiritual significance as a sacred landscape gifted by their gods. The Lepchas are indigenous to Sikkim and nearby regions, with a culture closely tied to the natural environment. Their traditional beliefs emphasize harmony with nature, influencing conservation practices in the region. Mayel Lyang is not just a place but a cultural identity, reflected in rituals and oral traditions that show respect for the mountains, forests, and wildlife of Khangchendzonga.

#### WHY IN NEWS?

Mayel Lyang is brought into light in the context of Khangchendzonga's recognition as a mixed World Heritage Site, emphasizing the link between nature and indigenous culture.

### **Samruddhi Mahamarg**

The **Samruddhi Mahamarg**, also known as the Maharashtra Expressway, is a 701-kilometer-long highway project aimed at connecting Mumbai to Nagpur. It is one of India's largest infrastructure projects, designed to reduce travel time between these cities from 16 to 8-10 hours. The expressway passes through multiple districts, including some tribal and underdeveloped regions, facilitating economic growth and regional connectivity. The project incorporates advanced engineering features such as tunnels, bridges, and service roads. It also aims to support industrial corridors and agricultural markets, enhancing trade and mobility. The expressway is expected to boost tourism and regional development.

#### WHY IN NEWS?

Samruddhi Mahamarg is mentioned as a key infrastructure corridor to be connected with satellite internet under the Maharashtra-Starlink collaboration for improved digital connectivity.

### **Siliguri Corridor**

The **Siliguri Corridor**, also called the "Chicken's Neck," is a narrow stretch of land approximately 22 kilometers wide, connecting India's northeastern states to the rest of the country. It is bordered by Nepal, Bangladesh, and Bhutan, making it geopolitically sensitive. The corridor is crucial for India's military logistics and civilian connectivity to the northeast. Due to its narrowness and surrounding international borders, it is vulnerable to encirclement and disruption. The corridor's strategic importance has led to increased military deployment and infrastructure development to safeguard this vital land link.

#### WHY IN NEWS?

The Indian Army has boosted security around the Siliguri Corridor by establishing new garrisons to counteract evolving threats from Bangladesh and China, emphasizing the corridor's strategic vulnerability.

### **Sir Creek**

Sir Creek is a 96 km tidal estuary on the border between India and Pakistan, located in the



Rann of Kutch. It is an ecologically sensitive area, one of Asia's largest fishing grounds, and believed to have untapped oil and gas reserves. The creek plays important role in defining the Exclusive Economic Zones (EEZ) of both countries in the Arabian Sea. The region is strategically important due to its proximity to maritime trade routes and security concerns. Pakistan has increased its military presence here, including bunkers and observation posts, amid ongoing territorial disputes. India has enhanced coastal security with new berthing and joint control facilities.

#### WHY IN NEWS?

The Indian military conducted Exercise Trishul in the Sir Creek area to demonstrate joint operational readiness and issued warnings to Pakistan against provocations in this sensitive zone.

### Spatial Data Registry (SDR)

The **Spatial Data Registry (SDR)** is a metadata management system within India's National Geo-Spatial Platform. It catalogs and manages metadata for foundational geospatial datasets, ensuring data provenance, accuracy, and consistency. SDR acts as a centralized repository to track dataset versions, sources, and update histories. It supports data discoverability and reuse by providing standardized metadata formats compliant with international geospatial standards. The SDR enhances transparency and accountability in geospatial data management and facilitates effective governance by enabling stakeholders to identify and access relevant spatial data efficiently.

#### WHY IN NEWS?

SDR is part of the newly announced National Geo-Spatial Platform, supporting the management and dissemination of authoritative geospatial data in India under the Survey of India's initiative.

### Straits of Malacca

The **Straits of Malacca** is a narrow, 890 km long maritime passage between the Malay Peninsula and Sumatra. It is one of the world's busiest shipping lanes, handling about 25% of global trade. The strait is crucial for oil transportation, with millions of barrels passing daily. It is shallow, averaging 25 meters deep, which limits the size of vessels. The region is prone to piracy and environmental threats, including oil spills. The straits connect the Indian Ocean to the South China Sea and the Pacific Ocean, making it a strategic chokepoint in global maritime trade.

#### WHY IN NEWS?

A low-pressure system was observed over Malaysia and the adjoining Straits of Malacca, contributing to cyclonic developments in the Bay of Bengal region.

### Thumba

Thumba is a coastal village in Kerala, known as the **launch site of India's first sounding rocket** in the 1960s. It houses the **Thumba Equatorial Rocket Launching Station (TERLS)**, established to study atmospheric and space phenomena near the magnetic equator. The site played important role in the early Indian space program and remains



active for launching sounding rockets. Thumba's geographical location near the magnetic equator makes it ideal for ionospheric and atmospheric research.

#### WHY IN NEWS?

Thumba's name was approved by the IAU for a smaller Martian landform associated with Krishnan Crater, symbolizing its significance in space research history.

### **Transit-Oriented Development (TOD) at Karkardooma**

Transit-Oriented Development (TOD) is an urban planning approach that promotes high-density, mixed-use development near public transit hubs to reduce reliance on private vehicles. The Karkardooma Housing Scheme 2025 in Delhi marks the city's first official TOD project, integrating residential, commercial, and recreational spaces with easy access to rapid transit. TOD aims to decongest cities by encouraging public transport use, reducing traffic, and lowering pollution. The project includes amenities like schools, hospitals, and entertainment facilities within walking distance. TOD is gaining traction globally as a sustainable urban growth strategy.

#### WHY IN NEWS?

The DDA's announcement of the Karkardooma TOD project is seen as a step to reduce Delhi's traffic and pollution through better urban planning.

### **Umling La Pass**

**Umling La Pass** is a mountain pass located in eastern Ladakh, at an altitude of approximately **19,000 feet**. It is one of the highest motorable passes in the world, surpassing the altitude of the Khardung La Pass. The pass was connected by the Border Roads Organisation (BRO) three years prior to November 2025, marking achievement in high-altitude infrastructure. The road to Umling La is strategically important for military logistics and regional connectivity. It is part of India's efforts to improve access to remote border areas amidst challenging terrain and severe weather conditions, including sub-zero temperatures and high winds.

#### WHY IN NEWS?

Umling La Pass was recently connected by BRO, representing a milestone in India's high-altitude border infrastructure development, surpassing previous records for motorable passes.

### **Varkala Cliff Formations**

Varkala, in Kerala, is known for its **distinctive sedimentary cliff formations** along the Arabian Sea coast, which are geologically unique in peninsular India. These cliffs consist primarily of **Cenozoic sedimentary rocks** and are considered a potential **Martian analogue site** due to similarities in erosional patterns and sedimentary processes. The cliffs provide vital information about ancient marine and terrestrial environments and are protected as a geological monument.

#### WHY IN NEWS?

Varkala's geological uniqueness led to its name being adopted for a Martian landform near Krishnan Crater, denoting parallels between Earth and Martian landscapes.



## Vijoyanagar Region

Vijoyanagar is a remote area in the Changlang district of Arunachal Pradesh, known for its dense forests and high biodiversity. It is accessible only by air or multi-day treks, making it one of the least explored regions in India. The region harbors numerous endemic species and is part of the Eastern Himalayan biodiversity hotspot. Its isolation has preserved many unique ecosystems, but also poses challenges for scientific research and conservation. Vijoyanagar's difficult terrain and limited connectivity have historically hindered detailed biological surveys.

### WHY IN NEWS?

Vijoyanagar gained attention due to the discovery of a new plant species, *Hoya dawodiensis*, denoting its ecological importance.

## Vindhya Range

The **Vindhya Range** is a complex series of mountain ridges, hill ranges, and plateaus in central India, primarily in Madhya Pradesh. It forms a natural boundary between northern and southern India. The Vindhyas influence climate patterns and river systems, including the origin of the Mahi River. The range is rich in mineral deposits and hosts diverse flora and fauna. It has historical significance as a cultural and political divide in ancient India. The Vindhyas are not a continuous chain but a collection of discontinuous hill ranges extending over 1000 km.

### WHY IN NEWS?

The Vindhya Range is noted as the source region of the Mahi River, a river with a rare geographical path crossing the Tropic of Cancer twice, emphasizing the range's role in regional hydrology.

## Environment & Ecology

### 6th Kaziranga Wetland Bird Census 2025

The 6th Kaziranga Wetland Bird Census 2025 documented over **47,000 birds from 163 species** across the Roumari and Donduwa wetlands within Laokhowa Wildlife Sanctuary. The census is part of a systematic monitoring program involving researchers, students, and conservationists to collect avifaunal data using scientific protocols. It surpasses bird counts at Assam's only Ramsar site, Deepor Beel. The census supports conservation planning and strengthens ecological databases. It involves collaboration between academic institutions, forest departments, and civil society groups. The data collected informs long-term monitoring and habitat protection strategies.

### WHY IN NEWS?

The census results were presented at a workshop advocating for Ramsar status for the Roumari-Donduwa Wetland Complex due to its rich bird biodiversity.

### Acacia mearnsii (Black Wattle)

*Acacia mearnsii*, commonly known as black wattle, is an invasive tree species introduced to the Western Ghats by the British in the early 1900s for its **tannin-rich bark**, used in leather tanning. It thrives in moist, high-altitude plateaus and spreads rapidly,



outcompeting native flora. The dense canopy suppresses native grasses, herbs, and pollinators, hardening soil and reducing water infiltration. It is listed among the **world's 100 worst invasive alien species**. Its removal is challenging due to persistent root sprouting, requiring manual uprooting and continuous follow-up to prevent regrowth.

#### WHY IN NEWS?

Black wattle trees are being systematically removed from Pampadum Shola National Park as part of a large-scale restoration effort to recover native ecosystems and improve water retention in the Western Ghats.

### Adam's Bridge Sandbars

Adam's Bridge, also known as Ram Setu, is a chain of natural sandbars connecting India and Sri Lanka. The sandbars are unique ecological niches supporting breeding colonies of several seabird species. In recent studies, six additional seabird breeding colonies were recorded on these sandbars, denoting their importance for avian biodiversity. The sandbars' shallow waters and isolated environment provide safe nesting grounds. This area is also culturally and historically significant. The fragile ecosystem faces threats from development and climate change, making conservation efforts critical to protect these breeding seabird populations.

#### WHY IN NEWS?

Recent discoveries of new seabird breeding colonies on Adam's Bridge sandbars were reported, underscoring the ecological value of this natural formation amid environmental concerns.

### Adaptation Gap Report 2025

The Adaptation Gap Report 2025 is a comprehensive analysis published by the United Nations Environment Programme (UNEP) assessing global progress on climate change adaptation. It quantifies the financial shortfall in adaptation funding, estimating that developing countries require \$310 billion annually until 2035 to protect vulnerable populations from climate impacts. The report marks the lack of a unified global metric for adaptation, emphasizing the need for improved tracking mechanisms. It also stresses social inequalities as a critical factor in vulnerability to climate risks. The report calls for scaling up climate finance and better distribution mechanisms to enhance resilience worldwide.

#### WHY IN NEWS?

The report was released ahead of COP 30 to inform negotiations on funding and tracking adaptation efforts.

### Adyar Estuary

The **Adyar estuary** is located in Chennai, Tamil Nadu, where the Adyar River meets the Bay of Bengal. It is a wetland ecosystem supporting diverse flora and fauna, including migratory and resident bird species. The estuary has been under environmental pressure due to urbanization and pollution. It serves as an important habitat for birds like the pond heron during non-monsoon months. The estuary's mangroves act as natural buffers



against coastal erosion and provide breeding grounds for aquatic species. Restoration efforts have been ongoing to improve its ecological health and maintain biodiversity.

#### WHY IN NEWS?

The Adyar estuary is mentioned as the original site where V Santharam observed the seasonal disappearance of pond herons, sparking studies on their migratory behavior along the East coast.

### **African Swine Fever (ASF)**

**African Swine Fever** is a highly contagious viral disease affecting domestic and wild pigs, caused by the African Swine Fever Virus (ASFV). It leads to severe hemorrhagic fever with mortality rates near **100%** in acute cases. ASF does not affect humans. The virus can survive in pork products for months, facilitating spread through contaminated meat. There is no vaccine or cure currently available. ASF originated in Africa and spread globally, causing major economic losses in pig farming. Transmission occurs via direct contact, ticks of the *Ornithodoros* genus, or contaminated feed and equipment. Control relies on strict biosecurity and culling.

#### WHY IN NEWS?

ASF cases have surged in Assam, prompting bans on live pig movement and pork sales to control the outbreak and prevent further spread in the state and neighboring regions.

### **All India Tiger Estimation**

The All India Tiger Estimation is a nationwide census conducted every four years by the Wildlife Institute of India and the National Tiger Conservation Authority. It uses a **four-tiered methodology** – ground tracking, satellite imaging, camera trapping, and data analysis. The census covers tiger habitats across India and tracks population trends, habitat health, and ecological changes. It also monitors other species like leopards, bears, and wild dogs. The data helps formulate conservation strategies and assess the effectiveness of protected zones. The 2026 census will run from November to March depending on regional conditions.

#### WHY IN NEWS?

The 2026 All India Tiger Estimation is about to commence, involving NSTR and other reserves, to update tiger population data and conservation status.

### **Amur Falcons**

The **Amur Falcon** (*Falco amurensis*) is a small raptor known for one of the longest migratory journeys among birds, traveling from East Asia to Southern Africa annually. It breeds in Siberia and Northern China and winters in Southern Africa, covering over 22,000 kilometers round trip. The species congregates in huge numbers during migration stopovers, notably in Nagaland. Amur Falcons feed primarily on insects, especially termites and locusts. Due to hunting threats in some regions, conservation efforts have increased, including legal protection and community awareness programs. It is nicknamed the **Falcon Capital of the World** for Nagaland's roosting sites.

#### WHY IN NEWS?

Nagaland declared a temporary 'Silence Zone' around Pangti village to protect the massive



annual congregation of Amur Falcons during their migration season.

### **Anti-Smog Guns**

Anti-smog guns are large-scale air pollution control devices designed to spray fine water mist into the atmosphere to reduce particulate matter concentrations temporarily. They operate by capturing dust and pollutants, causing them to settle faster. These devices are often deployed in urban areas during high pollution episodes, especially in construction zones or industrial sites. Despite their visibility, anti-smog guns provide only short-term relief and do not address pollution sources. They require water use and energy consumption. Their effectiveness is limited in windy or large open areas and is considered a stopgap rather than a sustainable solution.

#### WHY IN NEWS?

Anti-smog guns are mentioned as part of Delhi's seasonal quick-fix pollution control measures that recur every winter but fail to produce lasting improvements.

### **Ashtamudi Lake**

Ashtamudi Lake is a prominent estuarine system located in Kerala, known for its unique ecosystem combining freshwater and marine life. It spans approximately 61.4 square kilometers and is characterized by multiple interconnected channels. The lake supports diverse aquatic species, including fish, crabs, and mollusks, and sustains local livelihoods through artisanal fishing. It is also a Ramsar Wetland of International Importance, recognized for its biodiversity and ecological significance. Ashtamudi's brackish water environment creates a rich habitat for migratory birds and supports traditional fishing methods that have evolved over centuries.

#### WHY IN NEWS?

Ashtamudi Lake is in the news due to an international research project studying the rare cooperative fishing behavior between local fishers and Indo-Pacific humpback dolphins in its waters.

### **Banni Grasslands**

Banni Grasslands, located in the Kutch district of Gujarat, is Asia's largest tropical grassland ecosystem, spanning about 3,847 square kilometers. It is characterized by saline soils and seasonal wetlands, supporting a unique assemblage of flora and fauna, including migratory birds, blackbucks, and chinkara. The grasslands are a traditional grazing ground for Maldhari pastoralists, who practice transhumance. Banni has been identified as a potential site for cheetah reintroduction due to its open terrain and prey availability. Conservation initiatives here include habitat restoration and the development of a 600-hectare cheetah breeding enclosure, jointly funded by state and central governments.

#### WHY IN NEWS?

Banni Grasslands is being prepared as a cheetah breeding and conservation center under the ongoing Project Cheetah in Gujarat.



## Bay of Bengal Fishing Fleet

The Bay of Bengal hosts more than **one-third of the global fishing fleet** and accounts for nearly **6% of the world's fish catch**. It is a critical marine region for global fisheries and supports millions of livelihoods across South and Southeast Asia. The fishing fleet includes a mix of small-scale artisanal boats and larger commercial vessels. Overfishing, habitat degradation, and climate change pose challenges to sustainability. Regional cooperation through initiatives like BIMReN seeks to improve fisheries management, stock assessment, and ecosystem resilience in this heavily utilized maritime area.

### WHY IN NEWS?

The Bay of Bengal's importance to global fisheries was brought into light during the BIMReN conference discussions on sustainable marine resource management.

## Beat the Heat Movement

The **Beat the Heat** movement is a global coalition launched at COP30, comprising 187 cities worldwide committed to localizing the Global Cooling Pledge. It focuses on bridging gaps in finance, governance, and heat resilience delivery. Cities like Rio de Janeiro, Jakarta, and Nairobi participate, implementing nature-based cooling solutions such as green corridors and microparks. The coalition aims to extend safe cooling access and reduce heat-related risks by integrating sustainable urban design, emphasizing equity and health benefits. It supports vulnerable populations and promotes city-level climate adaptation strategies to tackle rising temperatures.

### WHY IN NEWS?

Launched at COP30, the movement represents a city-driven effort to implement the Global Cooling Pledge and enhance urban heat resilience globally.

## Belem COP30 Summit

The **COP30 summit** took place in Belem, Brazil, in November 2025, focusing on climate change action and governance. It was notable for hosting the signing of the Declaration on Information Integrity on Climate Change by twelve countries. Belem, located in the Amazon region, is a strategic venue denoting the importance of protecting the Amazon rainforest in climate discussions. The summit addressed misinformation as a critical challenge to climate policy and emphasized transparency, cooperation, and public trust in climate communication.

### WHY IN NEWS?

COP30 in Belem was the venue where the historic declaration to combat climate misinformation was signed by multiple countries.

## Bhoramdev Sanctuary

The **Bhoramdev Sanctuary** is located in Kawardha district, Chhattisgarh. It spans an area of approximately **150 square kilometers** and is known for its diverse flora and fauna, including the rare Indian bison (gaur). The sanctuary is named after the ancient **Bhoramdeo Temple**, archaeological site nearby. It acts as important habitat for several endangered species and supports a variety of ecosystems ranging from dense forests to



grasslands. The sanctuary plays a vital role in regional biodiversity conservation and is managed by the state forest department. It has faced challenges like poaching and habitat encroachment.

#### WHY IN NEWS?

Two bison were electrocuted by poachers in the Chilfi East Range of Borhamdev Sanctuary, prompting a forest department investigation and arrests.

### **BioE3 Policy**

The **BioE3 Policy** is a Government of India initiative aimed at encouraging innovation in biotechnology, particularly focusing on sustainable protein production. It supports the development of biofoundries and AI-enabled research hubs to accelerate the manufacturing of plant-based, cultivated, and fermentation-derived proteins. The policy encourages collaboration between academia, industry, and startups to create a robust ecosystem for bio-based products. It also promotes research in alternative proteins to reduce reliance on conventional livestock, thereby lowering environmental impacts. The BioE3 Policy is part of India's broader strategy to integrate biotechnology with sustainability goals and global competitiveness in emerging protein markets.

#### WHY IN NEWS?

The BioE3 Policy is brought into light as a key enabler for India's smart protein revolution, supporting sustainable protein R&D and helping align the country with global ESG standards by 2025.

### **Blue Economy**

The **Blue Economy** refers to the sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems. It includes sectors like fisheries, maritime transport, coastal tourism, marine biotechnology, and offshore energy. India and Russia have recently emphasized cooperation in this area, focusing on port development, maritime connectivity, skill development, and Arctic operations. The Blue Economy also covers emerging fields such as **green shipbuilding** and ice-class vessels designed for Arctic conditions. This cooperation aims to harness marine resources responsibly, balancing economic benefits with environmental sustainability.

#### WHY IN NEWS?

India and Russia discussed strengthening collaboration in the maritime domain, including the Blue Economy, during Putin's 2025 visit to India, focusing on Arctic operations and sustainable maritime growth.

### **Bombay Natural History Society (BNHS)**

The **Bombay Natural History Society (BNHS)**, founded in 1883, is one of India's oldest and most respected conservation organizations headquartered in Mumbai. It focuses on biodiversity research, conservation, and environmental education. BNHS played a very important role in rediscovering the Asiatic Caracal in Rajasthan through community engagement and field expeditions. The society runs specialized programs like the Bustard



and Florican Programme and the Environment Information, Awareness, Capacity Building and Livelihood Programme (EIACP). It collaborates with local communities and scientific experts to protect endangered species and habitats across India. BNHS's archives include extensive records of Indian flora and fauna.

#### WHY IN NEWS?

BNHS coordinated the recent grassroots expedition that confirmed the presence of the Asiatic Caracal in the Thar Desert, denoting its ongoing role in wildlife conservation and community involvement.

### **Bonnet Macaque**

The Bonnet Macaque (*Macaca radiata*) is a primate species predominantly found in South India, often near human habitations like temples and villages. Despite appearing common, its population declined by 82% over recent decades due to habitat loss, particularly the removal of roadside trees. It was reclassified from "Least Concern" to "Vulnerable" by the International Union for Conservation of Nature (IUCN). The species is not primarily forest-dwelling, relying on fragmented habitats close to humans. Long-term monitoring by primatologists has been crucial in revealing its declining numbers, denoting the importance of habitat conservation for this species.

#### WHY IN NEWS?

The Bonnet Macaque was mentioned to illustrate how a species can appear abundant yet face serious population declines due to habitat loss and lack of scientific management.

### **C R Neelakandan**

C R Neelakandan is a social activist and environmentalist based in India, known for his advocacy on environmental issues, especially pollution and sustainable development. He has been involved in raising awareness about plastic pollution and its health impacts. Neelakandan often petitions government bodies and courts to enforce stricter environmental regulations. He combines grassroots activism with scientific evidence to push for policy changes. His work includes denoting the dangers of microplastics in drinking water and advocating for consumer transparency through labeling. He has contributed to environmental journalism and public education campaigns in Kerala and nationwide.

#### WHY IN NEWS?

Neelakandan filed a petition in the High Court demanding action against microplastic contamination in bottled water and sought mandatory warning labels on packaging.

### **Cheetah Reintroduction Programme**

The Cheetah Reintroduction Programme is an initiative launched by the Government of India to bring back cheetahs, extinct in India since the 1950s. It began with the translocation of eight cheetahs from Namibia to Kuno National Park on **17 September 2022**. The programme involves scientific monitoring, habitat restoration, and breeding management to establish a sustainable wild population. It represents one of the world's first attempts to reintroduce a large carnivore species on such a scale. The programme is



a part of India's broader biodiversity conservation strategy and aims to enhance ecosystem balance and wildlife tourism.

#### WHY IN NEWS?

The programme is brought into light due to the birth of five cheetah cubs from Mukhi, the first India-born female cheetah, showing breeding success.

### **Dandeli Wildlife Corridor**

The Dandeli Wildlife Corridor connects the Dandeli Wildlife Sanctuary with neighboring forest areas in Karnataka and Goa. It facilitates movement of large mammals like elephants, tigers, and leopards, maintaining genetic flow between populations. The corridor includes dense evergreen and semi-evergreen forests, streams, and grasslands. It faces threats from infrastructure development and deforestation, impacting animal migration routes. Conservation efforts focus on protecting these corridors to ensure species survival and reduce human-animal conflict. The corridor is critical for maintaining ecological balance in the Western Ghats, supporting both predator and prey species.

#### WHY IN NEWS?

Experts speculate the striped hyena's appearance in Kali Tiger Reserve may be due to seasonal dispersal or migration through the Dandeli Wildlife Corridor from drier northern Karnataka habitats.

### **Drone Didi**

Drone Didi refers to women in Himalayan self-help groups who operate low-cost drones for environmental monitoring and disaster management. These drones assist in real-time surveillance of forest fires, landslides, and glacial lakes. The program empowers women by providing technical skills in drone piloting and data analysis. It supports early warning systems and resource management in difficult-to-access areas. The initiative combines traditional ecological knowledge with modern technology to enhance community safety and sustainable livelihoods. The term didi means sister in several Indian languages, symbolizing solidarity and empowerment among women drone operators.

#### WHY IN NEWS?

The Drone Didi initiative exemplifies how Himalayan women are adopting drone technology to monitor environmental changes and mitigate disaster risks.

### **Early Monsoon Impact**

An **early monsoon** season can influence energy consumption patterns in India by reducing the demand for cooling during hot months. Recently, an early onset of monsoon rains led to lower temperatures and humidity, decreasing the use of air conditioning and fans. This contributed to a slower rise in carbon emissions, with India's CO<sub>2</sub> emissions projected to increase by only 1.4%, a marked improvement over previous years. Early monsoons also affect agricultural productivity and water availability, indirectly impacting energy use related to irrigation and food processing.

#### WHY IN NEWS?

India's slower emissions growth in 2025 was partly due to an early monsoon, which helped reduce energy demand, as reported in the Global Carbon Budget 2025.



## Glacial Lake Outburst Floods (GLOFs)

Glacial Lake Outburst Floods (GLOFs) occur when the natural dam containing a glacial lake fails, releasing large volumes of water suddenly downstream. These floods are common in the Himalayas due to rapid glacial melting caused by climate change. GLOFs can cause catastrophic damage to downstream communities, infrastructure, and ecosystems. The frequency and intensity of GLOFs have increased in recent decades. Monitoring using satellite imagery and drones helps predict potential outbursts. Early warning systems are being developed to mitigate impacts. GLOFs are distinct from regular floods as they originate from glacial lake breaches rather than rainfall or river overflow.

### WHY IN NEWS?

GLOFs are increasingly threatening Himalayan communities due to accelerated glacial retreat and climate change, prompting new technological and community-based mitigation efforts.

## Global Implementation Accelerator

The **Global Implementation Accelerator** is a newly launched initiative at COP 30 designed to fast-track the execution of climate agreements worldwide. It includes a high-level dialogue platform to be held annually, facilitating cooperation, monitoring, and scaling of climate actions. The Accelerator aims to bridge the gap between climate commitments and actual implementation by promoting technology transfer, finance mobilization, and policy alignment. It supports global adaptation goals, just transitions, and loss and damage responses. The initiative represents a shift towards pragmatic and coordinated climate governance to meet the 1.5°C target.

### WHY IN NEWS?

The Global Implementation Accelerator was launched at COP 30 to enhance coordination and speed of climate action, with a high-level dialogue planned for 2026.

## Global Methane Pledge

The **Global Methane Pledge** is an international initiative launched by the United Nations Environment Programme at COP30 aimed at reducing global methane emissions by 30% from 2020 levels by 2030. It involves commitments from over 100 countries to adopt methane mitigation technologies and policies. Methane is a potent greenhouse gas with a global warming potential over 80 times greater than CO<sub>2</sub> over 20 years. The pledge focuses on key methane sources – oil and gas, agriculture, and waste. Full implementation could prevent 0.2°C of warming and avoid millions of premature deaths and crop losses globally.

### WHY IN NEWS?

The pledge is brought into light in the latest UN report warning India lacks specific policies to reduce methane emissions from agriculture, despite being a major emitter and signatory to the pledge.

## Gogabeel Lake

Gogabeel Lake is an **oxbow wetland** located in Katihar district, Bihar. It is situated



between the rivers Ganga and Mahananda and connects with them during floods. It is Bihar's first **community reserve** wetland, conserved and managed by the local community. The lake's ecosystem supports diverse flora and fauna, contributing to flood control and water purification. Gogabeel Lake was designated as a **Ramsar site** in 2025, marking its international importance. Its designation adds to Bihar's total of six Ramsar wetlands, ranking the state third in India for Ramsar sites.

#### WHY IN NEWS?

Gogabeel Lake was declared a Ramsar site in November 2025, raising India's total number of such wetlands to 94 and denoting Bihar's growing importance in wetland conservation.

#### **Graded Response Action Plan (GRAP III)**

The Graded Response Action Plan (GRAP III) is a tiered pollution control strategy implemented in Delhi and the National Capital Region (NCR) to combat severe air pollution episodes. It activates specific measures based on real-time Air Quality Index (AQI) readings, such as halting construction, restricting vehicle movement, and shutting schools. GRAP III was designed to be a dynamic and enforceable protocol, but enforcement has often been inconsistent. The plan includes multiple grades, with GRAP III indicating critical pollution levels requiring stringent interventions. It aims to reduce pollution sources promptly during peak pollution events to protect public health.

#### WHY IN NEWS?

Delhi's GRAP III measures have been reduced to a token checklist amid worsening air quality, with poor enforcement during recent severe pollution episodes leading to public health concerns.

#### **Greater Flamingo Sanctuary, Dhanushkodi**

The Greater Flamingo Sanctuary at Dhanushkodi is a protected wetland habitat recognized for hosting migratory flamingos from December to March annually. It supports diverse avifauna and is critical for breeding and feeding. The sanctuary's ecosystem includes seagrass beds and shallow coastal waters, essential for flamingo survival. It is part of Tamil Nadu's network of bird sanctuaries aimed at conserving migratory and resident waterbirds. The site's protection under state notification restricts disruptive activities to preserve bird populations and their habitats, especially during peak migratory seasons.

#### WHY IN NEWS?

The sanctuary's proximity to the proposed wind farm raises concerns about potential risks to flamingos due to habitat disturbance and turbine collisions.

#### **Green Climate Fund (GCF)**

The **Green Climate Fund (GCF)** was established in 2015 under the UNFCCC to support developing countries in climate change mitigation and adaptation. It is the largest global climate finance mechanism with commitments totaling \$19 billion by 2024. The fund aims to balance allocations equally between adaptation and mitigation projects. Despite its scale, only about **25% of committed funds had been disbursed by 2024**. The GCF faces



criticism for complex application processes and limited technical assistance. It supports projects via grants, concessional loans, and guarantees and operates through National Designated Authorities in recipient countries.

#### WHY IN NEWS?

The GCF is central to new national platforms announced at COP30, including India's, to improve climate finance access and coordination for developing countries.

### Green Hydrogen Pilot Projects

Rajasthan is pioneering **green hydrogen** production using renewable energy sources, with pilot projects launched in Jodhpur and Barmer. Green hydrogen is produced by electrolyzing water powered by solar and wind energy, creating a clean fuel alternative. The state aims to become a major green hydrogen exporter by the 2030s. These projects involve partnerships between the government, private companies, and global investors. The hydrogen produced is intended for industrial use and clean transportation, supporting Rajasthan's transition to a green economy. This initiative complements the state's solar and wind energy expansion efforts.

#### WHY IN NEWS?

Rajasthan is advancing its renewable energy agenda by initiating green hydrogen pilot projects as part of its 2047 sustainability and economic development roadmap.

### Green India Mission (GIM)

The Green India Mission is a flagship environmental initiative aiming to restore 25 million hectares of degraded forest and non-forest land by 2030. It targets creating an additional carbon sink of up to **3.39 billion tonnes of CO<sub>2</sub> equivalent**. Between 2015 and 2021, it supported afforestation over **11.22 million hectares** with ₹575 crore disbursed to 18 states. GIM focuses on biodiversity-rich landscapes like the Aravalli Hills, Western Ghats, mangroves, and Himalayan catchments. It integrates with other programs such as the National Agroforestry Policy and CAMPA. The mission emphasizes ecological resilience, native species planting, and community participation.

#### WHY IN NEWS?

The revised blueprint for GIM was released in 2025, emphasizing restoration quality, ecological resilience, and linking with other government schemes to meet India's climate goals.

### Gulf of Mannar-Palk Bay

The **Gulf of Mannar-Palk Bay** is a marine region between Tamil Nadu, and Sri Lanka. It hosts one of the largest seagrass meadows critical for dugong populations. The area supports around 150 to 200 dugongs, the largest stable group in India. It is designated as a Dugong Conservation Reserve since 2022, covering **448 square kilometers** to protect seagrass habitats. The region faces threats from fisheries bycatch, pollution, and habitat degradation. Seagrass beds here contribute to local fish production, valued at a minimum of Rs 2 crore annually. Conservation efforts are ongoing but enforcement challenges remain.



## WHY IN NEWS?

The Gulf of Mannar-Palk Bay is brought into light due to its importance as the primary habitat for India's largest dugong population and the recent establishment of a protected conservation reserve in 2022.

**Halophytes**

Halophytes are plants adapted to grow in saline environments, such as salt marshes and coastal regions, where most plants cannot survive. They can produce grains, biofuels, edible oils, and timber, making them valuable alternatives to freshwater-intensive crops. Species like *Salicornia* and *Atriplex* are cultivated for food and fuel. Some halophytes, such as salt-tolerant *Prosopis*, provide durable timber, while mangroves like *Rhizophora* and *Ceriops* offer high-quality fuelwood. Halophytes contribute to soil stabilization and carbon sequestration. Their cultivation requires saline water, reducing pressure on freshwater resources. Research into halophytes has expanded since the late 20th century, focusing on sustainable agriculture in salt-affected lands.

## WHY IN NEWS?

Halophytes are brought into light as emerging solutions to global freshwater scarcity by enabling agriculture and industry to use abundant saline water, thus reducing dependence on limited freshwater reserves.

**Hydrogen Valleys**

Hydrogen valleys are geographically concentrated ecosystems where hydrogen production, storage, distribution, and utilization are integrated. They combine renewable energy sources, hydrogen infrastructure, and end-use sectors such as transport, industry, and power generation. These valleys serve as pilot regions to demonstrate hydrogen's economic and environmental benefits on a local scale. Globally, hydrogen valleys help accelerate technology adoption, policy development, and supply chain formation. India's National Green Hydrogen Mission includes hydrogen valleys as critical nodes to facilitate industrial decarbonization and export potential, often located near coastal hubs or renewable energy-rich zones.

## WHY IN NEWS?

Hydrogen valleys are part of India's strategy to develop green hydrogen ecosystems that support industrial growth and export ambitions while managing resource constraints like water availability.

**Industrial Hemp Cultivation in Uttarakhand**

Uttarakhand became the first state of India to legalize **industrial hemp cultivation** in 2018 under the NDPS Act, permitting the growth of cannabis strains with very low THC levels for fibre and seed production. This cultivation is regulated through licenses, focusing on non-psychoactive hemp varieties used for industrial and horticultural purposes. Following Uttarakhand, states like Uttar Pradesh, Himachal Pradesh, and Madhya Pradesh also issued licenses for hemp farming. The Union government licenses scientific bodies such as the Council of Scientific and Industrial Research to cultivate



cannabis for medical research.

#### WHY IN NEWS?

The Kerala High Court ruling reaffirmed that cultivation of any cannabis plant is illegal without government permission, contrasting with licensed industrial hemp cultivation in states like Uttarakhand.

### **Integrated Development of Wildlife Habitats (IDWH) Scheme**

The **Integrated Development of Wildlife Habitats (IDWH) Scheme** is a centrally sponsored initiative by the Government of India providing financial and technical assistance to states and union territories for wildlife conservation. It supports activities such as habitat improvement, anti-poaching measures, and biodiversity monitoring. The scheme complements flagship projects like Project Tiger and Project Elephant, aiming to enhance ecological connectivity and protect endangered species. It emphasizes community participation and sustainable use of natural resources. The IDWH Scheme is a key component of India's broader biodiversity conservation framework, facilitating coordinated efforts across various protected areas and biosphere reserves.

#### WHY IN NEWS?

The scheme was mentioned as part of India's multi-pronged approach to biodiversity conservation aligned with the objectives of biosphere reserves in 2025.

### **International Big Cats Alliance (IBCA)**

The International Big Cats Alliance (IBCA) is a collaborative network of countries focused on the conservation of big cat species and their habitats. Founded to enhance coordinated efforts, it currently includes 17 formal member countries with over 30 more expressing interest. IBCA promotes data sharing, joint conservation strategies, and community engagement to protect species like tigers, lions, leopards, and snow leopards. It integrates biodiversity conservation with climate change mitigation by emphasizing ecosystem resilience and carbon storage. IBCA meetings are held alongside global climate forums, encouraging international cooperation on wildlife and environmental policy.

#### WHY IN NEWS?

IBCA was a key topic at COP30, where India announced hosting the Global Big Cats Summit to expand the alliance and promote integrated climate and biodiversity action.

### **Jal Sanchay Jan Bhagidari Awards**

**Jal Sanchay Jan Bhagidari Awards** are national-level awards instituted by the Ministry of Jal Shakti to recognize exemplary community participation and innovative practices in water conservation and management. These awards honor grassroots initiatives, Self-Help Groups (SHGs), Panchayats, NGOs, and individuals who have made contributions to sustainable water use, rainwater harvesting, groundwater recharge, and sanitation improvements. The awards encourage community ownership of water resources and promote replicable models of water stewardship. Recipients receive national recognition, financial incentives, and opportunities to share best practices at state and national forums.



## WHY IN NEWS?

Recipients of the Jal Sanchay Jan Bhagidari Awards were invited to the Vision for Sujalam Bharat Summit 2025 to share their experiences and promote community-led water management.

**Joint Crediting Mechanism (JCM)**

The **Joint Crediting Mechanism (JCM)** is a bilateral cooperation framework initiated by Japan to facilitate emission reductions in partner countries through advanced low-carbon technologies. It operates under Article 6.2 of the Paris Agreement, enabling transparent accounting of emission reductions shared between countries. As of 2025, it includes **31 partner countries** and has implemented over **280 projects**. The JCM supports capacity building, mobilizes finance, and encourages technology deployment in developing nations, promoting equitable climate action. It integrates with national climate strategies and emphasizes sustainable development aligned with partner countries' priorities.

## WHY IN NEWS?

India and Japan reaffirmed their cooperation under the JCM at COP30, emphasizing its role in India's emission targets and climate action plans, with new initiatives planned in renewable energy and hard-to-abate sectors.

**Just Transition Mechanism (JTM)**

The **Just Transition Mechanism (JTM)** is a framework designed to support labor systems and communities in adapting to a fossil-fuel-free future. It emphasizes **justice and equity** by promoting fair employment shifts and social protections for workers affected by the transition away from fossil fuels. The JTM aims to prevent economic dislocation and ensure inclusive growth during the climate transition. It is recognized in the COP30 outcomes as a key element for managing social impacts of climate policies, particularly in developing countries with large fossil fuel-dependent workforces.

## WHY IN NEWS?

JTM featured in COP30 as part of the agreement addressing social justice in climate transitions, especially important for developing countries negotiating fair labor adaptations.

**Kaziranga-Orang Landscape**

The Kaziranga-Orang landscape refers to the ecological corridor connecting Kaziranga Tiger Reserve and Orang National Park in Assam. This landscape supports the migration and movement of wild animals, including tigers, elephants, and various bird species. It includes protected areas like Laokhowa and Burhachapori Wildlife Sanctuaries, which maintain habitat connectivity. The corridor is crucial for maintaining genetic diversity and reducing human-wildlife conflict by allowing wildlife to move freely across fragmented habitats. Conservation efforts in this landscape focus on habitat protection, anti-poaching, and wetland preservation.

## WHY IN NEWS?

Officials emphasize the importance of the Kaziranga-Orang landscape as part of the push to recognize the Rowmari-Donduwa wetland complex as a Ramsar site, enhancing



regional biodiversity conservation.

### Khagaria District

Khagaria is a district in Bihar, located in the eastern Gangetic plains. It is prone to frequent flooding due to its proximity to the Kosi and Ganges rivers. The district's economy is predominantly agrarian, with rice, wheat, and maize as major crops. Groundwater contamination, including uranium, has been reported here, attributed to natural geological factors and human activities. Khagaria's public health infrastructure faces challenges in addressing waterborne contaminants. The district has been a focus in environmental health studies due to elevated uranium levels in local water sources and breastmilk, denoting the need for targeted intervention and monitoring.

#### WHY IN NEWS?

Khagaria district recorded the highest average uranium contamination in breastmilk samples in a recent study assessing infant exposure risks in Bihar.

### Khals and Chaals

Khals and chaals are traditional percolation pits used in mountainous regions of Uttarakhand to enhance groundwater recharge. Khals are small trenches dug along slopes, while chaals are larger pits designed to capture rainwater and facilitate its seepage into the soil. These structures control runoff, reduce soil erosion, and help sustain springs by maintaining groundwater levels. They are usually constructed using local materials and community labor, reflecting indigenous knowledge of water conservation. Their effectiveness depends on proper placement and maintenance, often linked to local agricultural practices and collective village efforts.

#### WHY IN NEWS?

Kandpal's campaign built over 5,000 khals and chaals to revive 27 water sources, improving water availability in multiple villages.

### Khangchendzonga Biosphere Reserve

The **Khangchendzonga Biosphere Reserve** covers 1,784 square kilometres in the Indian Himalayas, featuring ecosystems from subtropical forests to alpine zones. It is India's first mixed UNESCO World Heritage Site, recognized in 2016 for both natural and cultural values. The reserve includes **280 glaciers** and over **70 glacial lakes**. It hosts rare wildlife like snow leopards, red pandas, and over 550 bird species including the impeyan pheasant. The reserve integrates conservation with local culture, involving indigenous Lepcha and Tibetan Buddhist communities, and supports sustainable farming within buffer zones to maintain ecological balance.

#### WHY IN NEWS?

Khangchendzonga Biosphere Reserve was rated good by IUCN in a global review, marking it as the only Indian natural World Heritage site with this status.

### Kharif Crops

Kharif crops are seasonal crops sown at the beginning of the monsoon season, typically between June and July, and harvested in September or October. Major Kharif crops include



rice, maize, sugarcane, cotton, and pulses like tur (arhar), urad, and moong. These crops rely heavily on monsoon rainfall for growth. The term “Kharif” originates from Arabic, meaning “autumn.” Kharif crops contribute to India’s food grain production, accounting for nearly 40% of total annual agricultural output. The yield depends on the timing and quantity of monsoon rains, which can vary widely across regions.

#### WHY IN NEWS?

The 2025-26 first advanced estimates predict record growth in Kharif crop production, with increases in rice, maize, and pulses, contributing to a total food grain production of 173.33 million tonnes.

### **Kollam Coast**

The Kollam coast lies along the southwestern shoreline of Kerala, bordering the Arabian Sea. It is known for its rich marine biodiversity and fishing activities. The coastal waters are part of the continental shelf with depths reaching several hundred meters, supporting diverse marine ecosystems. Kollam’s marine environment includes coral reefs, estuaries, and deep-sea habitats. It plays an important role in local fisheries and marine research. The region has been a site for various marine biological discoveries due to its unique oceanographic conditions influenced by the monsoon and Arabian Sea currents.

#### WHY IN NEWS?

The new deep-sea squid species *Taningia silasii* was discovered off the Kollam coast, underlining the area’s ecological importance and potential for marine species discoveries.

### **Kunming Biodiversity Fund (KBF)**

The Kunming Biodiversity Fund (KBF) was established in 2021 by China’s Ministry of Ecology and Environment in partnership with the UN Environment Programme. It was launched during the 15th Conference of Parties to the Convention on Biological Diversity with an initial pledge of **1.5 billion yuan (~\$200 million)**. The fund aims to support developing countries in implementing the Kunming-Montreal Global Biodiversity Framework (KMGBF) by financing projects that integrate biodiversity conservation with sustainable agriculture. KBF focuses on enhancing ecosystem resilience, managing invasive species, and mainstreaming biodiversity into food systems in seven countries including Madagascar, Turkey, and Nepal.

#### WHY IN NEWS?

KBF recently awarded \$5.8 million in grants to seven countries to support projects making agriculture more nature-friendly and to help meet global biodiversity targets under the KMGBF.

### **Kuno National Park**

Kuno National Park is located in Madhya Pradesh, covering an area of approximately **345 square kilometers**. It was originally established as a wildlife sanctuary in 1981 and later declared a national park in 2018. Kuno is known for its **diverse ecosystems including dry deciduous forests and grasslands**. It has been a key site for reintroducing species such as the Asiatic lion and, more recently, the cheetah. The park is part of a larger



conservation landscape aimed at restoring endangered species and improving biodiversity in central India. It lies near the Chambal River, which supports varied flora and fauna.

#### WHY IN NEWS?

Kuno National Park is in the news as the site where the first India-born cheetah cubs were born, marking milestone in the Cheetah Reintroduction Programme.

### Land Subsidence

Land subsidence is the gradual sinking or settling of the Earth's surface due to subsurface movement of earth materials. It often results from groundwater extraction, which causes soil compaction as water is removed from pore spaces. This process can be uneven, known as differential subsidence, leading to structural damage. Subsidence rates vary globally but can exceed several millimeters per year in urban areas. It increases flood risk, damages infrastructure, and complicates urban development. Besides groundwater overuse, natural factors like tectonic activity and geological faults can contribute. Monitoring uses satellite data, including InSAR technology, to detect ground deformation with high precision.

#### WHY IN NEWS?

India's five largest cities are experiencing land subsidence primarily due to groundwater over-extraction, affecting millions and risking thousands of buildings, as revealed by a recent study analyzing satellite data from 2015 to 2023.

### Land Use, Land-Use Change, and Forestry (LULUCF)

LULUCF encompasses activities that affect greenhouse gas emissions and removals through land management, including deforestation, reforestation, afforestation, and agricultural practices. It is factor in national emission inventories and carbon accounting. LULUCF can act as a carbon sink or source depending on management. In 2024, LULUCF contributed to changes in global emissions, complicating overall emission trends. Accurate accounting of LULUCF is complex due to variable land practices and natural disturbances, affecting climate targets and policy decisions.

#### WHY IN NEWS?

The UNEP report includes LULUCF in emission increase contributions for 2024, denoting its role in global greenhouse gas trends and climate mitigation challenges.

### Landscape Linkage

Landscape linkage refers to natural habitat corridors that connect wildlife populations across geographical boundaries, facilitating animal movement and genetic exchange. In this case, the **tiger migrated naturally from Madhya Pradesh to Gujarat** through such a linkage, without human translocation. These connections are crucial for species survival, especially for wide-ranging apex predators like tigers. Landscape linkages help mitigate habitat fragmentation caused by human development and enable species to find new territories, mates, and resources. Their effectiveness depends on maintaining continuous or stepping-stone habitats with sufficient prey and water.



## WHY IN NEWS?

The tiger's arrival in Gujarat was enabled by landscape linkage between Madhya Pradesh and Gujarat, allowing natural migration and settlement in Ratanmahal Sanctuary.

**Laokhowa Wildlife Sanctuary**

Laokhowa Wildlife Sanctuary spans 70.13 sq. km in Assam and is part of the Kaziranga Tiger Reserve. It is known for its role as a connectivity corridor for wildlife migration between Kaziranga Tiger Reserve and Orang National Park, facilitating gene flow and animal movement. The sanctuary houses the Rowmari-Donduwa wetland complex and supports diverse fauna, including endangered species. Established in 1972, it is one of the few protected areas in Assam that integrates wetland and forest ecosystems. The sanctuary has been subject to conservation efforts focusing on habitat restoration and floodplain ecosystem monitoring.

## WHY IN NEWS?

Laokhowa Wildlife Sanctuary's wetlands are under consideration for Ramsar site status, denoting its ecological significance within the Kaziranga-Orang landscape.

**Leptospirosis**

Leptospirosis is a bacterial disease caused by **Leptospira** bacteria, primarily transmitted through water or soil contaminated with the urine of infected animals, especially rodents. The bacteria enter the human body via cuts, mucous membranes, or eyes. Symptoms initially mimic flu, including fever and muscle aches, but it can escalate to severe complications like kidney failure, liver damage, meningitis, and internal bleeding. The disease is globally distributed, often surfacing after floods or heavy rains. Diagnosis requires serological testing, and treatment involves antibiotics such as doxycycline or penicillin. Preventive measures include avoiding contaminated water and rodent control.

## WHY IN NEWS?

Leptospirosis cases surged in Jamaica following Hurricane Melissa in late October 2025, with six deaths and multiple suspected cases linked to flood-contaminated water.

**Lesser Florican**

The **Lesser Florican** (*Sypheotides indicus*) is a small bustard species endemic to the Indian subcontinent, known for its spectacular leaping mating displays. It inhabits grasslands and open plains but has suffered severe population declines due to habitat destruction and agricultural expansion. Current estimates place the population at around 70 individuals. Unlike the Great Indian Bustard, captive breeding attempts have largely failed. The Lesser Florican is protected under Schedule I of the Indian Wildlife Protection Act and is classified as critically endangered by the IUCN. It is an indicator species for grassland ecosystem health.

## WHY IN NEWS?

The ongoing Supreme Court case addresses the declining population of the Lesser Florican and the challenges of its conservation, including the failure of captive breeding programs.



## LiDAR Data Release for Riverathon

LiDAR (Light Detection and Ranging) technology uses laser pulses to create high-resolution topographic maps and 3D models of river basins. In the Ganga rejuvenation context, LiDAR data helps monitor river morphology, floodplains, and urban encroachments. The LiDAR Data Release for Riverathon 1.0 provided participants with precise geospatial information to develop innovative solutions for river management. This data supports scientific planning, enabling better decision-making in urban river management and pollution control. The integration of LiDAR with drone assessments and water quality monitoring enhances the accuracy of environmental models essential for sustainable river restoration.

### WHY IN NEWS?

LiDAR data was released during the Ganga Utsav event at Amity University, Noida, to support the Riverathon competition encouraging youth-led technical innovations for river conservation.

## Loss and Damage Fund

The **Loss and Damage Fund** is a financial mechanism established under the UNFCCC to provide support to developing countries suffering irreversible climate impacts. It aims to address economic and non-economic losses from extreme weather events and slow-onset changes like sea-level rise. The fund focuses on grants rather than loans to avoid increasing debt burdens. It is linked with the Santiago Network, which offers technical assistance for recovery and resilience. Despite progress, the fund's operationalization faces challenges related to governance, funding adequacy, and ensuring equitable access for vulnerable communities.

### WHY IN NEWS?

The Loss and Damage Fund was brought into light at COP30 as a critical but underfunded mechanism requiring reform to effectively support the Global South's climate resilience.

## Lycodon irwini

*Lycodon irwini* is a newly identified species of wolf snake endemic to Great Nicobar Island. It is characterized by a **uniform glossy black color**, differing from related species that have white bands or patches. The snake reaches up to **1.2 meters** in length, is slender and nocturnal. It has a distinct higher count of belly and tail scales than its relatives. The holotype specimen is an adult female with voucher number **DOSMB 05114**. It has been recorded only four times in moist evergreen forests and is recommended for Endangered status due to its rarity and limited range.

### WHY IN NEWS?

Scientists discovered *Lycodon irwini*, a new snake species on Great Nicobar Island, denoting the island's unique biodiversity and the snake's distinction from similar species through DNA and morphological analysis.

## Manufactured Sand (M-sand)

Manufactured sand, or **M-sand**, is produced by crushing hard rocks like granite into fine



particles that resemble natural river sand. It serves as a substitute for river sand in construction, especially where natural sand is scarce or banned. M-sand particles are angular and rougher than natural sand, which can improve concrete strength but may require more water. It gained prominence in India after bans on river sand mining, notably in Kerala in 2016. The rapid increase in M-sand demand has led to a surge in stone quarrying, affecting ecosystems near protected areas. M-sand production involves mechanical crushing and sieving processes.

#### WHY IN NEWS?

The rise of M-sand production in Kerala followed the 2016 ban on river sand mining, leading to a sharp increase in stone quarrying near protected wildlife areas, raising environmental concerns.

### Mass Gathering Medicine

Mass Gathering Medicine is a specialized branch of healthcare focused on the medical management and public health challenges posed by large-scale events involving dense human populations. It deals with infectious disease surveillance, emergency preparedness, and outbreak control in settings like religious pilgrimages, sports events, and festivals. The field integrates epidemiology, disaster medicine, and health systems management to prevent and respond to health risks. The journal "Mass Gathering Medicine" publishes peer-reviewed research on these topics, including case reports, outbreak investigations, and policy recommendations. It is a relatively new discipline reflecting growing global mobility and event sizes.

#### WHY IN NEWS?

The case study documenting the first Gulf-acquired scrub typhus diagnosed in India was published in the peer-reviewed journal Mass Gathering Medicine in 2025.

### Microplastic Contamination in Drinking Water

Microplastics are plastic particles smaller than 5 millimeters, often originating from the breakdown of larger plastic waste or microbeads in products. Ingested through bottled and packaged drinking water, these particles can cause inflammation, oxidative stress, and endocrine disruption in humans. Studies show microplastics can bioaccumulate in organs like the brain, liver, and kidneys, posing long-term health risks. Microplastic contamination in bottled water has been detected worldwide, with varying concentrations depending on packaging and source. Regulatory frameworks addressing microplastic contamination in drinking water are still evolving globally. The presence of nanoplastics (<100 nanometers) raises additional toxicological concerns.

#### WHY IN NEWS?

The High Court ordered regulatory review of microplastic contamination in bottled water, prompted by alarming health concerns raised in a petition.

### Migratory Bird Species in Pobitora

Pobitora Wildlife Sanctuary is a wintering ground for around **69 species of migratory birds**, up from 56 species the previous year. These birds originate from diverse regions



including Europe, America, and Tibet. Species include waterfowl, raptors, and passerines. The sanctuary's wetlands and grasslands provide essential feeding and breeding habitats. Migratory birds arrive as early as November and stay through winter months. The increase in species diversity is an indicator of improving habitat quality. Birdwatching tourism has grown, contributing to local revenue and awareness about migratory bird conservation.

#### WHY IN NEWS?

The early arrival and increased variety of migratory birds in Pobitora this November 2025 has attracted tourists and conservation attention.

### **Mukhi (Cheetah)**

Mukhi is a female cheetah born in India as part of the **Cheetah Reintroduction Programme**. She was born approximately 33 months before November 2025 and represents the first generation of cheetahs born in India after their extinction in the country in the 1950s. Mukhi gave birth to five cubs, contributing to the growth of the cheetah population in India. She is named in the context of conservation efforts and is monitored closely by wildlife officials at Kuno National Park. Mukhi's successful breeding is a key indicator of the programme's scientific planning and habitat suitability.

#### WHY IN NEWS?

Mukhi gave birth to five cubs at Kuno National Park, increasing the cheetah population in India to 32 and marking a conservation milestone.

### **Multi-Hazard Early Warning Systems**

Multi-hazard early warning systems integrate information from various sources to provide timely alerts about different natural disasters such as floods, cyclones, wildfires, and heatwaves. These systems combine meteorological data, seismic activity, and environmental monitoring to reduce risks and save lives. Since 2015, the number of countries with such systems has more than doubled, reaching 119 by 2024. However, 40% of countries still lack these systems. Effective early warnings require infrastructure, communication networks, and community preparedness. They are essential for disaster risk reduction and climate adaptation, especially in vulnerable regions prone to multiple hazards.

#### WHY IN NEWS?

The WMO report brought into light the expansion of multi-hazard early warning systems as a key advance in mitigating the impacts of extreme weather events in 2025.

### **Nagarjuna Sagar Tiger Reserve (NSTR)**

The Nagarjuna Sagar Tiger Reserve covers **3,296.31 sq km** across Palnadu, Prakasam, and Nandyal districts in Andhra Pradesh. It is India's largest tiger habitat and has shown a steady increase in tiger population – 48 in 2014, 62 in 2018, 73 in 2022, and over 86 currently. The reserve includes diverse ecosystems, supporting multiple carnivores and herbivores. It is linked to other forest areas via corridors, facilitating tiger dispersal. NSTR plays a critical role in regional biodiversity conservation and is a focal point for India's tiger



recovery efforts.

#### WHY IN NEWS?

NSTR is preparing for the next tiger census as part of the All India Tiger Estimation 2026, aiming to document the growing tiger population and habitat expansion.

### **Nalgonda Water Purification Units**

Nalgonda district in Telangana implemented decentralized community water purification units to combat fluorosis. These units use affordable filtration technologies to remove fluoride from groundwater, providing safe drinking water. The initiative has led to a measurable decline in new fluorosis cases among children. The purification units are often solar-powered and low-maintenance, suitable for rural deployment. The program is considered a model for community-led intervention in water quality management. It demonstrates how local solutions can improve public health without large-scale infrastructure. The units also reduce medical expenses and improve productivity by lowering disease incidence.

#### WHY IN NEWS?

Nalgonda's success with community purification units is cited as a practical solution to fluorosis in affected villages, offering a template for similar interventions across India.

### **Nallamala-Seshachalam Corridor**

The Nallamala-Seshachalam corridor connects the Nallamala forests with the Seshachalam hills, spanning Kadapa, Nellore, and the erstwhile Chittoor districts. This corridor facilitates tiger and wildlife movement between these forest zones, promoting genetic diversity and habitat expansion. Increased tiger sightings in Lankamalleswara Sanctuary (Kadapa) and Penchala Narasimhaswami Konda (Nellore) demonstrate the corridor's effectiveness. Wildlife corridors like this are critical for reducing human-wildlife conflict and ensuring long-term species survival by linking fragmented habitats.

#### WHY IN NEWS?

The corridor is enabling tiger dispersal into new zones, contributing to population growth and habitat expansion documented in the upcoming tiger census.

### **National Green Hydrogen Mission (NGHM)**

The National Green Hydrogen Mission (NGHM) is an initiative by the Government of India launched in 2023 to promote the production and use of green hydrogen. It aims to reduce carbon emissions by substituting fossil fuels with hydrogen produced via renewable energy sources. The mission includes financial incentives, infrastructure development, and research support to scale up green hydrogen technologies. NGHM targets sectors like transportation, industry, and power generation. It also encourages localization of hydrogen technology manufacturing in India. The mission aligns with India's commitment to achieving net-zero emissions by 2070 and boosting energy security through domestically produced clean fuels.

#### WHY IN NEWS?

The International Conference on Green Hydrogen (ICGH 2025) is part of the government's efforts to advance the National Green Hydrogen Mission by facilitating dialogue on scaling



production and infrastructure.

### **National Outdoor Air and Disease Surveillance (NOADS)**

The National Outdoor Air and Disease Surveillance (NOADS) system in India tracks daily aggregates of respiratory emergencies and hospital admissions from selected tertiary hospitals. It is part of the National Clean Air Programme. NOADS is in its early stages, capturing only acute respiratory illnesses and lacking advanced analytical tools. It struggles to generate credible evidence due to inconsistent reporting from institutions that warn citizens about pollution. The system's limitations hinder its ability to estimate pollution thresholds or issue health-impact-based early warnings, weakening the link between pollution monitoring and public health response.

#### WHY IN NEWS?

NOADS is mentioned as a critical but underdeveloped system in India's efforts to monitor health impacts of air pollution and provide early warnings.

### **Nationally Determined Contribution (NDC)**

The **Nationally Determined Contribution (NDC)** is a climate action plan submitted by countries under the Paris Agreement, outlining targets for reducing greenhouse gas emissions and adapting to climate impacts. These plans are updated periodically, with the third iteration (NDC 3.0) focusing on post-2030 commitments. NDCs serve as measurable benchmarks for accountability and progress tracking in global climate efforts. They include specific policies, timelines, and financial mechanisms. The ratcheting mechanism requires countries to increase ambition over time. NDCs also influence domestic policy and business environments, especially in renewable energy and climate technology sectors.

#### WHY IN NEWS?

COP30 discussions centered on the submission and evaluation of NDC 3.0 plans, with many countries still pending, including India, denoting the urgency of enhanced climate commitments.

### **Nationally Determined Contributions (NDCs 3.0)**

NDCs 3.0 refers to the third round of Nationally Determined Contributions submitted by countries under the Paris Agreement, covering the 2031-2035 period. These climate plans outline each country's targets for emission reductions and adaptation strategies. The Paris Agreement requires countries to update and enhance their NDCs every five years to increase ambition. The 2025 submissions emphasize accelerated emission cuts, adaptation, and financial support. Developing countries often seek equitable and predictable climate finance to meet these goals. India is expected to submit or update its NDCs 3.0 at COP30, reflecting progress and revised targets.

#### WHY IN NEWS?

COP30 is the deadline for countries to submit their updated NDCs 3.0, with India likely to present its enhanced climate action plans ahead of schedule.



## Nationally Determined Contributions (NDCs)

Nationally Determined Contributions are climate action plans submitted by countries under the Paris Agreement, outlining targets to reduce greenhouse gas emissions. They are updated periodically to reflect increased ambition or new policies. NDCs include mitigation, adaptation, and finance commitments. By 2025, only 60 Parties, representing 63% of global emissions, had submitted or announced new 2035 NDCs. Full implementation of current NDCs would reduce emissions by only 15% compared to 2019 levels, far short of the 55% reduction needed for the 1.5°C target. NDCs are legally non-binding but politically for international climate cooperation.

### WHY IN NEWS?

The UNEP Emissions Gap Report 2025 marks that current NDCs are insufficient to meet Paris Agreement targets, showing only marginal progress in limiting global warming.

## Natural Resources Wales

Natural Resources Wales (NRW) is the principal environmental body responsible for managing natural resources and environmental protection in Wales. Established in 2013, NRW oversees flood risk management, conservation, pollution control, and sustainable development. It issues flood warnings and alerts to mitigate risks from natural hazards, including river flooding and coastal erosion. NRW uses advanced hydrological models and real-time data to inform emergency responses. It collaborates with local authorities, emergency services, and the public to reduce environmental impacts and enhance resilience against climate change effects. NRW's flood warning system is integral to Welsh flood preparedness.

### WHY IN NEWS?

Natural Resources Wales issued multiple flood warnings and alerts during Storm Claudia, which caused severe flooding and evacuations in southeastern Wales.

## Neer Maruthu Tree

The **Neer Maruthu** tree (*Calophyllum tomentosum*) is a tropical hardwood species native to the Western Ghats and parts of southern India. It thrives in moist, evergreen forests, including protected areas like the Mudhumalai Tiger Reserve. The tree provides critical habitat and refuge for several endangered vulture species, supporting their nesting and roosting needs. Neer Maruthu is valued for its dense wood and medicinal properties in traditional medicine. Its ecological role in sustaining scavenger bird populations contributes to maintaining forest health by facilitating carcass decomposition and nutrient cycling.

### WHY IN NEWS?

The Mudhumalai Tiger Reserve's thriving Neer Maruthu trees are brought into light for their role in providing refuge to endangered vultures, emphasizing habitat conservation in the ongoing biodiversity discussions.

## New Collective Quantified Goal (NCQG)

The **New Collective Quantified Goal (NCQG)** was established at COP29 in Baku as a



climate finance target. Developed countries committed to mobilizing **\$300 billion annually by 2035** for climate action, with a plan to expand total climate finance to **\$1.3 trillion annually** from all sources. The NCQG framework prioritizes developed countries taking the lead in funding, encouraging voluntary contributions from others. It integrates both mitigation and adaptation finance, aiming to balance support for renewable energy projects and climate resilience infrastructure in developing countries.

#### WHY IN NEWS?

NCQG is central to COP30 discussions on scaling climate finance, especially for adaptation, reflecting ongoing commitments to fund developing countries' climate needs through 2035.

### **Nicobar Megapode**

The **Nicobar Megapode** is an endemic bird species found only in the Nicobar Islands, classified under Schedule 1 of the Wildlife (Protection) Act, 1972, granting it the highest protection status in India. It is notable for its unique nesting behavior, creating large mounds of decomposing vegetation to incubate eggs using heat from microbial activity. The species plays a critical ecological role in seed dispersal and forest regeneration. Its nesting sites, especially in Galathea Bay, are highly sensitive to environmental disturbances. The megapode's population is threatened by habitat loss due to infrastructure projects and deforestation.

#### WHY IN NEWS?

The Nicobar Megapode's nesting mounds in Galathea Bay are threatened by the Great Nicobar mega infrastructure project, which includes a port and other developments, raising concerns about habitat destruction and conservation.

### **One Health Framework**

The One Health framework is an integrated, multidisciplinary approach linking human, animal, and environmental health to address complex health challenges. It emphasizes collaboration among medical, veterinary, and environmental sciences to prevent and control zoonotic diseases. Key components include animal disease surveillance, vector control, public health education, and environmental management. The framework supports early detection of outbreaks by monitoring livestock health and environmental conditions. It also promotes coordinated responses involving multiple sectors to reduce disease transmission risks. One Health is critical for managing diseases like Rift Valley Fever, which impact both human and animal populations and are influenced by ecological factors.

#### WHY IN NEWS?

The 2025 Rift Valley Fever outbreak response in West Africa utilizes the One Health approach to manage human and animal health risks and control virus spread.

### **One Sun One World One Grid**

One Sun One World One Grid (OSOWOG) is an international initiative launched by India in 2021 to create a global solar energy grid. It aims to connect solar power across countries



and continents to ensure uninterrupted solar energy supply by sharing excess power between time zones. OSOWOG promotes regional cooperation, energy security, and renewable energy integration. It leverages advancements in smart grid technology and cross-border energy trade. The initiative is supported by the International Solar Alliance and targets reducing dependence on fossil fuels. OSOWOG envisions a unified platform for solar energy sharing to accelerate the global energy transition.

WHY IN NEWS?

OSOWOG remains a flagship Indian-led project discussed at COP28 for enhancing international solar energy collaboration.

### Operation Weed Out

Operation Weed Out is an ongoing anti-drug initiative led by the Directorate of Revenue Intelligence (DRI) in India, targeting narcotics smuggling through airports. It focuses on intercepting high-grade Hydroponic Weed and other narcotics concealed in innovative ways, such as within food packets. Since its inception, the operation has resulted in multiple seizures, including over 292.9 kg of Hydroponic Weed across various airports. It aims to dismantle international drug trafficking networks and reduce drug availability in India. The operation leverages intelligence inputs and advanced testing kits under the NDPS Act, 1985, to ensure swift arrests and prosecution of offenders.

WHY IN NEWS?

Operation Weed Out recently led to the seizure of 42.34 kg of Hydroponic Weed at Mumbai's airport, adding to over ₹100 crore worth of narcotics seized in three days, denoting its ongoing success.

### Pampadum Shola National Park

Pampadum Shola National Park spans just over **1,300 hectares** in the Idukki district of Kerala, located at elevations between **1,900 and 2,300 metres**. It is the southernmost example of the shola-grassland mosaic ecosystem in the Western Ghats, one of the world's oldest mountain ranges. The park hosts unique species such as the **Nilgiri marten**, Kerala laughing thrush, black-and-orange flycatcher, and several endemic orchids and tree ferns. Its grasslands act as natural sponges, capturing rainwater and feeding the headstreams of the Pambar and Vaigai rivers, crucial for the dry plains of Tamil Nadu.

WHY IN NEWS?

Pampadum Shola is in the news for its successful ecological restoration project, which involves removing invasive black wattle trees to revive native grasslands and streams, reversing decades of environmental damage.

### PARIVESH Portal

The **PARIVESH** portal is an Government of India online platform designed for the **reporting, registration, and monitoring** of wildlife species, including exotic pets. It facilitates applications for permits, breeder licenses, and ownership registrations under wildlife protection laws. Introduced to streamline compliance with the Wildlife Protection



Act and CITES regulations, it helps track species movement and trade. The portal also supports environmental clearances and forest-related permissions. It was updated to version 2.0 in 2024 to include mandatory registration for exotic species owners, including pet shops and breeders, improving data transparency and regulatory oversight.

#### WHY IN NEWS?

Kerala's Forest department reported receiving breeder license applications for African grey parrots via the PARIVESH portal, denoting its central role in regulating exotic species trade across state of Indias.

### Postojna Cave

Postojna Cave is a 24,120-meter-long karst cave system in southwestern Slovenia, one of the most visited show caves in Europe. It features a complex network of passages, galleries, and chambers with diverse speleothems like stalagmites and stalactites. The cave hosts the endemic olm (*Proteus anguinus*), a blind amphibian adapted to dark underground waters. Postojna Cave was first explored in the 17th century and has a railway system installed in 1872 to facilitate tourism. Its stable microclimate and mineral-rich waters make it ideal for studying cave mineral formations and climate history through speleothems.

#### WHY IN NEWS?

The cave provided real stalagmite samples for validating new mathematical models predicting their shapes based on fluid dynamics and mineral deposition.

### Potential Ecological Risk Index

The **Potential Ecological Risk Index** (PERI) evaluates the ecological threat posed by heavy metals in sediments by integrating contamination levels and toxic response factors for each metal. Developed by Hakanson in 1980, PERI helps assess the environmental risk by quantifying the likelihood of adverse effects on aquatic ecosystems. It considers both the concentration of metals and their relative toxicity, providing a risk score that guides environmental management. This index is crucial for assessing cumulative effects of multiple pollutants and prioritizing areas for remediation, especially in rivers affected by industrial discharge and agricultural runoff.

#### WHY IN NEWS?

The recent Cauvery river study applied PERI to assess the ecological risks from heavy metals like cadmium and lead, denoting areas where contamination poses threats to river health.

### Project Cheetah

**Project Cheetah** is an Government of India initiative launched in 2022 to reintroduce African cheetahs into central India's grassland-savanna habitats, replacing the extinct native Asiatic cheetah. So far, 20 adult cheetahs have been translocated from Namibia and South Africa, with nine deaths due to infections and injuries. The cheetahs undergo quarantine before release into Kuno National Park. Climatic differences between Africa and India have caused health issues, such as thicker winter coats leading to infections.



India is now sourcing cheetahs from Botswana to mitigate these problems. The project faces challenges including international cooperation and health management of the translocated animals.

#### WHY IN NEWS?

President Droupadi Murmu's visit to Botswana to discuss the translocation of eight African cheetahs to India under Project Cheetah marks ongoing efforts and challenges in this conservation initiative.

#### Project Tiger Directors

Project Tiger Directors are senior officials appointed to oversee tiger conservation initiatives under India's Project Tiger program, launched in 1973. They coordinate efforts across tiger reserves, implementing anti-poaching measures, habitat management, and conflict mitigation strategies. These directors work closely with forest departments, wildlife biologists, and local communities. Their responsibilities include monitoring tiger populations through camera traps and DNA analysis, ensuring adherence to National Tiger Conservation Authority protocols, and supervising rehabilitation of orphaned or injured tigers. Project Tiger Directors also manage staff deployment during emergencies, such as capturing man-eating tigers, and lead awareness campaigns to reduce human-wildlife conflict.

#### WHY IN NEWS?

Project Tiger Directors were directed to camp at Saragur to lead efforts to capture the tiger responsible for multiple human deaths in 2025.

#### Project Vartak

Project Vartak is an initiative by the Border Roads Organisation (BRO) focused on constructing and maintaining roads in the Northeast and Himalayan border regions of India. It aims to improve connectivity in difficult terrains, including Arunachal Pradesh and Ladakh, to support both civilian access and military logistics. The project often involves building bridges, culverts, and border outposts. The **Balipara-Charduar-Tawang road** is a key route under Project Vartak, enhancing strategic mobility near the India-China border. The project incorporates environmental safeguards due to its location in ecologically sensitive zones, including elephant corridors and biodiversity hotspots.

#### WHY IN NEWS?

The NBWL approved the use of 0.37 hectares of the Eco-Sensitive Zone in Eaglenest Wildlife Sanctuary for a permanent bridge on the Balipara-Charduar-Tawang road under Project Vartak.

#### Protidricerus albocapitatus

*Protidricerus albocapitatus* is a newly identified owlfly species from the family Myrmeleontidae, order Neuroptera. It was discovered in the Nedumkayam forest, Malappuram, part of the Western Ghats biodiversity hotspot. The species name derives from Latin – **albus** meaning white and **capitatus** referring to a white tuft on its head and antennae. This is only the second *Protidricerus* species recorded in India, the first being



*Protidricerus elwesii* described in 1891. Owlflies have long, clubbed antennae and are active during twilight, distinguishing them from dragonflies. The formal description was published in the journal *Zootaxa*.

#### WHY IN NEWS?

Scientists at Shadpada Entomology Research Lab, Christ College, Irinjalakuda, discovered this new owlfly species in November 2025 during a survey of Malappuram's Nedumkayam forest.

### **Provincial Disaster Risk Reduction and Management Office (PDRRMO)**

The Provincial Disaster Risk Reduction and Management Office (PDRRMO) is a local government agency in the Philippines responsible for disaster preparedness, response, and recovery at the provincial level. It coordinates with national agencies, local governments, and communities to implement risk reduction strategies, emergency operations, and relief distribution. PDRRMO manages evacuation centers, prepositions emergency resources, and conducts public information campaigns. It plays a critical role in natural disaster events such as typhoons, earthquakes, and floods, often activating a red alert status to mobilize resources. The office works closely with barangay officials and other agencies for effective disaster management.

#### WHY IN NEWS?

PDRRMO in La Union declared red alert status and mobilized emergency response teams as Super Typhoon Uwan threatened the province with flooding and landslides.

### **Ratanmahal Wildlife Sanctuary**

Ratanmahal Wildlife Sanctuary is located in Dahod district, Gujarat, bordering Madhya Pradesh's Jhabua and Kathiwada regions. It covers an area of approximately 40 square kilometers and is part of the Eastern Satpura landscape. The sanctuary features dry deciduous forests and is home to species like leopards, sambar deer, and nilgai. It was traditionally known for leopard sightings but had no confirmed tiger presence since the 1980s until 2025. The sanctuary serves as important corridor connecting tiger populations in Madhya Pradesh and Gujarat. It plays a vital role in regional biodiversity conservation and wildlife monitoring efforts.

#### WHY IN NEWS?

The sanctuary recorded the return of a tiger after nearly four decades, marking milestone in Gujarat's wildlife conservation efforts.

### **REDD+ Programme**

REDD+ stands for Reducing Emissions from Deforestation and Forest Degradation. It is a UN-backed initiative providing financial incentives to developing countries for conserving forests and enhancing sustainable forest management. REDD+ aims to reduce carbon emissions by preventing deforestation and forest degradation, which are major sources of CO<sub>2</sub>. It also promotes forest restoration and carbon stock enhancement. The programme links environmental conservation with economic benefits through carbon credit markets. REDD+ includes safeguards to protect indigenous rights and biodiversity. It has been



operational since 2008 and remains a critical tool in global efforts to use forests as carbon sinks.

#### WHY IN NEWS?

REDD+ is cited in recent climate policy discussions as a model for incentivizing sustainable forest management and carbon sequestration in developing countries.

### Renewable Energy Cost Declines

Between 2010 and 2022, the global cost of installed solar photovoltaic (PV) systems dropped by 83%, while onshore wind costs fell by 42%. Battery prices decreased by approximately 90% from 2010 to 2023, driven by technological innovation and reduced raw material costs. These cost reductions have made renewable energy more competitive with fossil fuels, especially in emerging-market economies. China's large-scale green manufacturing has played a key role in lowering costs. These trends enable rapid expansion of renewable capacity, with projections showing installed renewable capacity in nine G20 EMEs nearly doubling from 2,150 GW to 4,220 GW by 2030.

#### WHY IN NEWS?

Sharp declines in renewable energy and battery costs underpin the feasibility of large-scale clean energy deployment in G20 emerging-market economies, supporting climate finance projections.

### Royal Bengal Tiger

The Royal Bengal Tiger (*Panthera tigris tigris*) is a subspecies native to the Indian subcontinent. It is the most numerous tiger subspecies, with populations primarily in India, Bangladesh, Nepal, and Bhutan. Recognized for its distinctive orange coat with black stripes, it plays an important role as an apex predator maintaining ecosystem balance. India has successfully doubled its Royal Bengal Tiger population ahead of targets through habitat protection, anti-poaching efforts, and community involvement. This tiger is also a national symbol of India and Bangladesh. It inhabits diverse environments from mangroves to grasslands and forests.

#### WHY IN NEWS?

India brought into light its success in doubling the Royal Bengal Tiger population during COP30, emphasizing its conservation as part of broader climate and biodiversity goals.

### Sambhar Lake

Sambhar Lake is **India's largest inland saltwater lake**, located in Rajasthan, spanning Jaipur, Nagaur, and Ajmer districts. Its area varies between 190 and 230 sq km depending on rainfall. Designated as a **Ramsar site**, it supports diverse migratory birds from Central Asia and Europe. The lake's saline water is harvested for salt production. It has a unique ecosystem where water levels fluctuate with monsoon rains. The lake also serves as a critical habitat for species like lesser and greater flamingos and northern shovelers. Industrial effluents and untreated wastewater pose ongoing environmental threats to its ecology.

#### WHY IN NEWS?

Sambhar Lake is in the news due to a 40% increase in migratory bird arrivals this winter,



attributed to the highest water levels in five decades after heavy monsoon rains.

### Sendai Framework

The **Sendai Framework for Disaster Risk Reduction** is a 15-year, voluntary, non-binding agreement adopted by UN member states in 2015. It aims to reduce disaster risk globally through improved understanding, governance, investment in risk reduction, and preparedness. The framework emphasizes inclusive, community-based approaches and resilience building. It identifies four priority areas – understanding disaster risk, strengthening disaster risk governance, investing in disaster risk reduction, and enhancing disaster preparedness for effective response. India's proposed terrorism management strategy draws inspiration from the Sendai Framework's principles, adapting them to the context of human-induced disasters like terrorism.

#### WHY IN NEWS?

The article suggests mirroring the Sendai Framework's four pillars in India's new National Terrorism Management Plan to improve systemic and community-based responses to terrorism.

### Shnongpdeng

Shnongpdeng is a small village in Meghalaya known for its scenic beauty and adventure tourism, including river rafting and camping. Situated along the Umngot River, it attracts tourists seeking tranquil natural settings and water-based activities. The village economy heavily depends on tourism, with local residents operating camping sites and boat services. It is less commercialized compared to other tourist spots, preserving its natural charm. The area is also culturally rich, inhabited by indigenous Khasi communities who maintain traditional practices. Shnongpdeng's accessibility has improved recently due to infrastructure projects aimed at boosting regional tourism.

#### WHY IN NEWS?

Tourists visiting Shnongpdeng in 2025 found the Umngot River murky, affecting local tourism and prompting complaints from residents who run camping businesses dependent on the river's clarity.

### Shola-Grassland Mosaic

The shola-grassland mosaic is a unique high-altitude ecosystem found in the Western Ghats, consisting of stunted tropical montane forests (sholas) interspersed with rolling grasslands. These grasslands serve as **hydrological reservoirs**, absorbing rainfall and slowly releasing it to maintain perennial streams. The ecosystem supports numerous endemic species and maintains soil porosity and fertility. Historically, colonial forestry programs misclassified these grasslands as wastelands, leading to their replacement with exotic plantations, which disrupted water cycles and biodiversity. Restoration efforts focus on preserving this mosaic to sustain both wildlife and local agriculture.

#### WHY IN NEWS?

The restoration of the shola-grassland mosaic in Pampadum Shola National Park is a model project demonstrating the ecological importance of grasslands and the



consequences of invasive tree plantations in the Western Ghats.

### **Silence Zone (Nagaland)**

A **Silence Zone** is a legally designated area where noise pollution is strictly controlled to protect wildlife or sensitive habitats. In Nagaland, a 3-kilometer radius around the Amur Falcon roosting site at Pangti village is declared a temporary Silence Zone during October-November migration. This measure reduces disturbances caused by loud noises, which can induce stress and cause birds to abandon roosting sites. The zone helps maintain critical communication for survival and reproduction of the birds. Violations can lead to penalties, including withdrawal of government grants to offending villages, emphasizing community responsibility in conservation.

#### WHY IN NEWS?

The Deputy Commissioner of Wokha district implemented the Silence Zone to safeguard Amur Falcons during their peak migration and roosting period in Nagaland.

### **Slender-billed Vulture**

The slender-billed vulture (*Gyps tenuirostris*) is a Critically Endangered species once widespread across the lower Gangetic plains and Brahmaputra valley. It has vanished from all 47 historically documented nesting sites in India and now nests only at 12 newly identified locations, mainly in Upper Assam. The species prefers nesting on **Bombax ceiba** (silk cotton) trees, which are tall with broad canopies found in floodplains. The population is critically low, with only 20 active nests recorded. Habitat loss and deforestation of these specific nesting trees contribute to its decline.

#### WHY IN NEWS?

The 2023–2025 Pan India Assessment reported the disappearance of slender-billed vultures from all historical sites and identified only a few new nesting locations, denoting its precarious status.

### **Smart Proteins**

Smart proteins refer to plant-based, cultivated (lab-grown), and fermentation-derived protein alternatives that offer lower environmental footprints compared to conventional animal proteins. They require less land, water, and emit fewer greenhouse gases. Smart proteins leverage biotechnology and food science innovations to mimic the taste and nutritional profile of traditional proteins. India's cultural familiarity with plant-based diets provides a favorable environment for their adoption. Investment in smart protein R&D, production, and policy support is seen as a way to address protein deficiency, reduce emissions, and create new industries and export opportunities.

#### WHY IN NEWS?

Smart proteins are central to India's strategy to reduce livestock emissions and align with global ESG and trade standards, with over 60% of agribusinesses expected to adopt related standards by 2025.

### **Sovereign Green Bonds (India)**

India issued its first Sovereign Green Bonds in January 2023, raising approximately INR



8,000 crore (around USD 1 billion). These bonds finance environmentally beneficial projects like energy-efficient electric locomotives. Sovereign green bonds are government-issued debt instruments dedicated exclusively to funding projects with positive environmental impacts. India's issuance marked a step in mobilizing domestic capital for clean energy and sustainability projects. This initiative complements India's broader climate finance strategy, which includes mobilizing USD 50 billion domestically in 2022 and aiming for USD 10-20 trillion by 2070 for decarbonisation and adaptation.

#### WHY IN NEWS?

India's first Sovereign Green Bonds issuance demonstrates its commitment to sustainable financing and supports large-scale climate projects domestically.

### State of Wildfires Report

The State of Wildfires report is an annual assessment conducted by a coalition of weather agencies and universities tracking wildfire extent, severity, and emissions worldwide. The 2024-2025 report recorded 3.7 million sq. km burned, slightly below the two-decade average but with increased CO<sub>2</sub> emissions due to more intense fires. Wildfires contribute to atmospheric carbon and impact air quality and ecosystems. The report helps guide policy and firefighting strategies by providing data on fire trends, affected regions, and emissions linked to climate change.

#### WHY IN NEWS?

The 2024-2025 State of Wildfires report revealed that despite slightly less area burned, wildfires emitted more CO<sub>2</sub> than previous years, underscoring their growing climate impact.

### Striped Hyena (*Hyaena hyaena*)

The **striped hyena** is a nocturnal scavenger native to parts of North and East Africa, the Middle East, and South Asia. It has distinctive black stripes on a sandy-gray coat and is smaller than the spotted hyena. Unlike other hyenas, it is largely solitary and less aggressive. It primarily feeds on carrion but can hunt small animals. The species plays an important ecological role by cleaning up carcasses and preventing disease spread. Its population is declining due to habitat loss and persecution. The striped hyena is listed as Near Threatened by the IUCN and is rarely seen in dense forests.

#### WHY IN NEWS?

A rare sighting of a striped hyena near Ganeshgudi bridge in Kali Tiger Reserve marks the first documented presence in the Western Ghats region, sparking interest in its migration and habitat expansion.

### Subpolar Gyre

The **Subpolar Gyre** is a large system of circulating ocean currents in the North Atlantic, located between the tropics and the Arctic. It influences sea surface temperatures and salinity, which affect the strength of the AMOC. The Subpolar Gyre's temperature patterns serve as early warning indicators for AMOC changes. Studies analyzing data from 1870 to 2020 have shown that the gyre's sea surface temperature began signaling AMOC



weakening around 1970. Changes in this gyre impact marine ecosystems, weather, and climate patterns in adjacent regions, including Europe and North America.

#### WHY IN NEWS?

Recent research uses the Subpolar Gyre's sea surface temperature as a key metric to detect early warning signals for the potential collapse of the AMOC.

### **Sukhna Choe Reserve Forest**

The **Sukhna Choe Reserve Forest** is a protected forest area adjacent to Sukhna Wildlife Sanctuary in the city. It acts as a vital ecological corridor supporting diverse flora and fauna. The reserve is characterized by riverine vegetation along the seasonal stream, or "choe," which flows through it. It provides habitat for nocturnal and migratory species and helps maintain local biodiversity. The forest also plays a role in groundwater recharge and soil conservation. Its proximity to urban areas makes it for urban wildlife conservation and environmental education.

#### WHY IN NEWS?

The Sukhna Choe Reserve Forest is included in this year's expanded nine-day wildlife census, increasing urban forest coverage beyond the sanctuary.

### **Sundarbans Climate Resilience**

The Sundarbans is a UNESCO World Heritage site and the largest mangrove forest located in India and Bangladesh. It is highly vulnerable to climate change impacts such as rising sea levels, cyclones, and saline water intrusion. Climate resilience efforts focus on **protecting biodiversity, sustaining livelihoods, and enhancing disaster preparedness**. Technologies like smart soil scanners and autonomous agri-robots are being piloted to improve agricultural productivity and reduce losses. The region is also critical for carbon sequestration and acts as a natural barrier against storms. Community-based adaptation and scientific research are key to its resilience.

#### WHY IN NEWS?

Impact RISE includes missions focusing on climate resilience in the Sundarbans to address environmental challenges and support sustainable development.

### **Tamil Nadu Critical Zone Observatory (CZO)**

The Tamil Nadu Critical Zone Observatory (CZO) at the Tamil Nadu Rice Research Institute (TRRI) is one of three such observatories in India and the only one in Tamil Nadu, operational since 2022. It integrates multiple sensors monitoring weather, soil moisture, air-surface fluxes, and now scintillometer data to study the interface between the atmosphere, biosphere, and geosphere. The CZO supports long-term datasets on meteorological, hydrological, and canopy parameters, focusing on the Cauvery delta's climate-sensitive agricultural ecosystem. It facilitates research on carbon and water cycles, microclimate effects on pests and diseases, and climate-smart cropping systems, while also serving as a training platform.

#### WHY IN NEWS?

The CZO at TRRI expanded its monitoring capabilities with the installation of a scintillometer, enhancing comprehensive environmental data collection for the Cauvery



delta.

### Thar Desert Conservation

The **Thar Desert** spans parts of Rajasthan, and extends into Pakistan, covering approximately 200,000 square kilometers. It is characterized by arid conditions, sand dunes, sparse vegetation, and unique biodiversity including species like the Asiatic Caracal. The region faces growing environmental threats from large-scale solar power projects, mining, and habitat fragmentation. Conservation efforts focus on balancing renewable energy development with protecting fragile ecosystems and traditional livelihoods of pastoral communities. Local knowledge and community stewardship play important role in monitoring wildlife and maintaining ecological balance in this desert environment. The desert is also culturally for indigenous groups.

#### WHY IN NEWS?

The rediscovery of the Asiatic Caracal in the Thar Desert spotlights the urgent need to protect this fragile habitat from imminent threats posed by expanding solar energy projects.

### Tobacco Endgame Movement

The **Tobacco Endgame movement** is a global public health initiative aiming to phase out tobacco sales through strict regulations, including generational bans. It targets reducing tobacco-related deaths, which exceed 7 million annually worldwide. The movement focuses on eliminating tobacco use in low- and middle-income countries where 80% of users live. Strategies include sales restrictions, age verification, and banning new users. New Zealand introduced a similar generational ban in 2022 but repealed it in 2024 before enforcement. The Maldives' 2025 law is a key milestone in this movement.

#### WHY IN NEWS?

Maldives' generational tobacco ban is part of the broader Tobacco Endgame movement, which seeks to eliminate tobacco use globally through strict regulatory policies.

### Trace Metal Contamination in Dugongs

A 2025 study analyzed tissues from 46 stranded dugongs in India, detecting toxic elements – arsenic, cadmium, chromium, mercury, and lead. These metals accumulate mainly in vital organs like the liver, kidneys, and muscles. The contamination originates from industrial discharge, agricultural runoff, and untreated wastewater entering marine sediments where seagrass grows. This is the first global assessment of trace metals in dugongs, indicating environmental pollution affecting this vulnerable species. Metal accumulation can impair dugong health, reproduction, and survival, compounding threats from habitat loss and bycatch.

#### WHY IN NEWS?

The study on toxic trace metals in dugongs was recently published, revealing new environmental threats to the species in Indian waters.

### Transact Line Method

The **Transact Line Method** is a wildlife survey technique involving systematic sampling



along fixed lines or transects. Observers record sightings of animals, tracks, or signs within a certain distance from the line. It helps estimate population density and distribution without capturing animals. The method is cost-effective, suitable for various habitats, and can be adapted for nocturnal surveys using night-vision equipment. It complements camera trapping and indirect methods like scat counts. The technique provides quantitative data essential for wildlife management, habitat assessment, and conservation planning.

#### WHY IN NEWS?

The current wildlife census employs the transect line method alongside camera traps and indirect estimation to monitor multiple taxonomic groups.

### **Tropical Forests Forever Facility (TFFF)**

The **Tropical Forests Forever Facility (TFFF)** is an innovative climate finance mechanism launched at the Belém Summit. Unlike traditional donation-based models, it operates as an investment fund rewarding forest conservation and investors alike. Brazil committed \$1 billion to the TFFF, aiming to incentivize the preservation of tropical forests while attracting global investment. The fund supports sustainable forest management and climate mitigation by providing financial returns to those who maintain forest ecosystems. This approach aligns economic incentives with environmental goals, representing a shift in funding tropical forest conservation from philanthropy to market-driven finance.

#### WHY IN NEWS?

The TFFF was launched at the Belém Summit to promote forest preservation through investment rather than donations, with Brazil pledging \$1 billion.

### **Tungreshwar Wildlife Sanctuary**

The **Tungreshwar Wildlife Sanctuary** is located in Vasai, Maharashtra, covering around 85 square kilometers of forested land. It consists primarily of tropical deciduous and semi-evergreen forests. The sanctuary is an important refuge for many rare and elusive species, including the Indian mouse deer. It serves as a green corridor connecting the Sanjay Gandhi National Park with other forested areas. The sanctuary faces threats from urbanization and habitat fragmentation. It supports diverse flora and fauna, including several endemic and sensitive species, and is managed by the Maharashtra Forest Department with support from conservation organizations.

#### WHY IN NEWS?

Tungreshwar Wildlife Sanctuary was the location where the Indian mouse deer was recently sighted by researchers from the Vivek PARC Foundation, reinforcing its role as a critical habitat for rare wildlife.

### **Tungsten Block, Andhra Pradesh**

The tungsten block in Andhra Pradesh is a mineral-rich area designated for exploration and mining of tungsten and associated minerals. Tungsten is a **critical metal** used in advanced manufacturing, including aerospace, electronics, and defense industries, due to its high melting point and density. Andhra Pradesh's tungsten reserves contribute to



India's strategic mineral resources, reducing dependence on imports. Mining in this block follows a competitive auction process. The block's development supports India's self-reliance goals in critical minerals, aligning with national policies to secure supply chains for high-value and strategic materials.

#### WHY IN NEWS?

The Andhra Pradesh government granted Hindustan Zinc Ltd the licence to explore and mine the tungsten block, enhancing India's critical mineral production capacity.

### Umngot River

The **Umngot River** is located in the West Jaintia Hills district of Meghalaya. It is renowned for its **exceptionally clear water**, often described as one of the clearest rivers in Asia. The river supports local ecosystems and serves as a major tourist attraction, especially in winter when its waters are crystal clear. Dawki and Shnongpdeng are key tourist spots along the river. The river's clarity is affected seasonally, typically becoming murky during monsoon but clearing by mid-October. The river is also culturally important for local indigenous communities who rely on it for fishing and transportation.

#### WHY IN NEWS?

The Umngot River has turned murky during the peak tourist season of 2025, attributed to soil dumping and construction debris from the Shillong-Dawki highway upgrade, alarming local communities and environmentalists.

### UNESCO Man and Biosphere Programme

The **UNESCO Man and Biosphere (MAB) Programme** was launched in 1971 to establish a scientific basis for improving the relationship between people and their environments. It promotes interdisciplinary research combining natural and social sciences to encourage sustainable development. The programme designates World Network of Biosphere Reserves (WNBR), which includes terrestrial, coastal, and marine ecosystems. The MAB Council, its governing body, comprises 34 member states. The programme focuses on biodiversity conservation, climate change impacts, and sustainable livelihoods. It encourages international cooperation, knowledge exchange, and capacity-building among biosphere reserves globally. It integrates ecological protection with socio-economic development.

#### WHY IN NEWS?

The MAB Programme is brought into light in relation to India's expanding biosphere reserves network and its inclusion of the Cold Desert Biosphere Reserve in UNESCO's World Network in 2025.

### Uranium (U-238) in Breastmilk

Uranium-238 is a naturally occurring radioactive isotope found in rocks and soil. It can contaminate groundwater through natural leaching and human activities like mining, coal burning, and phosphate fertilizer use. Uranium exposure occurs via ingestion of contaminated water or food. In breastmilk, uranium is typically present at low concentrations because most absorbed uranium is excreted through urine. Infants are



vulnerable due to immature kidney function, potentially leading to impaired neurological and kidney development. The WHO sets a drinking water limit of 30 µg/L, while some countries have stricter limits, such as Germany's 10 µg/L. Uranium contamination is reported in 151 Indian districts.

#### WHY IN NEWS?

A study found uranium-238 in breastmilk samples from lactating mothers in Bihar, raising concerns about non-carcinogenic health risks for infants, particularly in Khagaria and Katihar districts.

#### UV Fluorescence Method

The UV fluorescence method detects sulphur dioxide (SO<sub>2</sub>) by exposing air samples to ultraviolet light, causing SO<sub>2</sub> molecules to emit a weak fluorescent glow. The intensity of this fluorescence is proportional to the SO<sub>2</sub> concentration. This technique is highly sensitive and selective, enabling continuous real-time monitoring. It is part of the suite of optical methods approved under India's National Ambient Air Quality Standards (NAAQS) 2009. UV fluorescence analyzers require regular calibration and maintenance to avoid drift and ensure accuracy, especially in urban environments with variable pollutant levels.

#### WHY IN NEWS?

Delhi's air quality monitoring stations use UV fluorescence to measure SO<sub>2</sub> levels, a method questioned by the Supreme Court regarding its effectiveness under city-specific conditions.

#### V.O. Chidambaranar Port Authority

The **V.O. Chidambaranar Port Authority**, located in Tamil Nadu, is a deep-water port formerly known as Tuticorin Port. It is one of the 13 major ports in India and serves as a vital gateway for trade in the southeastern region. The port handles a variety of cargo including coal, salt, and containerized goods. It has been an early adopter of sustainable practices such as initiating the purchase of green tugs to reduce emissions. The port is equipped with modern infrastructure and has implemented shore power supply systems for naval and coast guard vessels to reduce operational pollution.

#### WHY IN NEWS?

V.O. Chidambaranar Port Authority is among the major ports initiating green tug procurement to comply with environmental regulations and reduce greenhouse gas emissions.

#### Vanashakti Judgment

The **Vanashakti judgment** of May 2025 barred the granting of ex post facto environmental clearances (EC), which are retrospective approvals given to projects violating environmental norms. It emphasized the **precautionary principle**, prioritizing prevention of harm over compensatory measures. The judgment invalidated the practice of regularizing environmental violations through financial penalties, reinforcing the need for prior environmental approval. It drew on earlier rulings that struck down environment ministry office memorandums (OMs) from 2012 and 2013, which had attempted to dilute



environmental safeguards. The judgment was seen as strengthening deterrence against non-compliance with environmental regulations.

#### WHY IN NEWS?

The Supreme Court recalled the Vanashakti judgment in November 2025, allowing ex post facto clearances again, weakening environmental regulation and enabling regularization of violations through financial penalties.

### **Vedanta's Talwandi Sabo Plant**

The Talwandi Sabo thermal power plant, operated by Vedanta, is located in Punjab and comprises multiple units. It is one of the plants within 300 km of Delhi that has not installed FGD systems on all units. Vedanta's units at Talwandi Sabo fall under Category C, granting exemption from FGD installation if chimney height norms are met. The plant contributes to sulphur dioxide emissions in the region. Vedanta is a major Indian multinational involved in mining, metals, and power generation. Talwandi Sabo's emissions impact Delhi's air quality due to atmospheric transport of pollutants.

#### WHY IN NEWS?

Vedanta's Talwandi Sabo plant is among the thermal power units near Delhi operating without full FGD systems, contributing to sulphur dioxide pollution affecting air quality.

### **Vedanthangal Bird Sanctuary**

**Vedanthangal Bird Sanctuary** is one of the oldest bird sanctuaries in India, located about 90 km from Chennai, Tamil Nadu. It covers an area of approximately 30 hectares and is known for attracting over 40,000 migratory birds annually. The sanctuary was declared a protected area in 1936 by the British government. It primarily consists of a large water tank surrounded by marshes and trees, which serve as nesting grounds. The sanctuary is famous for species like painted storks, herons, cormorants, and pelicans. Conservation efforts include desilting the tank and planting barringtonia trees to support bird nesting.

#### WHY IN NEWS?

Vedanthangal Bird Sanctuary has recently seen the arrival of thousands of migratory birds marking the start of the nesting season, attracting birdwatchers and boosting local eco-tourism.

### **Veron's Tube Coral**

Veron's tube coral (*Echinopora ashmorensis*) is a species of stony coral found primarily in the Indo-Pacific region. It is named after marine biologist **Dr. John Veron**, known as the Godfather of Coral. This coral forms tube-like colonies and is known for its relative resilience to thermal stress compared to other coral species. It can survive in a range of depths and water conditions, making it more adaptable during heat stress events. Its persistence during the 2024-2025 marine heatwave contrasts with the decline of many other coral species, contributing to the reef's partial recovery potential.

#### WHY IN NEWS?

Veron's tube coral was one of the few coral species that survived the intense bleaching event caused by the 2024-2025 underwater heatwave affecting Australian reefs.



## Veru (Aruguna)

Veru or aruguna is the local Odia name for cycad plant seeds traditionally consumed by tribal communities in Odisha. These seeds are processed into food items like pitha. Detoxification methods, such as soaking and cooking, are traditionally used to reduce toxins, though the efficiency varies. Cultural significance includes use in rituals and as a famine food. Consumption persists despite known risks due to limited alternatives and cultural attachment. The seeds contain **BMAA** and other toxins, raising health concerns. Research on veru's nutritional and toxicological profile is limited but crucial for public health interventions.

### WHY IN NEWS?

Tribal consumption of veru in Odisha is being studied by AIIMS Bhubaneswar to assess links between traditional diets and neurological health risks.

## Vision 2040 Report

The **Vision 2040 Natural Gas Infrastructure in India** report was submitted to the Petroleum and Natural Gas Regulatory Board (PNGRB) to guide the development of natural gas infrastructure nationwide. It projects India's natural gas demand to rise from 260–300 MMSCMD in 2030 to 365–500 MMSCMD by 2040. Domestic gas production is expected to peak near 120 MMSCMD but may decline by 2030, increasing reliance on imported regasified LNG (R-LNG). The report emphasizes transparent, consumer-friendly infrastructure allocation and the need for coordinated government and regulator efforts to expand regasification, pipeline connectivity, and supportive policies.

### WHY IN NEWS?

The report was recently submitted to PNGRB to help India meet its 2030 target of raising natural gas in the energy mix to 15%, addressing infrastructure and policy challenges.

## Vivek PARC Foundation

The **Vivek PARC Foundation** is a wildlife research organization focused on biodiversity conservation and ecological research in India. It conducts field surveys, species monitoring, and habitat conservation projects. The foundation collaborates with forest departments and local communities to promote conservation awareness. It specializes in documenting elusive and lesser-known species such as the Indian mouse deer. PARC stands for **Protected Area Research and Conservation**. The foundation uses modern ecological techniques, including camera traps and GPS tracking, to study wildlife behavior and habitat use, contributing data to national and international conservation bodies.

### WHY IN NEWS?

The Vivek PARC Foundation recorded a rare sighting of the Indian mouse deer during a field visit at Tungareshwar Wildlife Sanctuary, emphasizing ongoing conservation efforts in the region.

## WALMI

**WALMI** stands for Water and Land Management Institute, a specialized training and research institute focused on water resources management, irrigation, and land



development in India. It provides technical training, capacity building, and consultancy services to government agencies and stakeholders. WALMI develops innovative water management techniques, promotes efficient irrigation practices, and supports policy formulation. It collaborates with various central and state government departments and international organizations to improve sustainable water use and agricultural productivity. WALMI plays an important role in disseminating modern water management knowledge and technologies to enhance rural water security and agricultural sustainability.

#### WHY IN NEWS?

WALMI participated in the Vision for Sujalam Bharat Summit 2025 workshops, contributing expertise on irrigation efficiency and integrated water management.

### **Waste Kiosks Bengaluru**

Waste kiosks are designated public collection points for segregated waste in Bengaluru. Each kiosk contains four bins with a 100-liter capacity for different waste types, enabling residents to deposit segregated garbage free of cost during specific hours. The kiosks aim to reduce garbage black spots and control foul odors by encouraging proper waste disposal. The first kiosk was set up in BTM Layout and received positive feedback. The Greater Bengaluru Authority plans to install 65 such kiosks citywide as part of its broader waste management strategy. These kiosks support the goal of a cleaner city under the 'Swacch Bengaluru' initiative.

#### WHY IN NEWS?

BSWML announced plans to install 65 waste kiosks across Bengaluru to complement the 'Garbage Dumping Festival' and improve waste segregation and collection efficiency.

### **Water Metro System**

The **Water Metro System** is an urban water transport initiative aimed at integrating riverine mobility with existing road, rail, and bus networks. Planned for Tezpur, Guwahati, and Dibrugarh in Assam, it uses modern ferry services on the Brahmaputra River. The project is inspired by Kochi's successful Water Metro and is designed to reduce urban traffic congestion while promoting eco-friendly transport. It involves construction of terminals, procurement of vessels, and integration with other public transport modes. The estimated cost is ₹1,000 crore. The system aims to enhance passenger convenience and boost river-based tourism in the Northeast.

#### WHY IN NEWS?

IWAI signed an MoU with the Government of Assam to develop the Water Metro System in key cities along the Brahmaputra, with a feasibility study by Kochi Metro Rail Ltd.

### **WHO Global Traditional Medicine Centre (GTMC)**

The **WHO Global Traditional Medicine Centre (GTMC)** was established in Jamnagar, Gujarat, as a global knowledge hub for traditional medicine research, innovation, and collaboration. It focuses on evidence-based practices, sustainability, equity, and respect for local heritage. GTMC supports integration of traditional medicine into national health systems and promotes biodiversity protection and fair benefit-sharing. It is a strategic



initiative by WHO and the Government of India to advance global health through traditional knowledge, balancing science, innovation, and ethics. GTMC encourages data-driven policymaking and global partnerships for sustainable health development.

#### WHY IN NEWS?

The GTMC is central to WHO's strategic vision for traditional medicine, with India hosting the Second WHO Global Summit on Traditional Medicine in December 2025 to advance global collaboration and evidence-based integration.

### **WHO Global Traditional Medicine Strategy 2025-2034**

The WHO Global Traditional Medicine Strategy 2025-2034 is a framework developed by the World Health Organization to integrate traditional, complementary, and integrative medicine into national health systems worldwide. It aims to promote safe, effective, and equitable access to traditional medicine through evidence-based policies, research, and innovation. The strategy supports universal health coverage and the Sustainable Development Goals by encouraging dialogue between traditional practitioners and modern healthcare providers. It emphasizes quality assurance, regulation, and digital health tools to enhance traditional medicine's role in public health globally.

#### WHY IN NEWS?

The 2nd WHO Traditional Medicine Global Summit will focus on advancing the goals of the WHO Global Traditional Medicine Strategy 2025-2034.

### **Wildlife (Protection) Act Schedule II**

The Wildlife (Protection) Act, 1972, is an Indian law aimed at protecting wildlife species and regulating their management. Schedule II of the Act lists species that receive legal protection against hunting, capture, and cruelty. Species in Schedule II are subject to regulated scientific management and conservation efforts by forest departments. The Rhesus Macaque was removed from this schedule in 2022, which led to reduced oversight and increased exploitation risks. Reinstating species under Schedule II restores statutory protections, enabling authorities to intervene in cases of conflict, trafficking, and cruelty, and facilitates scientific population management.

#### WHY IN NEWS?

The National Board for Wildlife recommended reinstating the Rhesus Macaque under Schedule II to restore legal protections lost after its removal in 2022, aiming to manage conflicts and prevent exploitation.

### **World Meteorological Organisation (WMO)**

The **World Meteorological Organisation (WMO)** is a specialized United Nations agency responsible for international cooperation in meteorology, climatology, and hydrology. Established in 1950, it provides authoritative climate data and projections. The WMO's recent projection indicated a 70% chance that average global warming will exceed 1.5°C above pre-industrial levels over the next five years, a short-term spike that signals accelerating climate risks. The WMO's climate reports influence international climate policy and negotiations by providing scientific evidence of trends, including temperature



anomalies, extreme weather events, and greenhouse gas concentrations.

#### WHY IN NEWS?

The WMO's projection of imminent global temperature rise was released just before COP30, emphasizing the urgency for stronger climate action and ambition in national commitments.

### Yield Gap

The **yield gap** is the difference between potential crop production under optimal conditions and actual yields achieved by farmers. It is influenced by factors like soil quality, water availability, pests, and farming practices. In regions with land degradation, yield gaps widen due to reduced soil fertility and structure. Yield gaps can be reduced by improved management, technology, and restoration efforts. In India, some of the world's highest yield gaps are linked to human-induced land degradation, particularly in wheat-growing areas. Closing these gaps could substantially increase food production without expanding farmland.

#### WHY IN NEWS?

The 2025 FAO report marks that India has some of the highest yield gaps due to land degradation, emphasizing the urgent need to address this issue for food security.

### Zero Fatality Corridor

The **Zero Fatality Corridor (ZFC)** is a road safety initiative implemented on the Mumbai-Pune Expressway in India. It combines **evidence-based engineering** and **strict enforcement** measures to reduce road crash deaths. The programme introduced **improved road design** features such as better signage, crash barriers, and illumination, alongside enhanced traffic monitoring and penalties for violations. Since its inception, the ZFC has successfully **cut crash deaths by more than 50%**. It serves as a model for integrating infrastructure and enforcement to improve road safety on high-speed corridors.

#### WHY IN NEWS?

The Supreme Court cited the success of the Zero Fatality Corridor programme on the Mumbai-Pune Expressway as evidence that design-led interventions can reduce road crash fatalities.

### Zero Liquid Discharge

Zero Liquid Discharge (ZLD) is an industrial wastewater management system ensuring no liquid waste is discharged into the environment. It involves treatment, recycling, and reuse of all wastewater within the facility. ZLD systems use techniques like evaporation, crystallization, and membrane filtration to recover water and solids. Industries adopting ZLD reduce pollution and conserve water by achieving 100% water reuse. This approach supports circular water economy principles, reducing freshwater intake and minimizing environmental impact. ZLD is increasingly mandated in water-stressed regions and by environmental regulations to promote sustainable industrial water management.

#### WHY IN NEWS?

The President mentioned industries achieving ZLD targets as part of efforts to conserve



water and promote circular water economy during the 2025 National Water Awards.

### **Zero-Tipping-Fee Model**

The zero-tipping-fee model eliminates charges usually paid by waste generators to dispose of garbage at processing plants. Instead, the facility operates financially through revenue from by-products like compressed biogas, refuse-derived fuel, and compost, plus royalty payments to the municipal corporation. This model reduces operational costs for the city and incentivizes efficient waste processing without upfront fees. It is rare in India's waste management sector, where typical costs reach ₹800 per metric tonne. The Bhandewadi plant's model is fully privately financed and includes a zero-discharge policy, minimizing environmental impact.

#### **WHY IN NEWS?**

Nagpur's Bhandewadi plant is pioneering this financially sustainable approach, generating income for the city while managing its entire municipal waste stream.

### **History (India / World) & Culture**

#### **5-in-1 Silk Stole**

The **5-in-1 Silk Stole** is a unique textile product that integrates five distinct types of Indian silk – Mulberry, Oak Tasar, Tropical Tasar, Muga, and Eri. Each silk variety originates from different silkworm species and regions, representing diverse ecological and cultural sericulture traditions of India. The stole showcases intricate craftsmanship and marks the country's rich silk heritage. It was developed to boost premium handmade silk products in global markets. The combination enhances texture, durability, and aesthetic appeal, making it a symbol of India's innovation in textile design and sericulture diversity.

#### **WHY IN NEWS?**

Unveiled during the Indian delegation's visit to Georgia, the stole symbolizes India's diverse silk heritage and potential in international textile markets.

#### **Archaeological Survey of India (ASI)**

The Archaeological Survey of India, established in 1861, is the premier government agency responsible for archaeological research and the preservation of cultural monuments in India. It manages over 3,600 ancient monuments and archaeological sites. ASI conducts excavations, conservation, and restoration works and maintains museums related to Indian heritage. The organization operates under the Ministry of Culture and has regional offices across India. It plays a critical role in heritage education and public outreach programs to promote awareness about India's cultural legacy.

#### **WHY IN NEWS?**

ASI led a heritage walk, clean-up drive, and conservation awareness program at the Brihadeeswarar Temple during World Heritage Week in November 2025.

#### **Bankim Chandra Chatterjee's "Sujalam"**

Bankim Chandra Chatterjee, a 19th-century Bengali writer, authored the national song "Vande Mataram." The first word he wrote in this song is "**Sujalam**", meaning "rich with water" or "abundant with water resources." This word symbolizes the importance of water



in Indian culture and heritage. The song reflects reverence for nature and water, emphasizing the connection between prosperity and water abundance. "Vande Mataram" played a role in India's independence movement and has deep cultural significance, linking water conservation with national pride and identity.

#### WHY IN NEWS?

The President referenced the word "Sujalam" from Bankim Chandra Chatterjee's national song to underline the cultural importance of water during the 2025 National Water Awards.

### **Brihadeeswarar Temple**

The Brihadeeswarar Temple, also called the Big Temple, is located in Thanjavur, Tamil Nadu, and was completed in 1010 AD during the Chola dynasty under Raja Raja Chola I. It is an example of Dravidian architecture and is noted for its massive vimana (temple tower) that stands about 66 meters tall. The temple's main deity is Lord Shiva, and it features intricate frescoes and sculptures. The temple was one of the first in India to be built entirely of granite. It is a UNESCO World Heritage Site and part of the "Great Living Chola Temples" group.

#### WHY IN NEWS?

The Archaeological Survey of India organised a heritage walk and clean-up drive at the Brihadeeswarar Temple during World Heritage Week, promoting conservation awareness and monument preservation.

### **Bulbul Bird Fights**

Bulbul bird fights involve pitting two bulbul birds against each other in a contest of aggression. This practice is part of some traditional festivities in Assam, especially during Magh Bihu. The bulbul is a common songbird in South Asia, known for its melodious calls. These fights are organized by local communities but have been criticized for animal cruelty. The Gauhati High Court quashed the standard operating procedure allowing these fights in 2023, citing animal welfare concerns. Despite legal scrutiny, bulbul fights are considered an element of cultural heritage in certain Assamese communities.

#### WHY IN NEWS?

Bulbul bird fights were mentioned as part of the Assam government's SOP quashed by the Gauhati High Court in 2023, related to the Prevention of Cruelty to Animals Act enforcement.

### **Girivalam Path**

Girivalam Path is a 14-kilometer circumambulatory route around Arunachala Hill in Tiruvannamalai, Tamil Nadu, followed by devotees during the full moon, especially on Karthigai Deepam. The practice of Girivalam involves walking barefoot around the sacred hill, believed to bring spiritual merit and blessings. The path passes through villages, temples, and natural landscapes, attracting thousands of pilgrims annually. The route is traditionally marked by stone and mud paths but has seen infrastructural improvements in recent years. Encroachments and unauthorized constructions along the path have been



a concern, leading to periodic clearance drives to maintain its sanctity and accessibility.

WHY IN NEWS?

Illegal structures along the Girivalam Path are being demolished to accommodate the increased footfall of devotees during the upcoming Karthigai Deepam festival.

### **Kalingan Architecture**

**Kalingan architecture** is a distinctive style of temple architecture originating in the ancient Kalinga region, present-day Odisha. It is characterized by its elaborate stone carvings, towering spires (shikharas), and detailed iconography, especially of Hindu deities. The Konark Sun Temple exemplifies this style with its chariot-shaped design, massive wheels, and horses carved in stone. This architectural form evolved between the 7th and 13th centuries, combining religious symbolism with artistic grandeur. Kalingan temples often feature three main parts – the Vimana (sanctum), Jagamohana (assembly hall), and Natamandira (dance hall).

WHY IN NEWS?

Kalingan architecture is referenced as the style exemplified by the Konark Sun Temple, which is under new visitor restrictions for preservation.

### **King Siddhinarsingh Malla**

King Siddhinarsingh Malla ruled Patan in the **17th century** during the Malla dynasty, known for promoting art and culture. He initiated the Kartik Naach festival to celebrate Kartik Purnima and preserve local traditions through performance arts. The Malla kings were patrons of architecture, religion, and the arts, contributing to the cultural landscape of the Kathmandu Valley. Siddhinarsingh Malla's reign saw the construction of several temples and palaces in Patan, many of which remain key heritage sites. His legacy continues through the annual Kartik Naach, which sustains local artistic lineages.

WHY IN NEWS?

King Siddhinarsingh Malla is credited with founding the Kartik Naach festival, which recently concluded its annual 10-day performance at Patan Durbar Square.

### **Macaulay Putra**

The term "**Macaulay Putra**" literally means "son of Macaulay" and is used pejoratively in India to describe English-educated Indians perceived as culturally subservient or alienated from indigenous traditions. It implies internalized inferiority and betrayal of an "imagined civilizational essence." The phrase emerged in postcolonial discourse critiquing the colonial legacy of English education and its impact on identity and nationalism. It reflects tensions between embracing modernity through English and preserving native cultural authenticity. The term gained traction in political and academic debates on education, culture, and postcolonial identity politics in India.

WHY IN NEWS?

The article references "Macaulay Putra" to illustrate contemporary cultural conflicts over colonial education's impact and critiques of those who uphold Macaulay's educational vision.



## Macaulay's Minute on Indian Education

The **Minute on Indian Education** was written by Thomas Babington Macaulay in 1835, advocating English as the medium of instruction in India. It prioritized Western scientific knowledge over traditional Sanskrit and Arabic education. Macaulay argued that English education was economically viable, attracting fee-paying students, unlike Sanskrit and Arabic colleges dependent on stipends. He envisioned creating a class "Indian in blood and colour, but English in tastes, in opinions, in morals, and in intellect" to serve as intermediaries between rulers and the masses. The Minute also acknowledged India's past intellectual prominence and the transformative power of European languages.

### WHY IN NEWS?

The text discusses renewed debates around Macaulay's legacy and his Minute's role in shaping Indian education and social structures, denoting misinterpretations and selective quotations that fuel cultural critiques.

## Magh Bihu Festival

Magh Bihu, also known as Bhogali Bihu, is a major Assamese harvest festival celebrated in January. It marks the end of the harvesting season and involves feasting, community bonfires, and traditional sports. Cultural events like Moh Juj and bulbul bird fights are associated with Magh Bihu. The festival reflects agrarian traditions and the socio-cultural identity of Assam. It is celebrated with rituals that honor fertility, prosperity, and gratitude towards nature. Magh Bihu is a public holiday in Assam and includes various fairs and competitions that promote local customs and cuisine.

### WHY IN NEWS?

Magh Bihu is relevant as the timing of the traditional buffalo and bulbul bird fights, which are at the center of recent legal and cultural debates in Assam.

## Meerut Bugle Craft

Meerut's bugle craft dates back to the late 19th century, closely linked to India's military evolution. The city remains the primary supplier of bugles to Indian armed forces, paramilitary, and police units. These bugles are handcrafted, traditionally made of brass, and valued for superior sound quality and durability. Despite the craft's long history, many workshops closed due to competition from cheap, machine-made, and imported bugles. The craft combines metallurgy and musical instrument-making skills passed through generations. The GI tag now formally recognizes this heritage, aiming to protect and promote Meerut's unique bugle-making tradition.

### WHY IN NEWS?

The GI tag awarded to Meerut bugles marks the city's historic role in manufacturing high-quality military bugles and addresses the craft's decline due to market challenges.

## Mor Mukut (Peacock Feather Crown)

The **mor mukut** is a traditional headgear made from peacock feathers, worn by members of the Ramnami tribe as a symbol of devotion to Lord Ram. It is a cultural artifact representing **spiritual authority and reverence** within the community. The crown is



handcrafted, often featuring vibrant peacock feathers arranged to create a visually striking piece. Its use is deeply tied to tribal rituals and public ceremonies, symbolizing the wearer's connection to divine grace and religious identity. The mor mukut is rarely seen outside the tribe, preserving its exclusivity.

#### WHY IN NEWS?

The mor mukut gained attention when Ramnami tribe members sought to place it on Prime Minister Modi during a public event, an act symbolizing their devotion and cultural pride.

### **Morung**

A **Morung** is a traditional communal dormitory found in many Naga tribes, including the Maram. It serves as a center for social, cultural, and educational activities for unmarried youth. Morungs are built with wood and bamboo, often decorated with symbolic carvings and paintings. They function as institutions for imparting tribal customs, history, and martial training. Morungs are also venues for festivals, storytelling, and decision-making. The architecture of Morungs varies regionally but typically includes a central hall and sleeping quarters. The preservation of Morungs is crucial for maintaining tribal identity and transmitting cultural heritage.

#### WHY IN NEWS?

Funds from the government's welfare program were allocated for the preservation of the Maram community's traditional Morungs as part of cultural heritage conservation.

### **Paitkar Art**

Paitkar art is one of India's oldest scroll-painting traditions, primarily practiced by tribal communities in Jharkhand. It features detailed line work and narrative storytelling through visuals, often depicting mythological and folk tales. The scrolls are traditionally made on handmade paper or cloth, using natural colors derived from minerals and plants. The art form is passed down orally and through practice within families. Paitkar paintings serve both religious and cultural purposes, functioning as visual aids for village priests during storytelling. The revival of this craft has been supported by exhibitions like the India International Trade Fair, which help artisans reach wider audiences and preserve their heritage.

#### WHY IN NEWS?

Paitkar artists participated in the India International Trade Fair, using the platform to revive and promote their traditional scroll-painting craft to national and international visitors.

### **Proto-Dravidian Ancestry**

The **Proto-Dravidian ancestry** is a proposed fourth ancestral genetic component in the Indian subcontinent, diverging approximately 4,400 years ago between the Iranian plateau and the Indus Valley. It represents a unique lineage distinct from the known three sources – Iranian plateau farmers, Pontic-Caspian steppe pastoralists, and Andamanese hunter-gatherers. This ancestry forms a genetic bridge between ancient Middle Eastern



populations and early South Asian inhabitants. It supports the hypothesis of a Dravidian linguistic and cultural heartland predating Indo-European arrivals. Traces of this ancestry persist in most modern Indian populations, though less so in Ancient Ancestral South Indian (AASI) tribal groups.

#### WHY IN NEWS?

The Proto-Dravidian ancestry was identified in a genomic study of the Koraga tribe, refining the understanding of Indian subcontinent genetic history and linking it to the Indus Valley Civilisation.

### **QS World University Rankings – Asia**

The QS World University Rankings – Asia is an annual ranking launched in 2011 by Quacquarelli Symonds to evaluate Asian universities based on academic reputation, employer reputation, faculty-student ratio, citations per paper, papers per faculty, staff with PhD, international faculty, international students, and exchange students. The 2026 edition expanded to include 1,529 institutions with 552 new entrants, increasing competition. China added 261 new institutions, the highest globally. The rankings show the rise of East and Southeast Asian universities, especially from China, Singapore, South Korea, and Malaysia, while Indian institutions face challenges in citations and internationalization metrics.

#### WHY IN NEWS?

The 2026 QS Asia University Rankings showed a sharp decline in ranks for most Indian institutions, while universities in China, Malaysia, South Korea, and Singapore outperformed them, reflecting shifting academic competitiveness in Asia.

### **Sangai Festival**

The Sangai Festival is an annual cultural and tourism event held in Manipur, named after the state animal, the Sangai deer. It showcases Manipur's rich heritage through traditional dance, music, crafts, and cuisine. The festival aims to promote tourism and local culture but has faced interruptions due to political instability and ethnic conflicts. It was not held for two years prior to 2025 due to violence and displacement caused by clashes between tribal and non-tribal communities. The event is organized by the Manipur Tourism Department and usually attracts both domestic and international visitors.

#### WHY IN NEWS?

The 2025 Sangai Festival resumed after a two-year hiatus but was marred by protests from displaced persons and NGOs amid ongoing ethnic tensions in Manipur.

### **Simhastha Kumbh Mela**

Simhastha Kumbh Mela is a Hindu religious festival held every 12 years in Nashik, one of four locations for the Kumbh Mela. It attracts millions of pilgrims who gather to bathe in the Godavari River, believed to purify sins. The festival has ancient origins linked to Hindu mythology involving the churning of the ocean (Samudra Manthan). The event includes religious discourses, mass feedings, and cultural performances. The term "Simhastha" refers to the sun's position in the zodiac sign Leo (Simha) during the festival. The festival



impacts local infrastructure and economy due to the massive influx of visitors.

WHY IN NEWS?

Preparations for the 2027 Simhastha Kumbh Mela include urban development and safety measures like demolishing structures near Ram Kund to manage pilgrim flow.

### **Sirpur Archaeological Site**

Sirpur, located in Chhattisgarh's Mahasamund district, is a 5th to 12th-century archaeological site with 34 Hindu, Jain, and Buddhist monuments. It was the capital of Dakshina Kosala under Panduvanshi and Somavamshi rulers. Excavations revealed 22 Shiva temples, 5 Vishnu temples, 10 Buddhist viharas, and 3 Jain viharas. The site includes palace ruins, market complexes, residential quarters, stupas, meditation cells, and an ancient water management system. The Lakshmana Temple, built around the 7th century, is a prime example of early medieval brick temple architecture dedicated to Vishnu. Sirpur also served as a major Buddhist center with large viharas and stupas.

WHY IN NEWS?

Sirpur is under consideration for UNESCO World Heritage status, with development plans including battery-operated golf carts, paved pathways, and digital exhibits to enhance tourism and heritage preservation.

### **Surang Tila Complex**

The Surang Tila complex at Sirpur is built on a high terrace accessed by 37 steps. It features multiple shrines arranged in the panchayatana style, consisting of one main shrine surrounded by four subsidiary shrines. This architectural style is in Hindu temple design. The terrace's elevation and layout suggest a ceremonial or strategic importance. The complex is notable for its dramatic setting and structural complexity, reflecting early medieval religious practices and urban planning. It is part of the broader cultural landscape of Sirpur, which integrates religious, civic, and riverine elements.

WHY IN NEWS?

Surang Tila is part of the thematic clusters being integrated into Sirpur's heritage pathways as part of the site's facelift for UNESCO nomination.

### **Talwandi Sabo**

Talwandi Sabo, located in Bathinda district, Punjab, is a prominent Sikh pilgrimage site known as "Guru Ki Kashi" for its association with Sikh religious education. It houses the Damdama Sahib Gurdwara, where Guru Gobind Singh compiled the final version of the Guru Granth Sahib in 1705. The town is an important spiritual center attracting devotees for religious study and festivals. Talwandi Sabo also hosts a university dedicated to Sikh studies and Punjabi culture. It is recognized for preserving Sikh heritage and promoting academic research on Sikhism and Punjabi traditions.

WHY IN NEWS?

Talwandi Sabo was declared a holy city by the Punjab assembly, and free e-rickshaw or mini bus services were announced to facilitate pilgrim visits alongside Anandpur Sahib and Amritsar.



## Thomas Macaulay

**Thomas Babington Macaulay** (1800–1859) was a British historian and politician known for his role in shaping British educational policy in India. In **1835**, he delivered a famous minute advocating the introduction of English education and the replacement of traditional Indian learning systems. Macaulay argued that British rule should create a class of Indians “English in taste, in opinions, in morals, and in intellect.” His policies led to the establishment of English as the medium of instruction and had long-lasting effects on Indian society and culture. Macaulay’s ideas are often cited as a key factor in the colonial cultural transformation of India.

### WHY IN NEWS?

PM Modi referenced Macaulay’s 1835 speech to show the colonial attempt to impose a foreign mindset on India, framing the Ayodhya flag hoisting as a rejection of this legacy.

## Tivaradeva Mahavihara

Tivaradeva Mahavihara is a Buddhist monastery at Sirpur housing Buddha statue. It dates back to the early medieval period and is part of the site’s extensive Buddhist monastic complex. The vihara includes meditation halls and stupas, denoting Sirpur’s role as a major Buddhist center. Excavations have revealed its architectural layout and artifacts, providing vital information about Buddhist monastic life and religious practices in the region during the 5th to 12th centuries. The monastery’s remains contribute to understanding the coexistence of Hinduism, Jainism, and Buddhism at Sirpur.

### WHY IN NEWS?

Tivaradeva Mahavihara is one of the key monuments included in the proposed heritage pathways and digital interpretation plans for Sirpur’s UNESCO World Heritage bid.

## Triveni Auditorium

The **Triveni Auditorium** is a cultural venue located on Tansen Marg, New Delhi, often used for literary and artistic events. It is part of the Triveni Kala Sangam complex, established in 1950 by Sundari K. Shridharani, which serves as a center for performing arts, visual arts, and music. The auditorium is known for hosting book launches, poetry readings, and classical music concerts. Its architecture combines traditional Indian and modern styles, accommodating around 300-400 guests. The venue plays role in promoting cultural activities and is frequently chosen for events by national institutions like the Sahitya Akademi.

### WHY IN NEWS?

The Bal Sahitya Puraskar 2025 award ceremony will be held at the Triveni Auditorium in New Delhi on 14 November 2025.

## Tukaram vs Maharashtra

The **Tukaram versus State of Maharashtra** case (1979) involved the acquittal of two policemen accused of custodial rape of a teenage tribal girl. The Supreme Court ruled the sexual intercourse was consensual due to lack of physical injury. The verdict ignored socio-economic factors, power imbalance, and coercion. It sparked nationwide protests and



became a catalyst for legal reforms in India regarding custodial rape and sexual violence. The case led to the Criminal Law Amendment Act of 1983, which included custodial rape as a separate offense and shifted the burden of proof onto the accused in such cases.

#### WHY IN NEWS?

The case is referenced as a turning point in Indian legal history for sexual offenses, denoting institutional failures and influencing successive amendments to strengthen rape laws.

### Tungbuk

The **Tungbuk** is a traditional Lepcha musical instrument from Sikkim, characterized by its **three strings**. It is used primarily in Lepcha folk music and holds cultural and spiritual importance within the community. The instrument is handcrafted by local artisans using indigenous materials. Its sound is integral to Lepcha ceremonies and storytelling traditions. The Tungbuk's design and playing technique have been passed down through generations, making it a symbol of Lepcha heritage. It was officially granted Geographical Indication (GI) registration by the Government of India in November 2025, recognizing its unique regional identity and craftsmanship.

#### WHY IN NEWS?

The Tungbuk received GI registration on November 5, 2025, providing formal recognition to this traditional Lepcha instrument and supporting cultural preservation and artisan livelihoods in Sikkim.

### Urumi Sword

The **Urumi** is a flexible, whip-like sword originating from the Indian martial art **Kalaripayattu**. It consists of a long, thin, flexible steel blade that can be multiple meters in length. The Urumi is wielded like a whip, capable of striking multiple opponents simultaneously. Traditionally, it requires high skill and agility to use safely. The weapon was historically employed in southern India, especially Kerala. Its flexible design allows it to be coiled and worn around the waist when not in use. The Urumi is both a weapon and a symbol of martial prowess in Kalaripayattu.

#### WHY IN NEWS?

The Indian Navy's INS Mahe features the Urumi on its crest, symbolizing agility and precision, reflecting the ship's stealth and combat capabilities in anti-submarine warfare.

### Vijayanagara Punch-Marked Coins

Punch-marked coins from the Vijayanagara era date back approximately 600 years and are typically made of gold, averaging about **five millimeters** in size. These coins often feature an emblematic pig symbol, associated with Vijayanagara rulers, and were primarily minted as offerings to temples. Unlike copper coins used in trade for their durability, gold coins were rarely circulated due to their high value and were often melted down. The coins are circular in shape, distinguishing them from earlier Sangam-age coins, which were square. These coins provide insight into the religious and economic practices of the Vijayanagara empire.



## WHY IN NEWS?

103 gold punch-marked coins from the Vijayanagara era were discovered in an earthen pot during restoration work at a Later Chola-era Shiva temple in Kovilur, near Jawadhu Hills, Tiruvannamalai district.

**Vijnana Concept in Vedas**

The Vedas describe the universe as governed by **Vijnana**, which translates to “structured intelligence” or “scientific knowledge.” This concept portrays knowledge as ordered and sacred, emphasizing harmony between humans and nature. Ancient Indian sciences such as astronomy, medicine, and surgery were based on observation, reasoning, and humility, not domination over nature. Vijnana integrates spiritual wisdom with empirical inquiry, reflecting a holistic worldview where science and dharma coexist. This ancient understanding influenced scholars like Aryabhata, Charaka, and Susruta, who made contributions to their fields while maintaining ethical and moral responsibility.

## WHY IN NEWS?

The Vijnana concept is cited to reinforce the argument that Indian civilization historically combined science with spirituality, forming the basis of the modern Scientific Nationalism movement.

**Vrindavani Vastra**

The **Vrindavani Vastra** is a 15th-16th century silk textile woven under the guidance of the neo-Vaishnav saint-reformer Srimanta Sankaradeva. It features intricate motifs depicting scenes from the life of Krishna and Vaishnavism. Originally from Assam, pieces were taken to Tibet in the 17th-18th centuries and later acquired by British explorers. The textile is considered a rare example of Assamese weaving and religious art, currently housed at the British Museum. It is made of fine silk, dyed with natural colors, and holds immense cultural and historical significance for Assam and Vaishnavite traditions.

## WHY IN NEWS?

Assam Chief Minister Himanta Biswa Sarma is negotiating with the British Museum to bring the Vrindavani Vastra back to Assam, with plans to exhibit it in India after constructing a suitable museum in Guwahati.

**Science & Technology****205 MHz Stratosphere-Troposphere Radar**

The **205 MHz Stratosphere-Troposphere (ST) Radar** at CUSAT is India’s first radar operating at this frequency specifically designed to profile atmospheric winds, turbulence, and echoes from near ground level up to 20 kilometres altitude. It maintains signal integrity during heavy rain, unlike conventional weather radars, enabling continuous data collection in intense monsoon conditions. The radar has generated one of India’s richest datasets on tropical atmospheric processes, including monsoon jets, convective bursts, and upper-air wind shears. Located at Kalamassery, Kerala, it serves as a national facility for tropical atmosphere and monsoon dynamics research, supporting advances in weather prediction and climate resilience.



## WHY IN NEWS?

This radar's capabilities are being enhanced by the newly patented machine learning system that improves rainfall measurement accuracy during Kerala's variable and intense monsoon weather.

**Adenomyosis**

Adenomyosis is a gynecological condition where endometrial tissue grows into the muscular wall of the uterus, causing heavy menstrual bleeding and severe cramps. It often coexists with endometriosis and fibroids. Diagnosis typically involves ultrasound or MRI scans. Treatment options include hormonal therapy, pain management, and in severe cases, hysterectomy. Adenomyosis primarily affects women aged 35-50 but can occur earlier. It can cause an enlarged, tender uterus and chronic pelvic pain. The condition is underdiagnosed due to symptom overlap with other menstrual disorders. Adenomyosis can impact fertility and quality of life if untreated.

## WHY IN NEWS?

Referenced as one of the medical conditions causing severe menstrual pain justifying the need for menstrual leave policies like Karnataka's.

**Agentic AI**

Agentic AI refers to artificial intelligence systems capable of autonomous decision-making and goal-directed actions without continuous human intervention. Unlike traditional AI, which operates under fixed instructions, agentic AI adapts dynamically to changing environments, learning from interactions to optimize outcomes. It is designed to act proactively, managing complex tasks such as resource allocation, predictive maintenance, or personalized recommendations. In agriculture, agentic AI can autonomously monitor crop health, adjust irrigation, and optimize inputs, improving efficiency and sustainability. Its development involves advances in reinforcement learning, multi-agent systems, and ethical AI frameworks to ensure responsible deployment.

## WHY IN NEWS?

Agentic AI is brought into light in NITI Aayog's new agricultural roadmap as a key frontier technology to enhance productivity and resilience in Indian farming.

**Amaravati Quantum Valley (AQV)**

Amaravati Quantum Valley is an integrated quantum ecosystem initiative located in Amaravati, Andhra Pradesh. It aims to unite hardware manufacturing, software development, talent nurturing, and research excellence in quantum technologies. The project involves state-level partnerships, infrastructure development, and training programs to encourage innovation in quantum communication and security. AQV supports the National Quantum Mission (NQM) objectives and promotes cost-effective quantum communication sub-components and testbeds. It also focuses on enhancing digital privacy and data protection through quantum-safe technologies. AQV is a strategic effort to position Andhra Pradesh as a leading quantum technology hub in India.

## WHY IN NEWS?

AQV is in the news due to a new MoU signed between C-DOT and the Andhra Pradesh



Government to establish a Centre of Excellence in Quantum Communication and Security Solutions within AQV.

### Angular Cheilitis

Angular cheilitis is an inflammatory condition characterized by painful cracks or fissures at the corners of the mouth. It often results from nutritional deficiencies, particularly vitamin B12, iron, or folate, which impair cell regeneration and immune response. Fungal or bacterial infections, especially *Candida albicans* and *Staphylococcus aureus*, frequently complicate the condition. It is more common in individuals with dry skin, drooling habits, or ill-fitting dentures. Treatment involves addressing underlying nutritional deficits and using topical antifungal or antibacterial agents. The condition can recur if the root cause, such as vitamin B12 deficiency, is not corrected.

#### WHY IN NEWS?

Angular cheilitis is brought into light as a visible skin symptom linked to vitamin B12 deficiency, emphasizing the importance of early recognition for effective treatment and prevention of further complications.

### Anusandhan National Research Foundation

The Anusandhan National Research Foundation (ANRF) is an Government of India initiative established to enhance research and innovation in universities and research institutions across the country. It aims to consolidate fragmented research efforts by providing a unified funding and governance framework. ANRF focuses on promoting interdisciplinary research, facilitating collaboration between academia and industry, and accelerating the commercialization of research outcomes. The foundation supports private sector participation in research and development and is designed to increase the country's global competitiveness in science and technology. ANRF is a key element in India's strategy to build a robust innovation ecosystem.

#### WHY IN NEWS?

Prime Minister Modi announced the creation of the Anusandhan National Research Foundation at the Emerging Science and Technology Innovation Conclave 2025 to boost research and innovation in India.

### Aqueous Aluminium-Ion Batteries

Aqueous aluminium-ion batteries use water-based electrolytes and aluminium ions for energy storage, offering advantages like **low cost, safety, and environmental friendliness** compared to lithium-ion batteries. They have faster charging times and longer cycle life but lower energy density. Research is ongoing to improve their performance for grid storage and rural micro-grids. These batteries can be scaled for decentralized energy systems, supporting renewable integration and reducing reliance on fossil fuels. IIT Kharagpur is working on scaling these batteries as part of sustainable energy solutions for rural communities.

#### WHY IN NEWS?

IIT Kharagpur's Impact RISE initiative aims to scale aqueous aluminium-ion batteries to



create rural micro-grids and support sustainable energy access.

### **Black Hole Morsels**

Black hole morsels are hypothetical micro-black holes formed during violent cosmic collisions, much smaller than typical black holes, with masses comparable to asteroids. They are predicted to be much hotter than larger black holes and emit strong Hawking radiation, potentially detectable as bursts of high-energy gamma rays and neutrinos. Their lifetimes vary from milliseconds to years, depending on mass, as they evaporate quickly due to intense radiation. Morsels could provide unique probes into quantum gravity by revealing quantum effects of spacetime. Detecting their radiation would offer vital information about the quantum structure of gravity and new physics beyond current theories.

#### WHY IN NEWS?

A recent study proposes black hole morsels as new probes for quantum gravity, suggesting their radiation might already be observable with current gamma-ray telescopes following black hole merger events.

### **Bose-Einstein Condensate**

A Bose-Einstein Condensate (BEC) is a state of matter formed when bosons are cooled to temperatures near absolute zero, causing them to occupy the same quantum state and behave as a single "super-atom." First realized experimentally in 1995, BECs exhibit quantum phenomena on a macroscopic scale, such as superfluidity and coherence. They enable precision measurements in quantum sensors and are crucial for advances in quantum computing. BEC research also explores cosmic phenomena, with hypotheses suggesting dark matter may behave like a vast condensate influencing galactic structures.

#### WHY IN NEWS?

BECs are central to new quantum sensors and computing devices, technologies India is actively developing under its National Quantum Mission.

### **Chandrayaan-5/LuPEX Mission**

The **Chandrayaan-5/LuPEX** mission is a collaborative lunar exploration project between **ISRO** and **JAXA**. It focuses on studying **lunar volatile materials**, especially **water ice** in the Permanently Shadowed Regions (PSRs) near the lunar South Pole. The mission features an **ISRO-made lunar lander** and a **Japan-made lunar rover**. It will be launched by JAXA's **H3-24L launch vehicle**. The mission is a precursor to India's planned lunar sample return and future human moon missions by 2040. ISRO is also developing scientific instruments for the mission.

#### WHY IN NEWS?

The Japanese delegation visited ISRO to review the Chandrayaan-5/LuPEX mission status and discuss future collaboration opportunities between ISRO and JAXA.

### **Drone City, Orvakal**

**Drone City** is India's first dedicated drone manufacturing and innovation hub, established on approximately **300 acres** near **Orvakal Industrial Node** in **Kurnool, Andhra Pradesh**.



It aims to boost indigenous production of high-quality drones to support various sectors, including agriculture, surveillance, and disaster management. The project focuses on research, development, testing, and training related to drone technology. The location was chosen for its strategic position and infrastructure. It is expected to create a drone ecosystem encouraging startups and established manufacturers. The initiative aligns with the government's vision of self-reliance in drone technology.

#### WHY IN NEWS?

Union Commerce Minister Piyush Goyal laid the foundation stone for Drone City during the 30th CII Partnership Summit, denoting its role in India's drone production and Operation Sindoor.

### **Giant Metrewave Radio Telescope (GMRT)**

The Giant Metrewave Radio Telescope, located near Pune, is one of the world's largest and most sensitive low-frequency radio telescopes. It consists of 30 fully steerable parabolic dishes, each 45 meters in diameter, operating at frequencies from 150 MHz to 1420 MHz. GMRT enables detailed studies of radio galaxies, pulsars, and cosmic phenomena like ORCs. Its unique design combines interferometry and aperture synthesis, providing high-resolution imaging of faint radio sources. GMRT plays an important role in Indian and global radio astronomy, supporting both professional astronomers and citizen science projects.

#### WHY IN NEWS?

GMRT data is being used by RAD@home collaborators to investigate the newly discovered double-ORC and other radio galaxy phenomena.

### **GLP-1 Receptor Agonists**

GLP-1 receptor agonists are a class of injectable drugs that mimic the glucagon-like peptide-1 hormone, which regulates appetite and insulin secretion. They help patients feel fuller longer, reduce blood sugar levels, and promote weight loss. Drugs like Mounjaro and Wegovy belong to this class. GLP-1 agonists have gained popularity globally for treating obesity and type 2 diabetes. Patent expirations, such as Wegovy's in India in March 2026, are prompting the development of generic versions by local manufacturers. Governments and companies have made pricing deals to improve access amid affordability concerns.

#### WHY IN NEWS?

GLP-1 receptor agonists like Mounjaro and Wegovy are driving a surge in India's weight-loss drug market, with patent expirations expected to increase competition.

### **GPS Spoofing**

**GPS spoofing** is a cyberattack technique where fake satellite signals are broadcast to deceive GPS receivers. These counterfeit signals mimic legitimate satellite data, causing receivers to report incorrect position, speed, or timing. In aviation, this disrupts navigation systems, potentially leading to hazardous situations during approaches and landings. Spoofing is commonly used in conflict zones for military advantage but rarely affects civilian airspace. Signals can drift hundreds to thousands of kilometers from their origin,



impacting areas far from conflict. Aircraft rely on GPS for Required Navigation Performance (RNP), making spoofing risk to flight safety.

#### WHY IN NEWS?

GPS spoofing disrupted flight operations at Delhi's Indira Gandhi International Airport, causing delays and diversions due to corrupted navigation signals affecting aircraft landing systems.

### **Gynandromorphism**

Gynandromorphism is a biological condition where an organism contains both male and female tissues, often resulting in visibly divided physical traits. It occurs due to errors in cell division affecting sex chromosomes early in development. This phenomenon is rare but documented in insects, crustaceans, birds, and spiders. Gynandromorphs can be bilateral, with one side male and the other female, or mosaic, with mixed cells. It differs from hermaphroditism, as gynandromorphs have genetically distinct male and female cells. In spiders, gynandromorphism is extremely rare, with only a few cases reported in mygalomorph species.

#### WHY IN NEWS?

The discovery of *Damarchus inazuma* brought into light gynandromorphism in a new spider species, emphasizing its rarity and unique bilateral sexual characteristics.

### **Hypercalcaemia from Vitamin D**

Hypercalcaemia is a condition characterized by elevated calcium levels in the blood, often caused by excessive vitamin D intake. Vitamin D enhances intestinal calcium absorption, and overdosing can lead to calcium toxicity. Symptoms include nausea, vomiting, weakness, kidney stones, and cardiac arrhythmias. Chronic hypercalcaemia can cause calcification of soft tissues and kidney damage. The risk increases with unmonitored high-dose vitamin D supplementation, especially in individuals with underlying conditions like hyperparathyroidism. Regular blood testing is essential to prevent toxicity during vitamin D therapy, maintaining calcium levels within a safe range.

#### WHY IN NEWS?

Personalized vitamin D supplementation protocols emphasize monitoring to avoid hypercalcaemia, a potential adverse effect of excessive vitamin D intake.

### **International Space Station (ISS) Exterior Exposure**

The ISS exterior environment exposes materials to extreme vacuum, cosmic radiation, microgravity, and temperature fluctuations ranging from  $-157^{\circ}\text{C}$  to  $+121^{\circ}\text{C}$ . Experiments placed outside the station face these conditions continuously, testing biological and material resilience. The ISS orbits Earth approximately every 90 minutes at an altitude of about 420 km. External experiment platforms, such as the European Space Agency's EXPOSE facility, allow direct exposure of samples to space. These conditions simulate long-term space travel effects, providing data for astrobiology and materials science. Biological samples like moss spores and tardigrades have been tested to assess survival mechanisms beyond Earth's atmosphere.



## WHY IN NEWS?

Moss spores were exposed outside the ISS for 283 days to test their survival in space's harsh environment, demonstrating their potential for long-term space missions.

**Interstellar Object 3I/Atlas**

3I/Atlas is the third known interstellar object passing through the Solar System, first detected on July 1, 2025, by ATLAS. It travels on a **hyperbolic orbit**, indicating it is not gravitationally bound to the Sun and originated outside the Solar System. At discovery, it was 670 million km from the Sun, moving at 60 km/h, unusually fast for that distance. It will make its closest approach to Earth on December 19, 2025, at 170 million miles away. Studying 3I/Atlas helps scientists learn about planetary formation in other star systems by analyzing its composition and trajectory.

## WHY IN NEWS?

NASA released new images of 3I/Atlas using multiple spacecraft, denoting its significance as an interstellar visitor and offering vital information about materials from beyond our Solar System.

**Jiangmen Underground Neutrino Observatory (JUNO)**

The **Jiangmen Underground Neutrino Observatory (JUNO)** is located in Jiangmen, Guangdong Province, China. It is one of the world's largest neutrino detectors, containing a 20,000-ton liquid scintillator detector submerged underground to shield from cosmic rays. JUNO aims to determine the neutrino mass ordering and precisely measure neutrino oscillation parameters, especially  $\theta_{12}$ . The project involves international collaboration with scientists from over a dozen countries, including Armenia, Belgium, Brazil, and the U.S. JUNO began data collection in 2025 and has released initial performance results, marking milestone in neutrino physics research.

## WHY IN NEWS?

JUNO completed construction and released its first scientific analyses in November 2025, surpassing the stalled India-based Neutrino Observatory (INO) project.

**Kodaikanal Solar Observatory**

The **Kodaikanal Solar Observatory (KoSO)** was established in 1904 in Tamil Nadu. It specializes in solar observations using the Ca II K wavelength to study the Sun's chromosphere. KoSO has collected continuous solar data for over a century, making it one of the longest-running solar observatories globally. It captures images of solar plages and magnetic networks, which are key to understanding solar magnetic activity. The observatory is operated by the **Indian Institute of Astrophysics (IIA)** and has contributed to solar physics through its digitized historical archives.

## WHY IN NEWS?

KoSO's century-old solar data was used to reconstruct the Sun's polar magnetic history, aiding predictions of solar activity and improving understanding of Solar Cycle 25.

**Laser Interferometer Gravitational-wave Observatory (LIGO)**

LIGO consists of two 4-kilometer-long perpendicular arms forming an L-shape, each housed in a vacuum to minimize interference. A laser beam is split and sent down both



arms, reflecting between mirrors about 300 times to increase sensitivity. Gravitational waves cause minute distortions in spacetime, changing the relative lengths of the arms and shifting the phase of the recombined laser beams, producing a measurable flicker at a photodetector. LIGO's design allows detection of distortions smaller than a proton's diameter. It was the first observatory to directly detect gravitational waves in 2015, confirming Einstein's prediction.

#### WHY IN NEWS?

LIGO was part of the global network that detected the clearest gravitational wave signal to date, GW250114, from merging black holes in January 2025, marking a major milestone in gravitational wave astronomy.

### **LVM3 Rocket**

The **LVM3** (Launch Vehicle Mark-3), previously known as GSLV Mk III, is ISRO's most powerful launch vehicle, capable of lifting over 4-tonne payloads to geosynchronous transfer orbit. It features a three-stage configuration with two solid strap-on boosters, a liquid core stage, and a cryogenic upper stage. The vehicle supports India's heavy satellite launches and human spaceflight missions, including the upcoming **Gaganyaan** program. LVM3's M5 mission demonstrated routine handling of heavy communication satellites, reducing reliance on foreign launchers. Its design emphasizes high payload capacity and reliability for strategic and commercial space missions.

#### WHY IN NEWS?

The LVM3 M5 mission launched the GSAT-7R satellite on November 2, 2025, showing its capability to deliver heavy payloads to GTO, critical for India's naval and human spaceflight ambitions.

### **Manganese Telluride (MnTe)**

Manganese telluride (MnTe) is a crystalline compound known as a standard antiferromagnet until its altermagnetic properties were discovered in 2024. It has a hexagonal crystal structure where magnetic moments alternate antiparallel in a pattern connected by rotational or mirror symmetries. MnTe exhibits **spin-splitting** in its electronic bands despite zero net magnetization. It was the first material to provide experimental evidence of altermagnetism using angle-resolved photoemission spectroscopy (ARPES) and X-ray magnetic dichroism. MnTe's magnetic domains form complex swirling textures, crucial for understanding altermagnetic order vectors.

#### WHY IN NEWS?

MnTe was the first material to experimentally demonstrate altermagnetism in 2024, confirming theoretical predictions and enabling new magnetic measurement techniques.

### **Marburg Virus**

**Marburg virus** is a member of the Filoviridae family, closely related to the Ebola virus. It causes Marburg virus disease, a severe viral hemorrhagic fever with a case fatality rate of up to **88%**. The virus is naturally hosted by **Rousettus aegypti**, a species of fruit bat. Transmission to humans occurs via contact with bat secretions or bodily fluids from



infected individuals. Symptoms include high fever, severe headache, muscle pain, fatigue, and often fatal bleeding within a week. No antiviral treatments or vaccines are currently licensed for Marburg virus disease.

#### WHY IN NEWS?

Ethiopia reported its first-ever outbreak of Marburg virus disease, confirming nine cases in the South Ethiopia Region, prompting WHO-supported containment efforts.

### **Melanocytes**

Melanocytes are specialized cells located in the basal layer of the epidermis, hair follicles, and the uveal tract of the eyes. They produce melanin through a process called melanogenesis, involving the enzyme tyrosinase. Melanocytes transfer melanin to keratinocytes, which determines skin and hair color. These cells originate from the neural crest during embryonic development. Melanocytes also play a role in immune response and UV protection. Their dysfunction can result in conditions like vitiligo or melanoma, a type of skin cancer. Melanocytes are present in most vertebrates and some invertebrates, contributing to coloration and camouflage.

#### WHY IN NEWS?

Melanocytes are discussed in the context of understanding skin pigmentation disorders and advances in melanoma treatment.

### **National Quantum Mission (India)**

The National Quantum Mission is an Government of India initiative launched to accelerate research, development, and application of quantum technologies. It focuses on quantum computing, communication, sensing, and semiconductor fabrication. The mission aims to reduce dependency on imports by encouraging domestic innovation and infrastructure. It supports establishing advanced labs capable of cooling atoms to near absolute zero and developing photon-based communication networks. This strategic investment aligns with global efforts by countries like the US, China, and Germany to lead the quantum technology revolution.

#### WHY IN NEWS?

India's National Quantum Mission is brought into light as the country intensifies efforts to build quantum infrastructure and leverage the century-old legacy of Satyendra Nath Bose in quantum science.

### **National Remote Sensing Centre (NRSC)**

The **National Remote Sensing Centre (NRSC)** is a key unit of ISRO responsible for satellite data acquisition, processing, and dissemination. It manages geospatial data platforms like NDEM and provides multi-temporal satellite imagery and thematic maps for disaster management, agriculture, forestry, and urban planning. NRSC operates ground stations and supports national and international remote sensing applications. It develops tools for environmental monitoring and supports decision-making by integrating satellite data with GIS technologies. NRSC also collaborates with various government agencies for data sharing and capacity building in geospatial technologies.



## WHY IN NEWS?

NRSC is responsible for maintaining the NDEM portal, which has been made mandatory for use in highway project reports by the Ministry of Road Transport and Highways.

**Neurotechnology**

Neurotechnology includes tools that directly interact with the nervous system to measure, modulate, or stimulate brain activity. It encompasses devices like deep brain stimulators for treating Parkinson's disease and brain-computer interfaces that help people with disabilities communicate or control prosthetics. Consumer neurotechnology products such as connected headbands and headphones often monitor stress, heart rate, and sleep by collecting neural data. Investment in neurotechnology companies surged by **700% between 2014 and 2021**. Despite medical regulation, many neurotechnology applications remain unregulated, raising concerns about privacy, consent, and ethical use, especially for vulnerable populations like children.

## WHY IN NEWS?

UNESCO adopted a new normative instrument to regulate neurotechnology, emphasizing ethical boundaries and the protection of mental privacy, entering into force during the 2025 General Conference in Samarkand, Uzbekistan.

**OECD Patent Pools**

Patent pools in neurotechnology allow multiple companies or inventors to combine patents into a single shared license. This reduces the need for separate negotiations and accelerates technology transfer. The OECD introduced guidelines in 2019 promoting patent pools to support responsible innovation. These pools facilitate access to neurotechnology inventions, especially benefiting developing countries by enabling customization and strategic partnerships. The approach balances intellectual property rights with wider technology dissemination, encouraging collaboration and reducing barriers to entry in neurotechnology research and development.

## WHY IN NEWS?

The OECD's 2019 standards on responsible innovation in neurotechnology, including patent pools, underpin UNESCO's 2025 ethical framework by encouraging equitable and responsible technology sharing.

**One Week–One Theme**

One Week–One Theme is an integrated national research model promoted by CSIR and allied institutions to encourage collaborative scientific progress. It involves dedicating one week to focused research themes that encourage synergy across various government scientific bodies such as CSIR, DBT, and partner institutes. This approach aims to accelerate breakthroughs by pooling expertise, resources, and data sharing, thereby enhancing the efficiency and visibility of India's scientific advancements. The model supports the translation of laboratory innovations into practical applications, especially in frontier areas like genomics, biotechnology, and public health.

## WHY IN NEWS?

Dr. Jitendra Singh brought into light the One Week–One Theme model during the launch



event to emphasize collaborative research as a driver for accelerating India's genomic medicine and biotechnology goals.

### **Optical Transceiver (SFP)**

An Optical Transceiver (Small Form-factor Pluggable, SFP) is a compact, hot-pluggable device used in data communication and telecommunications to convert electrical signals into optical signals and vice versa. SFP modules support various communication standards, including Ethernet and Fibre Channel, enabling high-speed data transmission over fiber optic cables. India's first manufacturing facilities for SFP modules were recently established by Jabil Circuit India Private Limited and Zetchem Supply Chain Services Private Limited under the ECMS. These transceivers are critical for internet infrastructure, data centers, and telecom networks, providing scalable and flexible connectivity solutions.

#### WHY IN NEWS?

India's first domestic optical transceiver manufacturing units were approved, marking step toward self-reliance in telecom hardware components.

### **Oral Rehydration Salts (ORS)**

Oral Rehydration Salts (ORS) are a mixture of glucose and electrolytes used to treat dehydration caused by diarrhea and other conditions. ORS was endorsed by the World Health Organization (WHO) as a simple, cost-effective treatment to reduce mortality from dehydration worldwide. The formula typically contains sodium chloride, potassium chloride, trisodium citrate, and glucose. ORS is classified as a drug product under various national regulations, including India's Drugs and Cosmetics Act, 1940. It is not a food product and must be used under medical guidance. ORS solutions are packaged in pre-measured sachets for easy preparation.

#### WHY IN NEWS?

FSSAI clarified that legitimate WHO-recommended ORS products are drugs and exempt from food safety enforcement actions, amid confusion caused by beverages misleadingly labeled as ORS.

### **Pilia Genus**

The **Pilia** genus belongs to the family of jumping spiders (Salticidae), characterized by their excellent vision and agile hunting methods without webs. The genus was last recorded with a new species in 1902, making recent discoveries. Pilia spiders are small, often less than 5 millimeters, and exhibit unique courtship dances. They are rarely studied due to their elusive nature and specific habitat requirements. The genus is primarily distributed in the Indian subcontinent, with many species showing habitat specificity to certain plants or microhabitats. Both male and female morphological traits were undocumented until the recent discovery.

#### WHY IN NEWS?

A new species, *Pilia malenadu*, was discovered in Madhugundi village, marking the first Pilia species found in over 123 years and documenting both sexes for the first time.



## Project Suncatcher

Project Suncatcher is Google's initiative to deploy AI compute chips on solar-powered satellites in orbit. It aims to harness solar energy, which is over **100 trillion times** humanity's total electricity production, to power machine learning systems. The project focuses on creating scalable data centers in space using Tensor Processing Units (TPUs) to reduce environmental impacts on Earth. Challenges include high-speed inter-satellite communication at tens of terabits per second and thermal management in orbit. Google's Trillium TPUs have been tested to withstand radiation doses equivalent to a **five-year mission** without permanent damage. Prototype launches are planned by 2027 with Planet.

### WHY IN NEWS?

Google announced Project Suncatcher as a new moonshot to scale AI compute in space, addressing environmental concerns and leveraging solar power for satellite-based data centers.

## Protein Nuclear Magnetic Resonance Spectroscopy

Protein nuclear magnetic resonance (NMR) spectroscopy is a technique used to determine the 3D structure of proteins in solution. It exploits the magnetic properties of atomic nuclei to provide detailed information about protein dynamics, folding, and interactions. Unlike X-ray crystallography, NMR does not require crystallization, allowing study of proteins in more natural states. It was one of the primary methods for mapping protein structures before AI models like AlphaFold. NMR spectroscopy can also detect subtle conformational changes and transient states critical for understanding protein function and drug interactions.

### WHY IN NEWS?

Protein NMR spectroscopy is mentioned as part of the historical dataset used to train AI models like AlphaFold, enabling breakthroughs in predicting protein folding.

## RTS,S/AS01 Vaccine

The **RTS,S/AS01 vaccine**, also known as Mosquirix, was developed by GlaxoSmithKline and PATH with partners. It is the first malaria vaccine to receive WHO prequalification and recommendation. RTS,S targets the circumsporozoite protein of Plasmodium falciparum and requires a 4-dose schedule for optimal protection. Clinical trials showed it reduces malaria cases by approximately 50% in the first year, with efficacy enhanced by a booster dose. The vaccine is integrated into routine immunisation programs in 24 African countries and is a mainstay of malaria prevention efforts, especially in areas with high transmission.

### WHY IN NEWS?

RTS,S remains a key WHO-prequalified malaria vaccine alongside R21/Matrix-M, both included in the Gavi malaria vaccination program expansion.

## Satish Dhawan Space Centre

The **Satish Dhawan Space Centre (SDSC SHAR)** is India's primary rocket launch center



located in Sriharikota, Andhra Pradesh. It operates multiple launch pads, including the second launch pad used for the GSAT-7R mission. The center supports the launch of satellites into various orbits, including geosynchronous transfer orbit. Named after ISRO's former chairman Satish Dhawan, it plays a key role in India's space missions, including communication, navigation, and interplanetary probes. SDSC SHAR also houses vehicle assembly, integration, and testing facilities, enabling end-to-end launch preparations.

WHY IN NEWS?

The GSAT-7R satellite was launched from the second launch pad at Satish Dhawan Space Centre on November 2, 2025, marking event in India's space and defense capabilities.

### **Silicon Carbide Wafers**

Silicon carbide (SiC) wafers are semiconductor substrates made from silicon carbide crystals, known for high thermal conductivity, high breakdown electric field, and chemical stability. These wafers are preferred in power electronics for electric vehicles, renewable energy, and industrial applications due to their efficiency at high voltages and temperatures. SiC wafers enable devices to operate faster with less energy loss compared to traditional silicon wafers. Manufacturing SiC wafers is complex, requiring precise crystal growth and slicing techniques. Global supply is limited, making domestic production important for strategic independence in critical technologies.

WHY IN NEWS?

The new plant in Bhubaneswar will produce 60,000 SiC wafers annually, boosting India's capacity in high-performance semiconductor components.

### **SIMPLEx Program**

NASA's **SIMPLEx (Small Innovative Missions for Planetary Exploration)** program funds small, cost-effective planetary science missions. It enables rapid development of compact spacecraft to explore planetary bodies, focusing on innovative technologies and high-value science. SIMPLEx missions often involve secondary payloads launched on larger rockets. The program aims to increase flight opportunities and scientific return while minimizing costs. Escapade is one of the notable SIMPLEx missions, utilizing twin small satellites to study Mars' atmosphere and magnetosphere. SIMPLEx emphasizes agility and affordability in planetary exploration.

WHY IN NEWS?

Escapade, a SIMPLEx mission, was launched in 2025 to investigate Mars' atmospheric loss, showcasing the program's role in advancing planetary science with small spacecraft.

### **Sintered Magnet Manufacturing**

Sintered magnets are made by compacting rare earth alloy powders and heating them below melting points to fuse particles together. This process yields magnets with high density, strength, and magnetic properties superior to bonded magnets. Sintering allows precise control over microstructure, enhancing performance in demanding applications like aerospace and electric vehicles. The process requires advanced technology and strict environmental controls due to the handling of rare earth powders. Sintered magnets



typically have higher coercivity and remanence, making them indispensable for high-performance motors and generators.

#### WHY IN NEWS?

The Government of India's new scheme specifically promotes sintered rare earth permanent magnet manufacturing, marking the country's first integrated facility targeting high-performance magnet production.

### **Small Modular Nuclear Reactors**

are compact nuclear power plants designed for flexible deployment and lower capital investment compared to traditional reactors. They typically produce up to 300 MW of electricity and can be factory-built, reducing construction time. SMRs enhance grid resilience and can be deployed in remote or smaller grids. They incorporate passive safety features and can be integrated with renewable energy systems. SMRs are considered a key technology for low-carbon energy transition, especially for countries with growing energy demands and limited space for large plants. Several countries are advancing SMR development for commercial use in the 2020s.

#### WHY IN NEWS?

SMRs are a key topic at the GELS 2025 summit, reflecting their growing importance in India's sustainable energy strategy.

### **Society for Applied Microwave Electronics Engineering and Research (SAMEER)**

SAMEER is an autonomous R&D institution under India's Ministry of Electronics and Information Technology (MeitY), specializing in microwave electronics and allied technologies. It focuses on areas like radar, communication, and semiconductor equipment development. SAMEER has capabilities in vacuum systems, plasma power, and process chambers critical for semiconductor toolmaking. It collaborates with academic and industrial partners to translate prototypes into production-grade tools. SAMEER also supports defence and civilian applications, contributing to India's strategic technological autonomy. Its research infrastructure includes advanced labs for microwave devices, sensors, and instrumentation. SAMEER plays a key role in India's semiconductor equipment ecosystem development.

#### WHY IN NEWS?

SAMEER is brought into light as a key research institution supporting India's ambition to develop indigenous semiconductor manufacturing equipment.

### **Spore Wall Structure**

Spore walls in mosses consist of multiple layers, including the exine and intine, which protect the reproductive cells inside. The exine is a tough, chemically resistant outer layer composed primarily of sporopollenin, one of the most durable organic materials known. This multilayered structure shields spores from UV radiation, desiccation, and physical damage. In *Physcomitrium patens*, these walls provide passive protection against space stresses such as vacuum and cosmic radiation. The spore wall's ability to maintain spore viability under extreme conditions is crucial for dispersal and survival in harsh terrestrial



and extraterrestrial environments.

WHY IN NEWS?

Moss spore walls enabled survival of spores during prolonged exposure to space conditions, supporting their use in future space habitat sustainability research.

### StKM 1-1262

StKM 1-1262 is a red dwarf star located approximately **133 light years** from Earth. Red dwarfs are smaller and cooler than the sun, with masses between 10% and 50% of the sun's mass. StKM 1-1262 gained attention after a coronal mass ejection (CME) was detected from it, which was at least **10,000 times more powerful** than solar storms on our sun. Such violent stellar activity can severely impact the atmospheres of orbiting planets, affecting their potential habitability. Red dwarfs like StKM 1-1262 are common targets in the search for Earth-sized exoplanets.

WHY IN NEWS?

A powerful stellar storm was detected on StKM 1-1262, the first CME observed beyond our solar system, raising concerns about habitability around red dwarf stars.

### Stool-based TB Testing in Children

Stool-based TB testing uses molecular diagnostic methods like Truenat to detect Mycobacterium tuberculosis DNA in stool samples. This approach addresses difficulties in obtaining sputum samples from children, who often cannot expectorate. It allows **non-invasive, rapid diagnosis** in primary health-care settings. Trials in Nigeria and other African countries have demonstrated improved bacteriological confirmation rates in pediatric TB cases using this technique. It supports early treatment initiation and better TB control among children, a group traditionally underdiagnosed due to sample collection challenges.

WHY IN NEWS?

Nigeria's experimentation and successful use of stool-based Truenat testing for childhood TB diagnosis has been cited as a breakthrough in improving pediatric TB detection in 2025.

### Stress-Enhanced Fear Response (SEFR)

Stress-Enhanced Fear Response (**SEFR**) occurs when stress causes fear reactions to objects or situations unrelated to the original threat. It differs from stress-enhanced fear learning, which is a heightened response to the original context. SEFR is linked to anxiety disorders, phobias, and PTSD. It involves unlearned fear triggered by new stimuli after a stressful event. SEFR is characterized by automatic defensive behaviors, such as freezing, without conscious control. Research shows SEFR can be experimentally induced in mice by exposing them to new cues after stress, denoting its role in maladaptive fear generalization.

WHY IN NEWS?

SEFR was studied in mice to understand brain mechanisms underlying unlearned fear, aiding PTSD treatment research by identifying specific brain regions responsible for this response.



## Sun-Earth Lagrangian L1 Point

The **Sun-Earth Lagrangian L1 point** is a gravitational equilibrium location about 1.5 million kilometers from Earth towards the Sun where spacecraft can maintain a stable position relative to both bodies. It allows continuous observation of the Sun without Earth eclipses, enabling 24-hour solar monitoring. L1 is an ideal orbit for solar observatories like Aditya-L1 and NASA's SOHO, facilitating uninterrupted data collection on solar activity, solar wind, and space weather events. The stable gravitational balance reduces fuel consumption for station-keeping maneuvers.

### WHY IN NEWS?

Aditya-L1's placement at the L1 point allows the VELC instrument to provide continuous, uninterrupted spectroscopic observations of solar phenomena including CMEs.

## Surgical Thrombectomy

Surgical thrombectomy is a procedure to remove blood clots from arteries or veins to restore blood flow. It is commonly used in acute ischemic stroke, deep vein thrombosis, and arterial blockages. The technique involves inserting a catheter into the blocked vessel to physically extract the clot. It is often combined with clot-dissolving medications (thrombolytics) to improve outcomes. Thrombectomy has revolutionized stroke treatment by reducing disability when performed promptly. It requires specialized interventional neurologists or vascular surgeons and advanced imaging to identify suitable candidates.

### WHY IN NEWS?

Doctors performed a surgical thrombectomy on a 29-year-old patient's femoral artery clot while simultaneously administering clot-dissolving drugs for brain and heart clots.

## Tensor-Processing Units (TPU)

Tensor-Processing Units (**TPUs**) are custom-developed application-specific integrated circuits (**ASICs**) designed by Google specifically for accelerating machine learning workloads, particularly neural network computations. First introduced in 2016, TPUs optimize matrix multiplication and high-throughput operations essential for deep learning. They are integrated into Google's data centers and cloud infrastructure, offering speed and energy efficiency advantages over traditional CPUs and GPUs. TPUs have evolved through multiple generations, with later versions supporting larger models and more complex operations. Their architecture is tailored for TensorFlow, Google's machine learning framework, enabling efficient training and inference at scale. TPUs represent a shift in viewing hardware as a scientific input rather than a mere cost.

### WHY IN NEWS?

Google's TPU program exemplifies how fixed capital investments underpin Nobel-winning AI research and corporate dominance in large-scale model training infrastructure.

## Titanium Alloys in Steel Manufacturing

**Titanium alloys** are metal mixtures where titanium is combined with elements like aluminum, vanadium, or molybdenum to enhance strength, corrosion resistance, and heat tolerance. These alloys are widely used in aerospace, medical devices, and high-



performance engineering applications. In steel manufacturing, titanium alloys improve mechanical properties and durability, especially in specialty steel segments. Titanium's low density and high strength-to-weight ratio make these alloys critical for lightweight and high-strength components. India's inclusion of titanium alloys in the PLI scheme reflects a strategic push to develop advanced materials for both domestic industries and export markets.

#### WHY IN NEWS?

Titanium alloys are among the advanced steel products targeted in the third round of India's PLI Scheme for Specialty Steel, aiming to boost production and innovation in high-end materials.

### **TnpB Protein**

TnpB is a **Transposon-associated protein** derived from bacteria, functioning as a miniature genome editing tool. It is smaller than Cas9 and Cas12a proteins, enabling more precise and efficient DNA modifications. The Central Rice Research Institute in India patented an indigenous genome editing technology using TnpB, which is cost-effective due to the absence of foreign intellectual property restrictions. TnpB acts as a molecular scissor to cut DNA at specific sites, similar to CRISPR-associated proteins but with a simpler structure. Its smaller size allows easier delivery into plant cells, enhancing genome editing applications.

#### WHY IN NEWS?

Indian scientists patented a TnpB-based genome editing tool as a cheaper and more effective alternative to Cas proteins for developing genome-edited crops.

### **Transgenerational Epigenetic Inheritance**

Transgenerational epigenetic inheritance refers to the transmission of information from one generation to the next that affects traits without changes in DNA sequence. It involves epigenetic mechanisms such as DNA methylation, histone modification, and non-coding RNAs. This inheritance can influence behavior, metabolism, and disease susceptibility. The phenomenon is controversial and varies widely between species and contexts. In *C. elegans*, small RNAs have been implicated in passing environmental information across generations. Epigenetic marks can be reset during gametogenesis, but some persist, enabling inherited changes in gene expression and phenotype.

#### WHY IN NEWS?

The study explores whether learned avoidance behavior in worms can be inherited across generations, contributing to the debate on transgenerational epigenetic inheritance.

### **TRAPPIST-1 System**

The TRAPPIST-1 system, about **40.7 light-years** away, contains seven Earth-sized planets orbiting an ultracool M-dwarf star. JWST has found that TRAPPIST-1b and 1c lack thick, carbon dioxide-rich atmospheres, suggesting they are not Earth-like despite their size and location near the habitable zone. The system is a key target for studying atmospheric retention and habitability under intense stellar radiation. Its planets exhibit diverse



atmospheric conditions, influenced by stellar activity, magnetic fields, and volcanic processes, making TRAPPIST-1 a natural laboratory for understanding exoplanet atmospheres and the limits of habitability.

#### WHY IN NEWS?

JWST's recent atmospheric studies of TRAPPIST-1b and 1c provide vital information about the survivability of atmospheres on Earth-sized planets in M-dwarf systems.

### Trillium TPU

Trillium TPU is a Tensor Processing Unit variant developed by Google to operate in space environments. These chips have undergone radiation testing and can survive a **total ionizing dose** equivalent to five years in orbit without permanent failure. They are designed to handle machine learning workloads efficiently while withstanding harsh space conditions such as cosmic radiation and temperature extremes. The TPU architecture supports high-performance AI computations and is integral to Project Suncatcher's goal of building scalable, space-based AI data centers powered by solar energy.

#### WHY IN NEWS?

Google tested Trillium TPUs for radiation resilience as part of Project Suncatcher, aiming to deploy AI chips on satellites orbiting Earth.

### TrueNat Diagnostic Platform

TrueNat is a portable, battery-operated molecular diagnostic platform developed by Indian company Molbio Diagnostics. It uses chip-based real-time PCR technology for rapid detection of infectious diseases such as tuberculosis, COVID-19, and dengue. TrueNat tests provide results within an hour and are designed for use in remote and resource-limited settings. The platform is endorsed by the Government of India and WHO for its accuracy and ease of use. It supports decentralized testing, reducing dependence on centralized labs. TrueNat's development has boosted India's capacity for quick diagnostics, especially during the COVID-19 pandemic.

#### WHY IN NEWS?

TrueNat was mentioned as an example of India's innovation in diagnostics during the National One Health Mission Assembly 2025, showcasing advancements in faster, accessible testing technologies.

### Truenat Molecular Platform

Truenat is a **portable, battery-powered molecular diagnostic platform** developed by Molbio Diagnostics in India. It uses real-time PCR technology to detect tuberculosis and drug-resistant strains within an hour, enabling rapid diagnosis at the point of care. The platform is **WHO-approved** and has been integrated into national TB programs in countries like Nigeria, Mozambique, and Tanzania. It supports **stool-based TB testing in children**, overcoming sputum collection challenges. Truenat's rapid results facilitate treatment initiation within seven days, improving TB management in resource-limited settings. Its deployment has enhanced detection of rifampicin-resistant TB cases.

#### WHY IN NEWS?

Truenat's integration into various African national TB programs and its role in accelerating



diagnosis and treatment have been brought into light as key innovations in global TB control efforts in 2025.

### **Typhoid Conjugate Vaccine (TCV)**

The Typhoid Conjugate Vaccine (TCV) is a newer vaccine type prequalified by WHO in 2017, effective for 3-10 years with a single dose. It can be co-administered safely with other routine childhood vaccines from six months of age. TCV improves immune response by linking the polysaccharide antigen to a protein carrier. Typbar TCV by Bharat Biotech was among the first manufactured in 2013, followed by vaccines from Serum Institute of India and Zydus Lifesciences. Field trials in Navi Mumbai in 2018 administered over 100,000 doses at a cost of USD 1.87 per dose, cheaper than treating typhoid infection.

#### WHY IN NEWS?

Bangladesh introduced TCV nationwide in November 2025, vaccinating 50 million children, while India, a major vaccine supplier, has yet to include it in its routine immunisation programme.

### **VAIBHAV Fellowship**

The **VAIBHAV Fellowship** is an initiative by the Government of India to engage its scientific diaspora globally. It facilitates collaboration between Indian researchers and NRIs (Non-Resident Indians) in academia and R&D centers worldwide. The fellowship currently spans three years, with proposals to extend it to five years, allowing sustained scientific partnerships. It encourages student mobility, enabling Indian students to work abroad and foreign students to join Indian labs. The program supports cross-border public-private partnerships and aims to institutionalize diaspora engagement, encouraging knowledge exchange and innovation for India's scientific ecosystem.

#### WHY IN NEWS?

VAIBHAV Fellows and Government of India officials discussed extending the fellowship duration and easing travel and academic exchange processes at ESTIC 2025, aiming to deepen global scientific collaborations.

### **Vandenberg Space Force Base**

Vandenberg Space Force Base, located in California, is a major US launch site primarily used for polar orbit satellite launches. It was originally established as a missile testing range in 1941 and became a space launch facility in the 1950s. The base supports launches for NASA, the Department of Defense, and commercial space companies. It features multiple launch pads and facilities for tracking and telemetry. Vandenberg is unique for enabling satellites to be launched into polar orbits, which pass over the Earth's poles, allowing global coverage. It was renamed from Vandenberg Air Force Base to Space Force Base in 2021.

#### WHY IN NEWS?

Sentinel-6B was launched from Vandenberg Space Force Base, denoting the base's ongoing role in launching important Earth observation satellites.



## Vernodden

Vernodden is a location on Mars situated near the Jezero Crater, an ancient lakebed targeted for exploration due to its potential for past life evidence. The site gained attention when NASA's Perseverance rover identified an unusually shaped rock there, suspected to be a meteorite. Vernodden features diverse geological formations, including sculpted and high-standing rocks contrasting with the surrounding flat bedrock. Its proximity to Jezero Crater, which contains delta deposits and impact craters, makes it for studying Mars' geological history and meteorite impacts. The name Vernodden follows planetary nomenclature conventions for Martian surface features.

### WHY IN NEWS?

Vernodden was brought into light when Perseverance discovered a possible iron-nickel meteorite there, marking a new find distinct from typical Martian bedrock during routine exploration.

## Vibration Signal Transmission in Spider Webs

Spider webs transmit vibrations caused by prey struggling or environmental factors. Vibrations travel along radial threads ("spokes") and capture spiral threads to the web's center where the spider waits. Different vibration directions affect how quickly and widely signals spread. Sideways vibrations along the web's threads are enhanced by stabilimenta, allowing the spider to detect prey location more accurately. This selective amplification helps spiders balance sensitivity to prey with avoiding detection by predators. About this natural vibration control informs engineering fields like noise reduction, acoustic sensing, and impact protection materials.

### WHY IN NEWS?

The 2025 research demonstrated how stabilimenta modify vibration transmission in webs, suggesting applications in engineering and materials science.

## Video EEG Monitoring

Video EEG monitoring combines continuous electroencephalogram (EEG) recording with simultaneous video capture to observe physical behavior during seizures. This dual approach helps differentiate epileptic seizures from non-epileptic events and accurately localize seizure onset zones. It is particularly useful for diagnosing complex or refractory epilepsy cases and guiding surgical treatment decisions. The procedure can last several days in a hospital or epilepsy monitoring unit, requiring medication adjustments to provoke seizures safely. Video EEG is considered the gold standard for epilepsy diagnosis and presurgical evaluation due to its ability to correlate electrical brain activity with clinical manifestations.

### WHY IN NEWS?

Highlighted as a key diagnostic tool for epilepsy during awareness activities on National Epilepsy Day 2025 in India.

## Vijnana Bharati

Vijnana Bharati is an Indian organization promoting indigenous science and technology,



founded in 1991. It aims to integrate traditional Indian knowledge systems with modern scientific research. The group actively supports science popularization and innovation aligned with cultural values. Vijnana Bharati organizes events, workshops, and conferences to encourage scientific temper among youth. It collaborates with government bodies and academic institutions to promote research rooted in Indian heritage. The organization played a role in advocating Aatmanirbhar Bharat (self-reliant India) in science and technology. It emphasizes the fusion of ancient wisdom with cutting-edge modern science.

#### WHY IN NEWS?

Representatives from Vijnana Bharati attended the high-level review meeting for the India International Science Festival 2025, denoting their collaboration with government initiatives to promote indigenous science.

### **Vikram-I Rocket**

Vikram-I is India's first privately developed orbital launch vehicle designed to carry payloads of approximately 300 kg to Low Earth Orbit. It features an all-carbon-fiber body, enabling lightweight and robust structure. The rocket can deploy multiple satellites simultaneously, a first in India's space industry, and supports multi-orbit insertion and interplanetary missions. Vikram-I can be assembled and launched within 24 hours from any launch site. It targets the growing small satellite market, projected to be worth \$77 billion by 2030, and aims to serve both domestic and international customers. The series is named after Dr. Vikram Sarabhai.

#### WHY IN NEWS?

Vikram-I was revealed at Skyroot Aerospace's new Infinity Campus, denoting India's entry into private orbital launches and advanced satellite deployment technology.

### **Viral Barcoding**

Viral barcoding is a technique that uses harmless viruses to insert unique genetic tags into individual stem cells. These tags allow researchers to trace all descendant cells from the original stem cell, tracking lineage and differentiation over time. Combined with single-cell RNA sequencing and spatial profiling, viral barcoding provides detailed maps of cell development and migration. It has been applied to cultured human fetal brain tissue to reveal how neurons mature gradually through intermediate stages. This method confirms developmental patterns observed in vivo and helps distinguish cell identities based on gene activity changes rather than fixed categories.

#### WHY IN NEWS?

Used by Dr. Tomasz Nowakowski's team to trace human brain cell lineages, viral barcoding helped create a time-resolved atlas of neuron development published in November 2025.

### **Virtual Power Plants (VPPs)**

Virtual Power Plants (VPPs) aggregate distributed energy resources like home batteries, solar panels, and flexible loads to operate as a single power plant on the grid. VPPs



enhance grid flexibility by balancing supply and demand, especially during peak load times or renewable energy variability. They enable consumers to participate in grid management by storing or releasing electricity as needed. In India, enabling homes and offices to connect batteries into VPPs is proposed to help smooth peak demand and integrate more renewables, reducing reliance on fossil fuel “shock absorber” plants during evening and night peaks.

#### WHY IN NEWS?

India plans to deploy VPPs to improve grid flexibility and manage peak electricity demand, supporting the integration of renewable energy sources.

### **Visible Emission Line Coronagraph (VELC)**

The **Visible Emission Line Coronagraph (VELC)** is a space-based solar instrument onboard India’s Aditya-L1 mission, designed to observe the Sun’s corona in visible wavelengths. It uniquely performs spectroscopic observations of coronal mass ejections (CMEs) close to the Sun’s surface, enabling measurement of electron density, temperature, mass, speed, and energy of CMEs near their origin. Positioned at the Sun-Earth Lagrangian L1 point, VELC provides continuous 24-hour solar monitoring. It is the first coronagraph to capture visible wavelength spectra of CMEs from space, aiding understanding of solar eruptions and their impact on space weather.

#### WHY IN NEWS?

VELC recently provided the first-ever spectroscopic data of a CME near the Sun’s surface, advancing knowledge of CME properties and dynamics during the current solar cycle 25 maximum phase.

### **Vitamin D Metabolism Variability**

Vitamin D metabolism varies among individuals due to genetic factors, skin pigmentation, age, body fat, and liver and kidney function. Enzymes like CYP2R1 and CYP27B1 regulate conversion of vitamin D to its active form, calcitriol. Variations in these enzymes’ activity affect circulating vitamin D levels and response to supplementation. Additionally, polymorphisms in the vitamin D receptor gene (VDR) influence tissue sensitivity. Factors such as obesity sequester vitamin D in fat tissue, lowering bioavailability. This variability challenges uniform dosing strategies and supports personalized supplementation to achieve optimal serum concentrations and therapeutic effects.

#### WHY IN NEWS?

The inconsistency in vitamin D supplementation outcomes is attributed to ignoring individual metabolic differences, prompting calls for personalized dosing in heart disease management.

### **Vitamin K Deficiency Bleeding (VKDB)**

Vitamin K Deficiency Bleeding (VKDB) is a bleeding disorder primarily affecting newborns due to insufficient vitamin K at birth. It can occur early (within 24 hours), classic (1-7 days), or late (2 weeks to 6 months after birth). VKDB leads to serious hemorrhages, including intracranial bleeding, which can cause long-term neurological damage or death.



Newborns have low vitamin K stores and sterile intestines lacking vitamin K-producing bacteria. Prophylactic vitamin K injections at birth are standard practice worldwide to prevent VKDB. Breastfed infants are at higher risk as breast milk contains low vitamin K.

#### WHY IN NEWS?

VKDB is mentioned in the context of early signs of vitamin K deficiency and the importance of newborn vitamin K injections to prevent bleeding complications.

### Vitamin K2 (Menaquinones)

Vitamin K2 refers to a group of compounds called menaquinones, produced primarily by gut bacteria and found in fermented foods like natto and some animal products. It differs from Vitamin K1 by having longer side chains, which influence its bioavailability and tissue distribution. Vitamin K2 activates proteins involved in calcium regulation, directing calcium to bones and preventing arterial calcification. It has multiple subtypes, MK-4 through MK-13, with MK-7 being the most studied for cardiovascular benefits. Unlike K1, K2 has a longer half-life in the body, allowing it to maintain vitamin K-dependent processes more effectively, especially in extrahepatic tissues.

#### WHY IN NEWS?

Vitamin K2 is brought into light for its role in bone and heart health, especially in populations with vitamin K deficiency due to gut disorders or long-term medication use.

### VKORC1 Gene

The **VKORC1** gene encodes the vitamin K epoxide reductase complex subunit 1, an enzyme critical for recycling vitamin K, which is necessary for blood clotting. Variants in VKORC1 influence sensitivity to Warfarin, a blood thinner, by altering enzyme activity and thus the drug's therapeutic dose. Different VKORC1 haplotypes are associated with low or high Warfarin dose requirements. Approximately **50% of Warfarin dose variability** is attributed to VKORC1 and CYP2C9 gene variants combined. VKORC1 polymorphisms vary widely among ethnic groups, impacting dosing algorithms globally. The gene's discovery in the late 1990s revolutionized personalized anticoagulant therapy.

#### WHY IN NEWS?

VKORC1 is a key genetic marker used to guide Warfarin dosing in pharmacogenomic protocols, reducing adverse bleeding risks and improving treatment safety.

### Wide-field Infrared Survey Explorer (WISE)

WISE is a NASA infrared-wavelength astronomical space telescope launched in December 2009. It conducted an all-sky survey at 3.4, 4.6, 12, and 22 microns, detecting hundreds of millions of objects including stars, galaxies, and asteroids. After its primary mission ended in 2011, WISE was reactivated as NEOWISE in 2013 to focus on near-Earth objects (NEOs). WISE uses a 40 cm (16 inch) diameter telescope cooled by solid hydrogen to detect faint infrared signals. It was the first mission to map the entire sky in infrared since the IRAS mission in 1983.

#### WHY IN NEWS?

WISE and its extended NEOWISE mission provided over ten years of mid-infrared data used to analyze the variability of young stellar objects, revealing new vital information



about star formation processes.

### **World Wide Lightning Location Network (WWLLN)**

The **World Wide Lightning Location Network (WWLLN)** is a global sensor system detecting lightning by triangulating very low frequency (VLF) radio waves emitted during lightning strikes. It operates with over 70 sensors worldwide, providing near real-time data. WWLLN can detect both cloud-to-ground and intra-cloud lightning, with a detection efficiency of around 70-90%. It plays important role in volcanic eruption monitoring by identifying volcanic lightning, which helps in early warning systems. The network was initially developed for atmospheric research but now supports aviation safety and disaster management globally. Its data is freely accessible to researchers and meteorological agencies.

#### WHY IN NEWS?

WWLLN is brought into light for its role in detecting volcanic lightning during early eruption stages, aiding timely evacuation alerts and aviation route adjustments to avoid volcanic ash hazards.

### **Zinc-Vanadium Oxide (Zn-V<sub>2</sub>O<sub>5</sub>)**

Zinc-vanadium oxide (**Zn-V<sub>2</sub>O<sub>5</sub>**) is a modified form of vanadium pentoxide (**V<sub>2</sub>O<sub>5</sub>**) created through thermo-electrochemical activation, introducing deliberate structural defects. These defects form a porous, sponge-like framework that enhances ion transport and energy storage capacity. The material facilitates interaction with hydrogen ions from the electrolyte, improving structural stability and reducing zinc ion migration barriers during battery operation. Zn-V<sub>2</sub>O<sub>5</sub> exhibits higher energy density and longevity compared to unmodified V<sub>2</sub>O<sub>5</sub>, enabling zinc-ion batteries to be recharged thousands of times with minimal degradation. This material is very important for advancing aqueous zinc-ion battery cathodes.

#### WHY IN NEWS?

Bengaluru scientists developed Zn-V<sub>2</sub>O<sub>5</sub> cathode material using a novel activation process to boost energy density and stability in zinc-ion batteries, marking a breakthrough in eco-friendly battery technology.

## **International Relations & Organizations**

### **2015 Land Boundary Agreement**

The **2015 Land Boundary Agreement (LBA)** between India and Bangladesh resolved a decades-old border dispute involving 162 enclaves and adverse possession of land. It exchanged territories totaling approximately 17,000 acres, enabling residents to choose citizenship and eliminating confusing enclaves. The agreement improved bilateral relations by stabilizing the border and facilitating cooperation. It also allowed for easier movement of people and goods, boosting trade and connectivity. The LBA ended a legacy of colonial-era boundary ambiguities and was ratified by both countries' parliaments. It remains a landmark in South Asian diplomacy and a model for peaceful resolution of territorial disputes.



## WHY IN NEWS?

The agreement is referenced as part of Sheikh Hasina's legacy of improving India-Bangladesh connectivity and bilateral relations.

**Africa-India Key Maritime Engagement (AIKEYME)**

The Africa-India Key Maritime Engagement (AIKEYME) is a naval exercise initiated in April 2025 involving India and nine African navies – Comoros, Djibouti, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, and Tanzania. It is the first security partnership rooted in shared oceanic geography between India and African nations. AIKEYME focuses on maritime security cooperation, capacity building, and joint exercises to safeguard Indian Ocean trade routes. This collaboration reflects growing strategic ties and a mutual interest in combating piracy and ensuring safe navigation along critical sea lanes connecting Africa and Asia.

## WHY IN NEWS?

AIKEYME was conducted in April 2025 as a new maritime security initiative, marking step in India-Africa defense cooperation.

**Agaléga Islands**

The **Agaléga Islands** are two small islands in the western Indian Ocean, part of Mauritius. India and Mauritius inaugurated an upgraded airstrip and jetty there in 2024. The airstrip now supports operations of India's larger P8I maritime reconnaissance aircraft, expanding India's naval reach into the Indian Ocean and the waters off East Africa. The islands have limited population and infrastructure but hold strategic importance for monitoring shipping lanes and countering Chinese influence in the region.

## WHY IN NEWS?

India's development of infrastructure on Agaléga Islands marks step in expanding its strategic footprint in the Indian Ocean following the closure of the Ayni Airbase in Tajikistan.

**ASEAN Defence Ministers' MeetingPlus (ADMM-Plus)**

The **ASEAN Defence Ministers' MeetingPlus (ADMM-Plus)** is a platform established in 2010 that brings together the ten ASEAN member states and eight dialogue partners, including the US, China, Japan, and Russia. It focuses on regional security cooperation, enhancing mutual trust, and addressing transnational threats like terrorism, maritime security, and humanitarian assistance. The ADMM-Plus meets annually at the ministerial level, with working groups tackling specific issues. Its inclusive framework encourages dialogue and practical cooperation among diverse military forces in the Indo-Pacific region. The 12th meeting was held in Kuala Lumpur, Malaysia, in 2025.

## WHY IN NEWS?

The 12th ADMM-Plus meeting in Kuala Lumpur was the venue for the signing of the new 10-year US-India Defence Framework, marking step in bilateral defence cooperation.

**BASIC Grouping**

The **BASIC Grouping** consists of Brazil, South Africa, and China, formed in 2009 as an alliance of major emerging economies coordinating their positions in international climate



negotiations. BASIC countries advocate for climate justice, emphasizing equity and historical responsibility, and often push for developed countries to take the lead in emission reductions and finance. The group has influenced UNFCCC discussions by presenting joint statements and negotiating as a bloc. BASIC also promotes technology transfer and capacity building for developing countries while balancing climate action with national development goals.

#### WHY IN NEWS?

At COP30, the BASIC grouping, represented by India's delegation, issued joint statements urging developed countries to achieve net zero emissions earlier and invest in negative emission technologies.

### **BIMSTEC**

The **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation** (BIMSTEC) is a regional organization established in 1997, comprising seven South and Southeast Asian countries – Bangladesh, Bhutan, Myanmar, Nepal, Sri Lanka, and Thailand. It aims to promote economic integration, technical cooperation, and cultural exchange among member states. BIMSTEC covers sectors like trade, energy, transport, and disaster management. It operates as a bridge between South Asia and Southeast Asia. Despite its potential, BIMSTEC is less known globally compared to SAARC. It has a rotating chairmanship and meets biennially at the summit level to discuss regional priorities.

#### WHY IN NEWS?

BIMSTEC is brought into light for its role in encouraging regional cooperation on climate change and economic resilience, as South Asia seeks collective climate action ahead of COP30.

### **Ice-Class Vessels**

Ice-class vessels are ships specifically designed to operate in polar waters, equipped with reinforced hulls to navigate through ice-covered seas. These vessels are critical for Arctic exploration, shipping, and research. Russia, with its extensive Arctic coastline, has advanced ice-class shipbuilding capabilities, which India aims to leverage through joint projects. The development of **green shipbuilding** technologies for ice-class vessels includes innovations to reduce emissions and improve energy efficiency in harsh environments. Ice-class vessels enable access to untapped natural resources and new maritime routes emerging due to climate change.

#### WHY IN NEWS?

Discussions during the 2025 India-Russia summit include cooperation on ice-class vessels as part of maritime and Arctic operations, reflecting strategic interests in polar regions.

### **Indian Ocean Rim Association**

The **Indian Ocean Rim Association (IORA)** is an intergovernmental organization established in 1997 to promote regional cooperation among countries bordering the Indian Ocean. It has 23 member states from Africa, Asia, and Australia. IORA focuses on



maritime safety, trade facilitation, fisheries management, disaster risk reduction, and cultural exchanges. India currently holds the chairmanship, emphasizing its strategic interests in the region. The association encourages dialogue and joint initiatives to enhance economic growth and security. IORA also serves as a platform for addressing challenges like piracy, climate change, and sustainable development in the Indian Ocean region.

#### WHY IN NEWS?

India and Indonesia agreed to intensify cooperation through IORA during their defence dialogue, reflecting shared priorities in the Indo-Pacific region.

#### **International Fleet Review (IFR)**

The **International Fleet Review (IFR)** is a maritime event where naval fleets from multiple countries gather to showcase naval strength, encourage cooperation, and promote diplomatic ties. IFRs typically involve ceremonial fleet parades, naval demonstrations, and professional exchanges among participating navies. These events are hosted by different nations to mark naval anniversaries or milestones. The IFR encourages interoperability among navies and marks advancements in maritime technology and strategy. It often includes **community outreach activities and public ship visits**, enhancing civilian-military relations. The IFR is not annual but occurs based on host country scheduling and naval significance.

#### WHY IN NEWS?

The IFR 2025 is hosted by the Sri Lanka Navy in Colombo, marking its 75th anniversary, with India's INS Vikrant and INS Udaygiri participating for the first time overseas.

#### **International IDEA**

International Institute for Democracy and Electoral Assistance (International IDEA) was established in **1995** as an inter-governmental organization focused on supporting sustainable democracy worldwide. It has **35 member countries** with the United States and Japan as observers. The organization conducts research, provides technical assistance, and promotes electoral processes, constitution-building, and democratic governance. Its headquarters is located in **Stockholm, Sweden**. International IDEA publishes the **Global State of Democracy** report and maintains an extensive database on electoral processes. It also facilitates cooperation among Election Management Bodies (EMBs) to improve election integrity and democratic resilience globally.

#### WHY IN NEWS?

Chief Election Commissioner Gyanesh Kumar will become Chairperson of International IDEA for 2026, leading the council meetings and shaping the global democratic agenda.

#### **International Solar Alliance (ISA)**

The International Solar Alliance (ISA) was launched in 2015 by India and France to promote solar energy deployment globally. It unites over **120 countries** mainly between the Tropics of Cancer and Capricorn, focusing on affordable solar energy access and South-South cooperation. ISA facilitates technology sharing, capacity building, and mobilization



of investments to scale solar power. It aims to reduce dependence on fossil fuels and accelerate clean energy transitions in member countries. ISA also supports innovation in solar technologies and financing mechanisms to lower costs and improve energy security.

#### WHY IN NEWS?

India brought into light its leadership in ISA at COP30 as part of its climate achievements and renewable energy expansion efforts.

### **National Resistance Front**

The **National Resistance Front** (NRF) is the primary anti-Taliban armed group formed after the Taliban's 2021 takeover. Led by Ahmad Massoud, son of the famed anti-Soviet commander Ahmad Shah Massoud, the NRF operates mainly in Panjshir Valley and neighboring regions. The group opposes Taliban rule and seeks to restore a democratic government in Afghanistan. It maintains limited military capability and relies on external support, with leadership currently in exile in Tajikistan. Despite symbolic resistance, the NRF remains weak and fragmented, unable to mount challenge to Taliban control.

#### WHY IN NEWS?

The NRF's weakness and exile status tell the Taliban's current consolidation of power, affecting India's strategic decisions regarding recognition of the Taliban regime.

### **Quadrilateral Security Dialogue (Quad)**

The **Quadrilateral Security Dialogue (Quad)** is a strategic forum comprising the United States, Japan, and Australia, initiated in 2007 to ensure a free and open Indo-Pacific region. The Quad focuses on maritime security, counterterrorism, and infrastructure development. It has evolved from informal consultations to regular summits. The group was dormant for some years but revived in the late 2010s amid rising concerns over China's regional assertiveness. India's role in the Quad reflects its balancing act between US-led alliances and its own outreach to China. The Quad's future depends on geopolitical shifts and member countries' strategic priorities.

#### WHY IN NEWS?

The Quad's relevance is questioned as India reconsiders its approach in light of new US geopolitics and outreach to China, with the next summit postponed to next year.

### **Salma Dam**

The **Salma Dam**, also known as the Afghan-India Friendship Dam, is located on the Hari River in Herat province, Afghanistan. Completed in 2016, it was constructed with Indian assistance and is Afghanistan's largest hydroelectric and irrigation dam. The dam has a capacity of 42 megawatts for electricity generation and irrigates around 75,000 hectares of farmland. It has played role in improving local agriculture and power supply. The project also symbolizes India-Afghanistan cooperation and regional stability efforts. The dam's construction faced challenges due to security issues and difficult terrain in western Afghanistan.

#### WHY IN NEWS?

India referenced past cooperation on water management projects like the Salma Dam while supporting Afghanistan's new dam project on the Kunar River.



## Simla Convention

The **Simla Convention** was a 1914 tripartite treaty involving British India, Tibet, and China, aimed at defining borders and relations. It produced the **McMahon Line**, the boundary between India and Tibet (now Arunachal Pradesh). China signed the initial draft but refused to ratify the final agreement, rejecting the McMahon Line's legitimacy. The convention's failure to gain full Chinese acceptance remains a root cause of the Sino-Indian border dispute. The McMahon Line is recognized by India but contested by China, leading to several military conflicts and ongoing diplomatic tensions.

### WHY IN NEWS?

The Simla Convention is referenced in discussions about Arunachal Pradesh's status amid China's repeated territorial claims and recent incidents affecting Indian travelers.

## Soft Power (Joseph Nye)

Soft power is a term coined by Harvard professor Joseph Nye to describe the ability of a country to influence others through attraction and persuasion rather than coercion or payment. It involves culture, political values, and foreign policies that are seen as legitimate or morally authoritative. Soft power contrasts with hard power, which relies on military or economic force. Japan's soft power includes cultural exports like anime, technological innovation, and promotion of global issues such as health and environmental protection. Nye's concept has influenced international relations theory and diplomatic strategies worldwide. He passed away in early 2025.

### WHY IN NEWS?

The recent Japanese diplomatic approach references Nye's soft power concept to emphasize knowledge and empathy as critical tools in international relations.

## Suez Canal Crisis

The **Suez Canal Crisis** of 1956 was a diplomatic and military conflict involving Egypt, Israel, the UK, and France. It began after Egyptian President Gamal Abdel Nasser nationalized the Suez Canal, previously controlled by British and French interests. Israel invaded the Sinai Peninsula, followed by British and French military intervention aimed at regaining control and removing Nasser. The crisis ended under pressure from the US, USSR, and UN, marking a moment in post-colonial Middle Eastern politics. It was the first major test for the UN's peacekeeping forces, which were deployed to supervise the ceasefire and withdrawal of foreign troops.

### WHY IN NEWS?

The Suez Canal Crisis is mentioned as a historical event during the UN's early years, marking its 11th anniversary in 1956 and denoting early challenges in international peacekeeping.

## TB Vaccine Accelerator Council

The TB Vaccine Accelerator Council is a multi-stakeholder initiative co-convened by the World Health Organization, the Government of South Africa, and Gavi, the Vaccine Alliance. Established to accelerate the development, financing, and equitable access to novel tuberculosis vaccines, it formed the Finance and Access Working Group in February



2025. This council focuses on overcoming barriers such as market dynamics, financing gaps, and supply uncertainties in high-burden countries. It aims to coordinate stakeholders globally to ensure timely vaccine introduction, regional manufacturing, and sustainable financing mechanisms to address the urgent need for adult and adolescent TB vaccines.

#### WHY IN NEWS?

The council's Finance and Access Working Group released a report at the G20 Health Ministers' Meeting in November 2025, detailing strategies for equitable TB vaccine access and financing.

### United Nations Convention against Cybercrime

The **United Nations Convention against Cybercrime**, also known as the Budapest Convention, was adopted by the Council of Europe in 2001 to address internet and computer crime globally. It is the first international treaty aimed at harmonizing national laws, improving investigative techniques, and increasing cooperation among nations to combat cybercrime. Countries ratifying it commit to criminalizing offenses like hacking, fraud, child pornography, and copyright infringement. The convention encourages mutual legal assistance and extradition between signatories. Despite its global influence, some major countries have not ratified it due to concerns over sovereignty and data privacy.

#### WHY IN NEWS?

The Supreme Court asked the Government of India to consider ratifying the UN Convention against Cybercrime to strengthen international cooperation against rising cyber frauds and digital arrest scams.

### Veto System in UN Security Council

The **veto system** in the UN Security Council gives five permanent members (China, France, Russia, the UK, and the US) the power to block any substantive resolution regardless of majority support. Established in 1945 to prevent misuse of majority voting and maintain great power consensus, it has been used extensively – Russia has exercised it 161 times, the US 95 times. The veto system creates a balance between democratic equality of all 193 member states and the political realities of power. Critics argue it impedes UN effectiveness, while supporters claim it prevents domination by majority coalitions and protects national sovereignty.

#### WHY IN NEWS?

The veto system is discussed as a core structural issue impeding UN reform and effectiveness amid calls to expand or abolish it.

### Vienna Convention on Diplomatic Relations

The **Vienna Convention on Diplomatic Relations (1961)** is an international treaty that defines a framework for diplomatic relations between independent countries. It grants diplomatic agents immunity from the host country's laws, ensuring their protection and freedom to perform diplomatic functions. The Convention also outlines the inviolability of diplomatic premises and correspondence, and the privileges of diplomats including



exemption from taxes and jurisdiction. It is the mainstay of modern diplomacy, ratified by nearly all UN member states. The Convention allows embassies to control access to their premises and decide whom to engage with, within diplomatic norms.

#### WHY IN NEWS?

Referenced regarding the Afghan Embassy in Delhi's right to restrict access to its press conference, denoting diplomatic immunities and privileges amid controversy over gender discrimination.

## Social Development & Government Schemes

### Aapda Sakhis

Aapda Sakhis are grassroots women disaster mitigation assistants in Himalayan communities. They play critical roles in emergency response, community preparedness, and disaster risk reduction. These women receive training in first aid, early warning dissemination, evacuation procedures, and relief coordination. Aapda Sakhis combine traditional knowledge with modern technology, such as mobile apps for weather alerts and communication tools. Their involvement enhances local resilience, particularly in remote, disaster-prone areas. The concept originated from community-led disaster management initiatives and is gaining recognition in state climate action plans. Aapda Sakhis often serve as trusted links between government agencies and vulnerable populations.

#### WHY IN NEWS?

Aapda Sakhis are brought into light as key actors in integrating technology and traditional knowledge to improve disaster resilience in the Himalayan region.

### Abujhmediya Tribe

The **Abujhmediya tribe** is a Particularly Vulnerable Tribal Group (PVTG) residing in Abujhmad, a largely unsurveyed and dense forest area in Bastar, Chhattisgarh. Historically isolated and considered an impenetrable Maoist stronghold, the tribe has limited contact with the outside world. Their traditional lifestyle includes hunting, gathering, and shifting cultivation. Recently, government outreach has increased, including participation in the Bastar Olympics, with around 4,500 participants from the tribe. The tribe's inclusion in sports events marks social integration step. The area remains ecologically sensitive and culturally distinct with unique customs and dialects.

#### WHY IN NEWS?

The Abujhmediya tribe's participation in the Bastar Olympics has risen, reflecting improved access and the region's gradual integration after Maoist influence waned.

### Andaman Adim Janjati Vikas Samiti

The Andaman Adim Janjati Vikas Samiti is an administrative body representing the indigenous tribes of the Andaman and Nicobar Islands, particularly the Shompen people. It acts as a liaison between tribal communities and government authorities, focusing on tribal welfare, cultural preservation, and development. The Samiti plays a role in consultations related to land use, forest rights, and infrastructure projects affecting tribal



lands. It helps ensure compliance with laws such as the Forest Rights Act, 2006, and advocates for sustainable development that respects tribal autonomy and traditions. The organization is crucial in monitoring the impact of modernization on tribal habitats.

#### WHY IN NEWS?

The Samiti is involved in consultations for tower site finalization and land denotification linked to the Great Nicobar Island mega-infrastructure project.

### **Animal Birth Control (ABC) Rules, 2023**

The **Animal Birth Control (ABC) Rules, 2023** are framed under the Prevention of Cruelty to Animals Act, 1960, governing the sterilisation, vaccination, and management of stray dogs in India. These rules mandate sterilisation and anti-rabies vaccination before relocating stray dogs. Rule 11(19) permits the release of sterilised and vaccinated dogs back into their original localities, except in cases involving rabid or aggressive animals. The 2023 rules emphasize humane treatment, aiming to reduce stray dog populations and dog-bite incidents while balancing animal welfare and public safety concerns. Compliance is monitored by local authorities and courts.

#### WHY IN NEWS?

The Supreme Court in November 2025 issued directions to enforce the ABC Rules, 2023 strictly, particularly prohibiting the release of stray dogs back into public institutional premises to reduce dog-bite incidents.

### **AYUSH-based Health Services**

AYUSH stands for **Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy**, traditional systems of medicine recognized in India. It is governed by the Ministry of AYUSH, established in **2014**. AYUSH-based health services encompass preventive, promotive, and curative healthcare using indigenous knowledge systems. These services include herbal medicines, yoga therapy, and alternative healing practices. AYUSH practitioners are registered under specific councils for quality control. The inclusion of AYUSH in NIC 2025 marks formal recognition of its economic and health sector contributions. AYUSH exports have grown steadily, with markets in the Middle East and Europe.

#### WHY IN NEWS?

NIC 2025 explicitly includes AYUSH-based health services, acknowledging the growing role of traditional medicine in India's health and economic landscape.

### **Central Adoption Resource Authority (CARA)**

The **Central Adoption Resource Authority (CARA)** is an autonomous body under the Ministry of Women and Child Development, Government of India, established in 1990. It regulates and monitors in-country and inter-country adoptions. CARA implements the provisions of the Juvenile Justice (Care and Protection of Children) Act, 2015, and Adoption Regulations, 2022. It coordinates with State Adoption Resource Agencies (SARAs) to facilitate adoption processes. CARA maintains a centralized database of adoptable children and prospective adoptive parents. It also promotes awareness and best practices



in adoption and ensures ethical and transparent procedures. CARA is the nodal agency for inter-country adoption in India.

#### WHY IN NEWS?

CARA is hosting the National Adoption Awareness Conclave 2025 in Visakhapatnam to promote adoption of children with special needs and strengthen the adoption ecosystem across India.

### **Central Cottage Industries Emporium (CCIE)**

The Central Cottage Industries Emporium (CCIE) was established in 1952 to promote and market Indian handicrafts and handlooms. It operates under the Ministry of Textiles and provides a platform for rural artisans and craftsmen to sell their products nationally and internationally. CCIE supports traditional crafts like wood carving, chikankari, zari-zardozi, and handloom textiles. It also plays a role in preserving cultural heritage by ensuring the survival of indigenous art forms through sustainable livelihoods. The Emporium collaborates with various government schemes to integrate artisans into formal markets.

#### WHY IN NEWS?

CCIE is one of the key suppliers to the Aabhar online store, which the Indian Railways is promoting to showcase indigenous and local handicraft products.

### **Chief Minister's Relief Fund (CMRF)**

The **Chief Minister's Relief Fund** is a state-managed fund used to provide financial assistance during emergencies and disasters. It supplements disaster relief efforts by offering additional aid beyond central and state disaster relief funds. In Uttarakhand, the CMRF has been used to grant extra compensation to owners of kutchha houses damaged in natural calamities, providing ₹1 lakh additional support. The fund is financed through voluntary contributions and government allocations, aimed at quickly addressing urgent humanitarian needs when regular relief mechanisms are insufficient.

#### WHY IN NEWS?

The CMRF is providing additional financial aid to victims of the recent Dharali flash floods, supplementing disaster relief funds for affected families.

### **Dalit Christians and Muslims**

**Dalit Christians and Dalit Muslims** are socially marginalized groups in India who descend from historically oppressed castes but have converted to Christianity or Islam. Despite facing poverty and discrimination similar to Hindu Dalits, they are excluded from Scheduled Caste (SC) reservations and benefits under Indian law. This exclusion is due to constitutional definitions limiting SC status to Hindus, Sikhs, and Buddhists. Approximately **47% of urban Dalit Muslims live in poverty**, higher than Hindu Dalits. The Supreme Court is currently considering a plea for religion-neutral reservation policies that would extend affirmative action benefits to Dalits regardless of faith.

#### WHY IN NEWS?

The Supreme Court is reviewing a plea to extend SC-like reservation benefits to Dalit Christians and Muslims, addressing longstanding exclusion and poverty in these communities.



## Gig and Platform Workers

Gig and platform workers engage in short-term, task-based jobs facilitated by digital platforms, including ride-sharing, delivery, and freelance services. Estimated at nearly eight million in India, this workforce lacks traditional employment benefits. The Labour Codes formally recognize gig and platform workers, extending social security schemes covering health, maternity, insurance, and old-age benefits. Aggregators, or platform operators, are also acknowledged, creating a legal framework for accountability. This inclusion aims to bridge the gap between informal gig work and formal labor protections, encouraging inclusive growth as technology reshapes employment patterns.

### WHY IN NEWS?

Gig and platform workers receive formal recognition and social security protections under the new Labour Codes, reflecting the growing significance of the gig economy in India's workforce.

## Global Hunger Index (GHI)

The **Global Hunger Index (GHI)** is a multidimensional statistical tool developed by the International Food Policy Research Institute (IFPRI) to comprehensively measure hunger worldwide. It combines four indicators – undernourishment, child stunting, child wasting, and child mortality. Scores range from 0 (no hunger) to 100 (worst hunger), classified into five severity levels – low (0–9.9), moderate (10.0–19.9), serious (20.0–34.9), alarming (35.0–49.9), and extremely alarming (50.0). The GHI tracks hunger trends globally, regionally, and nationally, guiding policy and awareness. India ranked 102nd in 2025 with a serious score of 25.8, reflecting ongoing challenges despite food production growth.

### WHY IN NEWS?

The GHI 2025 report brought into light India's serious hunger status, ranking 102nd out of 123 countries with a score of 25.8, underscoring persistent malnutrition despite agricultural advances.

## Haj Committee of India (HCoI)

The **Haj Committee of India (HCoI)** was established under the Haj Committee Act of 2002 to facilitate and manage the pilgrimage of Indian Muslims to Saudi Arabia. It operates under the Ministry of Minority Affairs and coordinates logistics, accommodation, transportation, and medical services for over 175,000 pilgrims annually. HCoI collaborates closely with Saudi authorities to ensure compliance with international and domestic regulations. It also provides training to Haj assistants and inspectors. The committee functions year-round, overseeing all operational aspects to ensure a safe and dignified pilgrimage experience for Indian Haj Yatris.

### WHY IN NEWS?

The HCoI is central to the National Haj Conference focused on reviewing operational readiness and inter-agency cooperation for Haj 2026.

## In-situ Slum Redevelopment (ISSR)

In-situ Slum Redevelopment (ISSR) is a component of the Pradhan Mantri Awas Yojana



(PMAY-Urban) aimed at redeveloping slum areas without displacing the existing residents. It involves providing free land to slum dwellers and incentivizing private developers to construct multi-story housing units. ISSR allows slum dwellers to gain ownership rights, improving living conditions while maintaining community ties. This approach reduces urban sprawl and prevents forced evictions. The scheme integrates infrastructure upgrades such as water, sanitation, and electricity. It is one of four PMAY components, designed to address affordable housing needs in urban India through public-private partnerships and subsidies.

#### WHY IN NEWS?

ISSR is brought into light as part of PMAY's strategy to provide affordable housing and improve living conditions for urban poor populations by redeveloping slums in situ without displacement.

### JAM Trinity

The JAM Trinity stands for Jan Dhan, Aadhaar, and Mobile, a digital framework launched by the Government of India to ensure efficient delivery of social welfare benefits. Jan Dhan Yojana provides universal access to banking services. Aadhaar is a 12-digit biometric identity number unique to each resident. The Mobile component leverages widespread mobile phone usage for direct benefit transfers. Introduced around 2014-2015, this system reduced leakages, fraud, and delays in subsidies. It covers over 940 million people as of 2025, enabling real-time tracking of funds and encouraging financial inclusion across rural and urban areas.

#### WHY IN NEWS?

The JAM Trinity is brought into light as the backbone of India's social protection expansion, covering 64.3% of the population and facilitating direct benefit delivery at the WSSD-2 summit in Doha, 2025.

### Katkari Tribe

The **Katkari** are an indigenous tribal community primarily found in Maharashtra, known for their traditional forest-based livelihoods. They have historically faced bonded labour and exploitation, with many members subjected to child trafficking and seasonal migration disrupting education. Despite legal protections like the **Forest Rights Act** and **MNREGA**, many Katkari families remain landless and deprived of promised benefits. Their social invisibility is compounded by widespread poverty and alcohol abuse. The community struggles with rehabilitation and recognition, making them one of the most marginalized tribal groups in the region.

#### WHY IN NEWS?

The Katkari community is protesting near Mumbai to demand implementation of land rights, unpaid wages, and protection from exploitation, denoting their ongoing struggle for dignity and government support.

### Kavach Protocol

The "Kavach" protocol is a comprehensive safety framework mandated for factories



employing women on night shifts. It requires 24/7 CCTV surveillance, trained security guards, GPS-tracked door-to-door transport, monitored restrooms and routes, and welfare amenities such as food, water, and medical aid. Factories must ensure no fewer than four women per shift for collective vigilance. Violations incur heavy penalties, including fines and possible shutdowns. The protocol aims to eliminate coercion and ensure women's safety and dignity while working night shifts, representing a pioneering model of workplace security in industrial India.

#### WHY IN NEWS?

The Kavach protocol was introduced alongside the repeal of the night shift ban in Uttar Pradesh factories in 2025, establishing strict safety measures for women working at night.

### **Korku Tribe**

The Korku tribe is an indigenous community primarily residing in Melghat and parts of Madhya Pradesh. They speak the Korku language, which belongs to the Munda subfamily of Austroasiatic languages. Traditionally, the Korku are agriculturalists and forest gatherers with a rich cultural heritage including unique festivals and customs. The tribe faces socio-economic challenges such as poverty, malnutrition, and limited access to education and healthcare. High rates of infant mortality and maternal health issues are prevalent due to poor nutrition and healthcare access. Government schemes targeting tribal welfare often struggle due to geographic isolation and administrative challenges in Korku areas.

#### WHY IN NEWS?

The Korku tribe is central to the malnutrition and infant mortality crisis in Melghat, with recent reports denoting the failure of interventions to improve their health outcomes.

### **Lakhpatti Didis**

refers to women in India who have earned over **one lakh rupees** through economic activities, primarily driven by Self-Help Groups under the DAY-NRLM. More than 20 million women have attained this status, symbolizing rural women's economic empowerment. The term marks the success of microfinance and collective entrepreneurship in lifting women out of poverty. Lakhpatti Didis have contributed to rural development by increasing household incomes and encouraging financial independence. The initiative also aims to change societal perceptions of women by showcasing their economic strength and leadership in communities.

#### WHY IN NEWS?

Shri Shivraj Singh Chouhan brought into light the rise of over 20 million Lakhpatti Didis during the Nayi Chetna campaign launch, emphasizing their role in women's empowerment and poverty eradication.

### **Legal Services Authorities Act, 1987**

The **Legal Services Authorities Act, 1987** established a nationwide system for providing free legal aid to marginalized and disadvantaged citizens in India. It created a three-tier structure – the National Legal Services Authority (headed by the Chief Justice of India),



State Legal Services Authorities (headed by the Chief Justice of High Courts), and District Legal Services Authorities (headed by District Judges). The Act also introduced **Lok Adalats** for alternate dispute resolution. Funding comes from central, state governments, and donations through separate legal aid funds. Since its implementation on November 9, 1995, it has expanded access to justice for millions of Indians annually.

#### WHY IN NEWS?

The Act's anniversary is observed annually as National Legal Services Day, denoting increased outreach and free legal aid services benefiting over 44 lakh people from 2022-25.

### MANAS Helpline

MANAS is the National Narcotics Helpline toll-free number (1933) established by the Narcotics Control Bureau of India to encourage citizens to report drug-related activities anonymously. It serves as a communication channel for sharing information about narcotics sale and trafficking. The helpline is part of a community engagement strategy to enhance intelligence gathering and disrupt drug networks. MANAS operates 24/7 and is staffed by trained personnel who receive, record, and forward actionable intelligence to enforcement agencies. It is instrumental in grassroots-level drug control efforts, bridging the gap between law enforcement and the public.

#### WHY IN NEWS?

The NCB urged citizens to use the MANAS helpline to provide information following the bust of a major methamphetamine cartel in Delhi.

### Maram Naga Tribe

The **Maram Naga tribe** inhabits the Senapati and Kangpokpi districts of **Manipur**, with a population of around **50,000**. They are known for their unique **Morung** system, traditional communal dormitories serving as cultural and social centers for youth. The Maram practice agriculture and maintain rich oral traditions, including folk songs and dances. Their language belongs to the Tibeto-Burman family. The tribe's social structure is clan-based, with customs centered on communal harmony and ancestral worship. The Maram have distinct festivals such as **Maram Lamlai**, celebrating agricultural cycles and community bonding.

#### WHY IN NEWS?

The Government of India sanctioned Rs 9 crore for welfare and development projects supporting the Maram Naga tribe under the Jan Man Scheme in 2025.

### Marine Fisheries Census 2025

The National Marine Fisheries Census 2025 is a fully digital, geo-referenced enumeration covering 1.2 million fisher households in 5,000 villages across 13 coastal states and Union Territories. Conducted over 45 days from November to December 2025, it uses mobile applications VyAS-NAV, VyAS-BHARAT, and VyAS-SUTRA for real-time data collection and verification. The census collects detailed socio-economic data including income, insurance status, and government scheme participation. It integrates with the National Fisheries



Digital Platform (NFDP) to enable fisher registration for welfare schemes. This census aims to improve data quality, governance, and evidence-based fisheries management in India.

#### WHY IN NEWS?

Launched on 31 October 2025, the census is a major initiative under PMMSY to enhance digital governance and support sustainable fisheries policies.

### **Melghat**

Melghat is a tribal-dominated region in Amravati district, Maharashtra, primarily inhabited by the Korku tribal community. It is known for its dense forests and hilly terrain. The area faces chronic malnutrition and high infant mortality rates despite decades of government interventions. Melghat has limited healthcare infrastructure, poor road connectivity, and frequent power outages, which exacerbate health issues. The region experiences high prevalence of anaemia, sickle cell disease, and pneumonia among children. Government efforts include hot food schemes and Village Child Development Centres (VCDs) in gram panchayats to monitor Severe Acute Malnutrition (SAM) cases. Infant Mortality Rate (IMR) here remains higher than the state average.

#### WHY IN NEWS?

The Bombay High Court criticized Maharashtra and Union governments for their inadequate response to infant deaths caused by malnutrition in Melghat, where 65 infants died from June 2025, denoting systemic healthcare failures.

### **Multidimensional Poverty Index**

The Multidimensional Poverty Index (MPI) measures poverty beyond income, incorporating indicators like health, education, and living standards to assess deprivation levels in households. Developed by the Oxford Poverty and Human Development Initiative and the UNDP, MPI identifies overlapping disadvantages that affect quality of life. It is used to target interventions more effectively than income-based poverty metrics. In India, MPI data shows disparities in poverty levels across districts, revealing that regions with similar deprivation may experience different levels of insurgency, denoting governance and social factors as critical influences beyond economic conditions.

#### WHY IN NEWS?

The MPI is referenced to challenge the narrative that poverty alone drives Naxalism, showing that districts with similar poverty levels differ in extremist activity, pointing to governance and identity issues.

### **National Organ Transplant Programme (NOTP)**

The **National Organ Transplant Programme (NOTP)** is an initiative by the Government of India to promote equitable access to organ and tissue transplantation services. It coordinates between state and national bodies to streamline donor registration, organ allocation, and transplantation procedures. NOTP supports infrastructure development, awareness campaigns, and capacity building for transplant centers. It aims to reduce waiting times and improve transplant success rates, especially in underserved regions. The program works closely with NOTTO and state-level organizations to implement



policies and guidelines under the Transplantation of Human Organs and Tissues Act.

WHY IN NEWS?

The 2025 amendment strengthens the NOTP to improve corneal transplantation availability and accessibility across India, especially in rural and semi-urban areas.

### **National Sample Survey Office (NSSO)**

The National Sample Survey Office (NSSO) was established in **1950** as a government agency responsible for conducting large-scale sample surveys on socio-economic topics across India. It operates under the Ministry of Statistics & Programme Implementation (MoSPI). NSSO collects data on employment, consumer expenditure, health, education, and industry, among others. The data is vital for policy-making and economic planning. In **2023**, NSSO was merged into the newly formed National Statistical Office (NSO) to streamline statistical activities. NSSO's surveys have been instrumental in India's economic research and development since independence.

WHY IN NEWS?

The 75th anniversary of NSS was commemorated alongside the launch of NIC 2025, denoting the agency's historical role in India's statistical system.

### **National Skill Development Corporation (NSDC)**

NSDC is a public-private partnership established in 2008 to promote skill development in India. It acts as an intermediary between the government and private sector, implementing schemes like PMKVY. NSDC accredits and monitors Training Partners and Centres. It has the authority to blacklist non-compliant entities and initiate recovery of funds. NSDC has faced controversies including the ousting of its CEO Ved Mani Tewari in May 2025 and police complaints against officials for alleged misappropriation of government funds and property.

WHY IN NEWS?

NSDC is under scrutiny following the blacklisting of numerous TPs and TCs under PMKVY 4.0 and ongoing investigations into corruption and mismanagement within the corporation.

### **Nayi Chetna Campaign**

The **Nayi Chetna** campaign is a national initiative launched by the Ministry of Rural Development under the DAY-NRLM scheme to promote **gender equality** and **women's empowerment** in rural India. It focuses on improving **women's safety, dignity, and economic participation**. The campaign mobilizes Self-Help Groups (SHGs) and community-based action to combat gender-based violence and promote shared domestic responsibilities. It operates with a **whole-of-government approach**, involving 11 ministries to ensure a coordinated effort across sectors. The campaign runs nationwide until December 2025 and emphasizes changing societal mindsets towards daughters and substance abuse awareness.

WHY IN NEWS?

The fourth edition of the Nayi Chetna campaign was inaugurated in November 2025 to strengthen efforts for women's safety, empowerment, and economic participation in rural



India, supported by multiple ministries and Self-Help Groups.

### **Nik-shay Mitra**

Nik-shay Mitra are community volunteers registered under India's tuberculosis (TB) control initiatives, supporting TB patients through counseling, treatment adherence, and follow-up. They act as a bridge between healthcare providers and patients, ensuring timely diagnosis and completion of treatment. During the SNSPA campaign, over **2.68 lakh Nik-shay Mitra** were registered, enhancing community participation in TB control. These volunteers often come from local communities and are trained to provide psychosocial support and health education. The program is part of the larger National Tuberculosis Elimination Program (NTEP), which aims to eliminate TB in India by 2025 through active case finding and patient-centered care.

#### WHY IN NEWS?

Nik-shay Mitra registrations surged during the SNSPA campaign, contributing to the screening of over 85.9 lakh women for tuberculosis.

### **Niryat Disha**

NIRYAT DISHA is the non-financial support sub-scheme of the Export Promotion Mission. It focuses on enhancing export readiness through quality and compliance support, international branding, packaging assistance, participation in trade fairs, export warehousing, logistics, inland transport reimbursements, and trade intelligence. It aims to reduce the cost and complexity of meeting international standards and improve market visibility for Indian exporters. The scheme also promotes capacity building and skill development to help exporters from non-traditional districts and sectors become competitive in global markets.

#### WHY IN NEWS?

Niryat Disha is part of the EPM framework approved in 2025 to strengthen India's export infrastructure and non-financial support mechanisms for MSMEs and emerging exporters.

### **One District One Product (ODOP)**

The One District One Product (ODOP) scheme is a government initiative aimed at promoting the unique products of each district in India. It focuses on identifying a product with potential in every district, encouraging local manufacturing and marketing to boost rural economies. ODOP supports artisans, weavers, and small-scale industries by providing branding, financial assistance, and market access. It often overlaps with Geographical Indication (GI) tagging to protect traditional knowledge and regional uniqueness. The program enhances employment generation and preserves indigenous crafts, contributing to sustainable economic development at the grassroots level.

#### WHY IN NEWS?

ODOP products are being brought into light on the Aabhar online store supported by Indian Railways for promoting local artisans and traditional crafts in official functions and gifting.



## Operation White Cauldron

Operation White Cauldron was a covert anti-drug enforcement operation conducted by the Directorate of Revenue Intelligence (DRI) in November 2025. It targeted an illegal Alprazolam manufacturing unit in Valsad, Gujarat. The operation involved discreet surveillance followed by a coordinated raid, leading to the seizure of over 113.7 kg of Alprazolam in finished and semi-finished forms, along with 431 kg of raw chemicals. The operation resulted in the arrest of four individuals, including financiers, manufacturers, and a drug recipient. This operation is part of a series of crackdowns on synthetic drug production linked to the Nasha Mukh Bharat Abhiyaan.

### WHY IN NEWS?

Operation White Cauldron led to the bust of a major Alprazolam manufacturing unit in Gujarat, with drug seizures and arrests, denoting ongoing efforts against synthetic drug production in India.

## PM Garib Kalyan Anna Yojana

The PM Garib Kalyan Anna Yojana is a food security scheme launched in 2020 to provide free ration to poor families during the COVID-19 pandemic. It distributed 5 kg of wheat or rice and 1 kg of pulses per person per month to eligible households under the National Food Security Act. The scheme was extended multiple times and reached over 800 million beneficiaries at its peak. It played an important role in poverty alleviation and food security during crises. The program is managed by the Food Corporation of India and uses the Public Distribution System infrastructure.

### WHY IN NEWS?

It is cited as a key initiative contributing to India's reduction of multidimensional poverty and social protection coverage expansion, discussed at the WSSD-2 summit in Doha, 2025.

## PM Gati Shakti Programme

The **PM Gati Shakti Programme** is a national infrastructure plan launched by the Government of India to integrate multiple modes of transportation and logistics. It uses a digital platform to coordinate rail, road, waterways, and air transport, reducing logistics costs and turnover time. The programme promotes a unified approach to infrastructure development, enabling faster project approvals and improved inter-agency cooperation. It supports sectors like agriculture, manufacturing, and exports by streamlining supply chains. The initiative also leverages geospatial technology and real-time data to optimize infrastructure planning and execution across the country.

### WHY IN NEWS?

Referenced by Pralhad Joshi during the launch of digital warehousing initiatives, PM Gati Shakti underpins efforts to synchronize transportation modes for efficient food grain distribution and logistics modernization.

## PM Kisan Samman Nidhi (PM-KISAN)

The PM-KISAN scheme, launched on February 24, 2019, provides annual financial assistance of **Rs. 6000** per eligible farmer family. Over **Rs. 3.70 lakh crores** have been



disbursed to more than **11 crore farmer families** through 20 installments. Eligibility is based on land details seeded in the PM-KISAN portal, Aadhaar-linked bank accounts, and completed e-KYC. The scheme dedicates over **25% of its benefits to women farmers**. It uses Aadhaar-based digital infrastructure including biometric, OTP, and facial authentication for e-KYC. The PM-KISAN Mobile App and portal enable benefit tracking and self-registration. The scheme eliminates middlemen via Direct Benefit Transfer (DBT).

#### WHY IN NEWS?

PM-KISAN remains a major government initiative providing direct financial support to farmers, recently enhanced with digital tools like facial authentication and mobile app services to improve accessibility and transparency.

### **PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM)**

Launched in October 2021, PM-ABHIM is India's largest public health infrastructure initiative since 2005, with a budget of Rs. 64,180 crore for 2021-2026. It aims to strengthen healthcare capacity from village health centres to district hospitals, improve disease monitoring, and enhance health research infrastructure nationwide. Rs. 54,205 crore is allocated for state-level programs and Rs. 9,340 crore for central programs. PM-ABHIM was initiated to address gaps revealed by the COVID-19 pandemic, ensuring India's preparedness for future health emergencies through robust infrastructure development.

#### WHY IN NEWS?

PM-ABHIM is actively upgrading healthcare infrastructure across India, supporting the country's resilience against pandemics and improving overall health system capacity by 2025.

### **PM-JANMAN**

PM-JANMAN is a flagship Government of India scheme aimed at the **particularly vulnerable tribal groups (PVTG)**. It focuses on saturating identified tribal habitations with essential government services such as electricity, piped water, mobile connectivity, and housing. The scheme uses **Forest Rights Act (FRA) titles** as a basis to identify eligible communities. It aims to uplift tribal populations by ensuring access to basic amenities and socio-economic development. The program is closely linked with PM-AWAS for housing support and works in conjunction with other tribal welfare initiatives like DAJGUA. It was intensified during the 150th birth anniversary of tribal leader Birsa Munda.

#### WHY IN NEWS?

The Supreme Court's recent order on forest land and housing construction may affect PM-JANMAN's implementation, requiring government discussions on reconciling the Forest Rights Act and Forest Conservation Act for tribal housing benefits.

### **PM-Kisan Annadata Sukhibhava**

**PM-Kisan Annadata Sukhibhava** is a government assistance scheme providing direct financial support to farmers. Over 68 lakh farmers have received approximately Rs 3,200 crore under this scheme. It aims to supplement farmers' income to reduce financial stress and encourage sustainable farming. The scheme is part of a broader government effort to



stabilize agricultural livelihoods and ensure food security. It complements other initiatives by offering timely monetary aid, enabling farmers to invest in modern technologies and inputs. The scheme is designed to cover a wide demographic of cultivators across the State.

#### WHY IN NEWS?

The scheme was brought into light by the Agriculture Minister during the launch of Rythanna Meekosam to demonstrate ongoing financial support to farmers.

### **PM-Svanidhi Scheme**

The **PM-Svanidhi** (Pradhan Mantri Street Vendor's AtmaNirbhar Nidhi) scheme was launched in 2020 to provide affordable working capital loans to street vendors impacted by the COVID-19 pandemic. It offers loans up to ₹10,000 with a one-year tenure and an interest subsidy of 7%. The scheme also incentivizes timely repayments by offering cashback rewards, which can be used for digital transactions or loan repayments. PM-Svanidhi integrates financial inclusion with digital payments, aiming to formalize street vending and improve livelihoods. Over 50 lakh vendors have benefited as of 2025, with ongoing expansions to include micro-entrepreneurs.

#### WHY IN NEWS?

PM-Svanidhi was mentioned as a government scheme supporting entrepreneurship and innovation at INNOTECH'25, emphasizing accessible funding and skill development for informal sector workers.

### **Pradhan Mantri Fasal Bima Yojana (PMFBY)**

The **Pradhan Mantri Fasal Bima Yojana** (PMFBY) is an Government of India crop insurance scheme launched in 2016 to provide financial support to farmers suffering crop losses due to natural calamities, pests, and diseases. It offers coverage for localized risks and widespread calamities, with premiums subsidized by the government. The scheme uses technology such as satellite imagery and mobile apps for claim processing. It categorizes risks into localized and widespread categories. PMFBY has undergone revisions to include new risks like wild animal attacks and paddy inundation, aiming to close protection gaps for vulnerable farmers.

#### WHY IN NEWS?

PMFBY has been updated to include coverage for crop loss due to wild animal attacks and paddy inundation, effective from Kharif 2026, enhancing protection for farmers in flood-prone and wildlife conflict regions.

### **Pradhan Mantri Jan Dhan Yojana (PMJDY)**

Launched in August 2014, PMJDY is a national mission for financial inclusion in India, aiming to provide universal access to banking facilities. It offers no-frills bank accounts with zero balance requirements, overdraft facilities, and access to insurance and pension schemes. The scheme has enrolled over 56 crore beneficiaries by 2025, with a total balance exceeding ₹2.75 lakh crore. PMJDY accounts are held across public sector banks, Regional Rural Banks, and private banks, with public sector banks dominating deposits.



The scheme also emphasizes activation of dormant accounts and linking financial products for comprehensive inclusion.

#### WHY IN NEWS?

PMJDY accounts crossed ₹2.75 lakh crore in deposits as of October 2025, with a major push to activate inactive accounts through government efforts.

### **Pradhan Mantri Jan Vikas Karyakram (PMJVK)**

PMJVK is a central government scheme aimed at improving socio-economic infrastructure in minority-concentrated areas across India. It focuses on sectors like education, health, livelihood, and basic infrastructure. The program promotes inclusive development to reduce disparities and accelerate growth in marginalized communities. Launched as part of the Ministry of Minority Affairs' efforts, PMJVK integrates geo-tagging and real-time monitoring tools to enhance transparency and efficiency. It supports the establishment of State-level Project Management Units (PMUs) and mandates third-party audits for high-value projects to ensure accountability and quality in implementation.

#### WHY IN NEWS?

PMJVK was discussed at a National Review Meeting chaired by the Ministry of Minority Affairs to evaluate progress and improve implementation in minority regions.

### **Protection of Plant Varieties and Farmers Rights Act**

The **Protection of Plant Varieties and Farmers Rights Act, 2001** is an Indian law that provides intellectual property rights protection to plant breeders and farmers. It recognizes farmers' rights to save, use, exchange, and sell farm-saved seeds. The Act establishes a Protection of Plant Varieties and Farmers Rights Authority for registration and regulation. It balances breeders' rights with farmers' traditional practices, aiming to promote agricultural biodiversity and innovation. The Act aligns with the International Union for the Protection of New Varieties of Plants (UPOV) principles but includes specific provisions to protect farmers' interests, unlike many global intellectual property frameworks.

#### WHY IN NEWS?

The draft Seeds Bill links farmers' rights with this Act, raising concerns about compatibility and protection of traditional seed practices.

### **Protection of Women from Domestic Violence Act (2005)**

The Protection of Women from Domestic Violence Act (2005) is an Indian law aimed at protecting women from physical, emotional, verbal, sexual, and economic abuse within domestic settings. It provides women with legal remedies such as protection orders, residence rights, and monetary relief. The Act also enables the appointment of Protection Officers and service providers to assist victims. It is a civil law and does not require the abuser to be charged criminally for protection orders to be issued. The Act is for recognizing emotional and economic abuse alongside physical violence under its scope.

#### WHY IN NEWS?

The Act is referenced to show the gap between legal protections and cultural acceptance of domestic violence in India, as many women do not report abuse despite the law's



existence.

### **Rythanna Meekosam**

**Rythanna Meekosam** is a State-wide agricultural initiative launched to enhance **water security, demand-based farming, agri-technology adoption, and food processing**. It operates under a **Five-Point Formula** aimed at strengthening farmers' livelihoods. The program includes workshops at Farmer Service Centres and government support measures to mitigate financial risks. It emphasizes **modern farming techniques, mechanization, and drone usage** for precision spraying and pest control. The initiative also supports government procurement to stabilize prices in key markets like tobacco, mango, onion, and coconut. The government has allocated Rs 1,000 crore in 18 months for farmer welfare.

#### WHY IN NEWS?

The State government launched the Rythanna Meekosam initiative in Krishna district to promote sustainable agriculture and provide comprehensive support to farmers, including financial aid and technological interventions.

### **Sandiksha Unit**

The **Sandiksha unit** is a specialized sub-unit within the SSB, focused on training and welfare activities for personnel. It emphasizes skill development, physical fitness, and cultural education to enhance the operational readiness and morale of jawans (soldiers). The unit organizes regular workshops, sports events, and cultural programs to encourage camaraderie and discipline. Sandiksha also supports families of personnel through outreach programs and welfare initiatives. It plays a critical role in maintaining the human resource quality of the battalion by addressing the holistic needs of personnel, including mental health and professional growth.

#### WHY IN NEWS?

Members of the Sandiksha unit participated in the 48th Battalion's Raising Day celebrations, contributing to the event's cultural and welfare activities.

### **SATHI Portal**

The SATHI Portal is an online platform launched by the Indian Ministry of Agriculture and Farmers Welfare to integrate seed sector stakeholders. It provides access to various services such as seed certification, quality monitoring, and regulatory compliance. The portal aims to increase transparency, reduce delays in seed testing, and improve communication between farmers, seed producers, and government agencies. It supports data-driven decision-making and facilitates the distribution of climate-resilient and bio-fortified seed varieties. The platform is part of the government's digital initiatives to modernize agriculture and make seed technology more accessible to smallholder farmers.

#### WHY IN NEWS?

Union Minister Shivraj Singh Chouhan urged stakeholders to use the SATHI Portal to enhance seed quality management and reduce testing time during the Asian Seed Congress 2025.



## Stree Manoraksha

Stree Manoraksha is a project implemented by the Ministry of Women and Child Development in collaboration with the National Institute of Mental Health and Neuro Sciences (NIMHANS), Bengaluru. It provides basic and advanced psycho-social and mental health training to staff of One Stop Centres (OSCs) across India. The training equips personnel to handle mental health care needs of women facing violence and distress. The project aims to enhance the quality of psycho-social support and counselling services at OSCs, ensuring holistic care for survivors of gender-based violence.

### WHY IN NEWS?

Stree Manoraksha is noted for strengthening mental health support at One Stop Centres, part of India's integrated approach to assist women in distress.

## STRIVE Program

STRIVE (Strengthening Resistance to Violent Extremism) is an Government of India initiative launched in 2017 to counter radicalization and violent extremism in urban areas. It focuses on community engagement, youth empowerment, and capacity building to prevent recruitment into extremist groups. STRIVE operates through partnerships with local governments, civil society, and law enforcement. It emphasizes rehabilitation and reintegration of at-risk individuals. The program targets vulnerable urban pockets prone to radicalization rather than traditional conflict zones. STRIVE complements other counter-terrorism efforts by addressing root causes of extremism, including alienation and socio-economic disparities.

### WHY IN NEWS?

STRIVE was mentioned in the context of India's counter-terrorism strategy following revelations of homegrown terror networks and urban radicalization linked to recent attacks in 2025.

## Swachh Bharat Mission

The Swachh Bharat Mission (SBM), launched in 2014 by the Government of India, aims to improve sanitation and eliminate open defecation nationwide. It focuses on building toilets, promoting hygiene awareness, and enhancing waste management systems. The mission has two phases – SBM-Gramin (rural) and SBM-Urban. It involves multiple stakeholders, including government bodies, NGOs, and local communities. SBM claims achievements in toilet construction and behavioral change but faces challenges in sustainability and infrastructure maintenance. The mission has been credited with placing sanitation on the national agenda and encouraging community participation in cleanliness drives.

### WHY IN NEWS?

The article calls for strengthening the Swachh Bharat Mission's policies and implementation to achieve sustainable sanitation and cleanliness as part of India's development goals toward 2047.



## Swasth Nari, Sashakt Parivar Abhiyaan

The **Swasth Nari, Sashakt Parivar Abhiyaan (SNSPA)** is a nationwide health campaign launched in India from 17th September to 2nd October 2025. It targets women, adolescent girls, and children, focusing on preventive healthcare and nutrition. The campaign emphasized early detection of diseases like breast cancer, hypertension, and diabetes. It involved more than 20 government ministries, medical colleges, private organizations, and community platforms including Panchayati Raj representatives and Self Help Groups (SHGs). Over 19.7 lakh health camps were organized, with a footfall exceeding 11 crore across various health services and screenings. Digital health platforms played a major role in registrations and screenings.

### WHY IN NEWS?

SNSPA was recognized by Guinness World Records for the highest number of registrations and screenings on health platforms within specific timeframes, denoting India's large-scale health outreach efforts.

## Tasar Silk

Tasar silk is a type of wild silk primarily produced in India, especially by tribal communities. It is derived from the *Antheraea* moths and is known for its rich texture and natural gold sheen. Unlike mulberry silk, tasar silk is cultivated in tropical forests, making it an eco-friendly product. India produces two main varieties – Tropical Tasar and Oak Tasar. The weaving and dyeing techniques often feature traditional tribal motifs such as Warli and karvat prints. Over 9.76 million people across 52,000 villages in India are involved in silk-related occupations, with tasar silk contributing to tribal economies.

### WHY IN NEWS?

Tasar silk and related tribal silk arts were showcased at the 44th India International Trade Fair, denoting tribal artisans like Sachin Walke from the Gond community.

## Tea Tribes of Assam

The Tea Tribes are communities descended from tribal groups brought to Assam by the British in the 19th and early 20th centuries to work in tea plantations. They mainly belong to ethnic groups like Santhal, Munda, Oraon, and Ho. These tribes form the backbone of Assam's tea labor force, numbering over 12 lakh workers. They have distinct cultural identities, languages, and customs, often living in tea garden colonies. Historically marginalized, Tea Tribes face challenges including low wages, poor living conditions, and limited political representation. They have become an influential political constituency in Assam, especially ahead of elections.

### WHY IN NEWS?

The Tea Tribes' concerns over stagnant wages, rising costs, and climate hardships are expected to influence Assam's 2026 state elections, denoting their socio-economic importance.

## Teaching at the Right Level (TaRL)

Teaching at the Right Level (**TaRL**) is an educational approach developed by the NGO



Pratham focused on tailoring instruction to children's actual learning levels rather than their grade. It uses simple assessments to group students by competency and provides targeted remedial teaching to bridge gaps. TaRL has been implemented in various states of India and internationally, showing improvements in literacy and numeracy. The method counters traditional syllabus-driven teaching by emphasizing mastery of foundational concepts before progressing. TaRL's success has influenced government programs and policies, including the NIPUN Bharat Mission, by demonstrating scalable and cost-effective ways to improve foundational learning outcomes.

#### WHY IN NEWS?

TaRL is referenced for its research and field experience demonstrating the need for level-based instruction to address India's persistent numeracy gaps, influencing remedial interventions under NIPUN Bharat.

### Tele-MANAS

**Tele-MANAS** (Tele Mental Health Assistance and Networking Across States) is an Government of India initiative launched to provide tele-mental health services nationwide. It offers free, 24/7 counseling and psychiatric support through phone and online platforms to address mental health issues across urban and rural areas. Tele-MANAS aims to reduce stigma, improve accessibility, and integrate mental health into public health policy. It is part of India's broader mental health strategy to enhance emotional resilience and workplace well-being. The program leverages technology to overcome geographical and social barriers to mental health care.

#### WHY IN NEWS?

Tele-MANAS is brought into light in 2025 discussions on India's evolving mental health policies and their role in improving national happiness and well-being metrics.

### Trade Unions Act

The **Trade Unions Act, 1926** is an Indian law that regulates the registration, rights, and liabilities of trade unions. It provides legal protection to workers' organizations and facilitates collective bargaining. The Act defines a trade union as any combination of workers formed to regulate relations with employers. It grants immunity from civil and criminal liability for union activities like strikes if conducted legally. Despite amendments, the Act retains its focus on protecting workers' rights and promoting industrial peace. It contrasts with Chinese labor laws, as India legally empowers labor groups to influence workplace conditions and disputes.

#### WHY IN NEWS?

The Act is mentioned as a key factor in India's labor rights framework, influencing the country's manufacturing scale and labor-capital dynamics compared to China.

### Tribal Research Institute, University of Ladakh

The **Tribal Research Institute (TRI)** at the University of Ladakh is a specialized academic and research center focusing on the study and documentation of tribal cultures, traditions, and issues in Ladakh. It conducts ethnographic research, policy studies, and



community engagement programs related to the tribal populations of the region. Established in the early 2020s, the TRI collaborates with government bodies and NGOs to support tribal welfare and development. It plays a key role in organizing events like sports conclaves and cultural festivals to preserve tribal heritage. The institute also publishes research papers and policy recommendations to influence tribal affairs at local and national levels.

#### WHY IN NEWS?

The Tribal Research Institute, University of Ladakh, organized the first-ever Tribal Sports Conclave in Ladakh, supporting tribal athletes and cultural promotion.

### Unified Pension Scheme

The **Unified Pension Scheme (UPS)** introduced recently combines features of defined assured pension with minimum guaranteed payouts. It applies to central government employees who joined post-NPS introduction. UPS assures a minimum pension of Rs 10,000 for employees with at least 10 years of qualifying service and full assured payout after 25 years. It also provides family pension and minimum pension benefits for those not completing full service. UPS aims to address criticisms of NPS by offering more predictable retirement income while maintaining fiscal sustainability.

#### WHY IN NEWS?

The government announced the UPS as a revamped pension plan, which the Eighth Central Pay Commission will consider alongside other pension schemes.

### Universal Immunisation Programme (UIP)

The **Universal Immunisation Programme (UIP)** is India's flagship public health initiative launched in 1985 to provide free vaccines against 12 preventable diseases, including tuberculosis, polio, diphtheria, pertussis, tetanus, measles, and hepatitis B. It is one of the largest immunisation programmes globally, targeting over 26 million infants and 30 million pregnant women annually. UIP has contributed to reductions in infant mortality and morbidity from vaccine-preventable diseases. Despite its success in childhood immunisation, UIP does not currently include a comprehensive adult vaccination schedule, which remains a major gap in India's immunisation strategy.

#### WHY IN NEWS?

UIP's childhood immunisation success contrasts with India's low adult vaccine coverage, denoting the urgent need to expand immunisation beyond childhood as emphasized on World Immunization Day 2025.

### UNODC Femicide Report 2025

The **United Nations Office on Drugs and Crime (UNODC)** publishes an annual femicide report detailing intentional killings of women and girls worldwide. The 2025 report recorded 83,000 female victims, with **60% killed by intimate partners or family members**. It marks regional femicide rates, with Africa having the highest at **3 per 100,000 women**. The report emphasizes the need for improved data collection and legal frameworks to address femicide effectively. It also links digital violence escalation to



offline lethal outcomes. UNODC collaborates with UN Women to implement a **2022 statistical framework** for better classification of gender-related killings.

#### WHY IN NEWS?

The 2025 UNODC femicide report was released on the International Day for the Elimination of Violence against Women, presenting updated global femicide statistics and urging enhanced prevention strategies.

### **Vettaikaranpudur Canal Odayakulam WUA**

The **Vettaikaranpudur Canal Odayakulam Village Water User Association (WUA)** is located in Coimbatore, Tamil Nadu. It manages local irrigation and water distribution for agricultural purposes. WUAs like this play important role in decentralized water management, empowering farmers to maintain canal infrastructure and regulate water usage equitably. These associations are often formed under government schemes to promote participatory irrigation management. The Vettaikaranpudur WUA won the **first prize in the Best Water User Association category** at the 6th National Water Awards in 2024. They are recognized for efficient water conservation and community-based management practices.

#### WHY IN NEWS?

Vettaikaranpudur Canal Odayakulam WUA won first prize in the Best Water User Association category at the 6th National Water Awards 2024 for excellence in water management.

### **Village Child Development Centre (VCDC)**

Village Child Development Centres (VCDCs) are grassroots-level health monitoring units established in gram panchayats across Maharashtra, including Melghat. They focus on identifying and managing Severe Acute Malnutrition (SAM) cases among children. VCDCs provide nutritional support, monitor growth, and facilitate coordination between health workers and local authorities. These centres also aim to improve maternal and child healthcare by tracking health indicators and promoting early intervention. VCDCs are part of government strategies to decentralize healthcare delivery and improve outcomes in remote and tribal regions, but face challenges like inconsistent supplement delivery and poor interdepartmental coordination.

#### WHY IN NEWS?

VCDCs have been mentioned as part of Maharashtra's efforts to combat malnutrition in Melghat, amid criticism over inadequate healthcare delivery and infant mortality rates.

### **Vishaka Guidelines**

The **Vishaka Guidelines** were formulated by the Supreme Court of India in 1997 to address sexual harassment at the workplace. They were established after a public interest litigation filed following the gangrape of Bhanwari Devi, a social worker who opposed child marriage. These guidelines defined sexual harassment, laid down preventive measures, complaint mechanisms, and emphasized employer responsibility. They functioned as the primary legal framework until the enactment of the Sexual Harassment



of Women at Workplace (Prevention, Prohibition and Redressal) Act in 2013. The Vishaka case was the first judicial recognition of workplace sexual harassment in India.

#### WHY IN NEWS?

The Vishaka Guidelines are mentioned in the context of evolving legal protections for women against sexual violence, following landmark cases and amendments.

### **Water Aerodromes**

Water aerodromes are designated areas on water bodies used for the landing and takeoff of seaplanes and amphibious aircraft. India currently has 2 water aerodromes operational under the UDAN scheme. These aerodromes facilitate air connectivity in remote and difficult-to-access regions, especially those with abundant lakes and rivers. Development of water aerodromes includes infrastructure like floating jetties, passenger terminals, and maintenance facilities. They are part of the expanded UDAN framework to boost regional connectivity, particularly in hilly and North-Eastern districts where conventional airport construction is challenging due to terrain and land availability.

#### WHY IN NEWS?

Water aerodromes are included in the modified UDAN scheme's proposal to support smaller airports and alternative air connectivity modes, enhancing access to remote and underserved areas.

### **Watershed Mahotsav**

Watershed Mahotsav is a nationwide celebration launched to increase awareness and public participation in watershed development projects across India. It includes activities such as awarding winners of the Watershed Jan Bhagidari Cup, Lokarpan (inauguration) of completed works, Bhumi Pujan (land worship) for new projects, Shramdan (voluntary labor), and plantation drives. The festival is conducted at state and watershed project levels to promote community involvement or "Jan-Bhagidari." It aims to encourage sustainable land and water management practices by engaging local stakeholders in conservation and development efforts under government schemes.

#### WHY IN NEWS?

Watershed Mahotsav was launched at the National Watershed Conference in Guntur, Andhra Pradesh, in November 2025 to promote public participation and awareness in watershed development projects nationwide.

### **Women Self-Help Groups (SHGs)**

Women Self-Help Groups (SHGs) are grassroots community-based organizations primarily in rural India, formed to promote savings, credit, and income-generating activities. Originating in the 1980s, SHGs empower women through collective action and financial inclusion. They often receive government and NGO support for skill development and market access. SHGs have been instrumental in promoting handmade crafts, agriculture, and micro-enterprises. In the North Eastern states, SHGs play a key role in preserving indigenous crafts and providing livelihoods. They contribute to women's socio-economic status and local economies by facilitating access to credit and markets.



## WHY IN NEWS?

Women Self-Help Groups from the North East will sell handmade products at stalls during the Telangana-North East Connect festival's first phase at Hitex Exhibition Centre in November 2025.

**Defence****ADITI System**

ADITI is an Indian defense research platform focused on advanced technology development, particularly in artificial intelligence, autonomous systems, and cyber warfare. It serves as a testbed for integrating AI-driven solutions into military applications, including unmanned vehicles, decision support systems, and network security. ADITI collaborates with academic institutions, defense labs, and industry partners to accelerate technology maturation. The platform aims to reduce dependence on foreign technologies and enhance operational capabilities by embedding AI and autonomy into defense systems, aligning with India's broader goals of self-reliance and technological sovereignty.

## WHY IN NEWS?

ADITI was brought into light by the Army chief as a critical element of the Anusandhan pillar, driving innovation toward enterprise-level impact in the Army's future readiness roadmap.

**Agni-V Missile**

The Agni-V is an Indian intercontinental ballistic missile (ICBM) with a range exceeding 5,000 kilometers. It is capable of delivering nuclear warheads to targets across Asia and parts of Europe. First tested in 2012, it represents advancement in India's strategic deterrent. The missile uses solid fuel, enhancing mobility and reducing launch preparation time. It is road and rail-mobile, improving survivability. Agni-V is designed to carry multiple independently targetable reentry vehicles (MIRVs) in future upgrades. Its development reflects India's focus on credible minimum deterrence and strategic autonomy. The missile's deployment enhances India's second-strike capability.

## WHY IN NEWS?

Agni-V is operational and relevant to India's nuclear deterrence strategy amid debates on nuclear testing and modernization.

**Air Cushion Vehicles (ACVs)**

Air Cushion Vehicles (ACVs), also known as hovercrafts, operate on a cushion of air, allowing them to traverse water, mudflats, and land seamlessly. The Indian Coast Guard uses ACVs for rapid response in shallow or difficult-to-navigate coastal zones where conventional boats struggle. ACVs can reach speeds of up to 50 knots and carry personnel or equipment efficiently. Their amphibious nature makes them ideal for search and rescue, patrolling, and interdiction missions in estuaries and marshy coastal areas. They reduce response time during emergencies and enhance operational flexibility for maritime security forces.

## WHY IN NEWS?

ACVs were prominently deployed during the Sagar Kavach-02/25 exercise to demonstrate



their utility in coastal security operations along Maharashtra and Goa.

### **Akhand Prahaar Exercise**

Akhand Prahaar is a tri-services military exercise conducted by the Indian Army's Southern Command, focusing on integrated land-sea-air operations and jointness. It tests full-spectrum combat readiness, including mechanized infantry maneuvers, special heliborne operations, and coordinated attack helicopter missions. The exercise incorporates next-generation indigenous technologies such as drones, counter-drone systems, and electronic warfare grids. It serves as a real-time testbed for evaluating new military technologies under realistic battlefield conditions. Akhand Prahaar puts stress on India's strategic emphasis on atmanirbharta (self-reliance) in defense and operational excellence through multi-domain, high-tempo warfare preparedness.

#### WHY IN NEWS?

Akhand Prahaar recently concluded in Rajasthan, validating the operational capabilities of the Konark Corps and showcasing joint force integration under the larger Trishul exercise framework.

### **Bharat Dynamics Limited**

Bharat Dynamics Limited (BDL) is an Indian public sector enterprise established in 1970, specializing in the production of missile systems and allied defense equipment. It manufactures a variety of missile types, including anti-tank guided missiles, surface-to-air missiles, and underwater weapons. BDL plays important role in India's defense indigenization efforts and has multiple manufacturing units across the country. It collaborates with the Defence Research and Development Organisation (DRDO) for technology development. BDL is known for its strict quality control and has expanded its portfolio to include export-ready missile systems.

#### WHY IN NEWS?

BDL secured a major contract to supply INVAR anti-tank missiles to the Indian Army, reflecting its ongoing role in strengthening indigenous defense production.

### **Chanakya Defence Dialogue**

The Chanakya Defence Dialogue (CDD) is a biennial event initiated by India's Ministry of Defence to encourage strategic discussions on defence reforms, technology, and security. Named after the ancient Indian strategist Chanakya, it aims to integrate civil and military perspectives. The dialogue involves national and international experts and serves as a platform to shape India's defence policies. The event focuses on contemporary security challenges and future preparedness, aligning with India's vision of becoming a major global power by 2047. The 3rd edition, CDD-2025, emphasizes reforms under the theme Reform to Transform – Sashakt, Surakshit aur Viksit Bharat.

#### WHY IN NEWS?

The Ministry of Defence is organizing the 3rd edition of the Chanakya Defence Dialogue in New Delhi from November 27, 2025, focusing on defence reforms and India's security priorities ahead of 2047.



## Exercise Malabar

Exercise Malabar is a multilateral naval exercise initially started in 1992 between India and the United States. Japan joined as a permanent member in 2015, and Australia has participated intermittently. The exercise focuses on enhancing interoperability and maritime security in the Indo-Pacific region. It includes phases such as harbour meetings for planning and communication alignment, followed by sea phases involving complex naval drills like anti-submarine warfare, air defense, and fleet maneuvers. The exercise promotes joint operational readiness and encourages strategic cooperation among participating navies.

### WHY IN NEWS?

Exercise Malabar-2025 is currently underway at Guam, involving India, the US, Japan, and Australia, emphasizing collective regional security efforts.

## Exercise MILAN

Exercise MILAN is a multilateral naval exercise initiated in 1995 at Port Blair with four navies. It has grown into a major international maritime exercise involving over 40 navies by 2024. The exercise includes Sea and Harbour Phases focusing on **interoperability**, maritime domain awareness, **anti-submarine warfare**, air defense, and search-and-rescue operations. MILAN enhances cooperation, builds trust, and improves operational coordination among participating navies. The exercise also features an International City Parade, showcasing maritime diplomacy to the public and promoting cultural exchange.

### WHY IN NEWS?

Exercise MILAN 2026 will be held in Visakhapatnam alongside other major maritime events, marking India's role in regional naval collaboration.

## Exercise MITRA SHAKTI

Exercise MITRA SHAKTI is an annual bilateral military training exercise between India and Sri Lanka, initiated in 2013. It focuses on counter-terrorism and counter-insurgency operations under UN Chapter VII mandates. The exercise includes joint tactical drills such as raids, heliborne operations, and casualty evacuation. It promotes interoperability between the Indian Army and Sri Lankan Army, involving infantry, air force, and specialized units. The RAJPUT Regiment (India) and GAJABA Regiment (Sri Lanka) are regular participants. The exercise also integrates Army Martial Arts Routine (AMAR), combat reflex shooting, yoga, and the use of drones and counter-UAS technology.

### WHY IN NEWS?

The Eleventh edition of Exercise MITRA SHAKTI commenced in November 2025 at Foreign Training Node, Belagavi, Karnataka, involving 170 Indian and 135 Sri Lankan personnel, aiming to enhance joint counter-terrorism capabilities and interoperability.

## Exercise Suryakiran

Exercise Suryakiran is an annual bilateral military exercise between India and Nepal, initiated to enhance joint operational capabilities. It focuses on jungle warfare, counter-terrorism, and mountain operations. The exercise alternates locations between the two



countries and includes training in aviation, medical preparedness, and environmental conservation. It promotes interoperability through niche technology integration and sharing best practices. The Indian Army contingent typically comprises over 300 personnel. The exercise strengthens defence cooperation, camaraderie, and mutual trust between the Indian and Nepalese armies and reflects their commitment to regional peace and security.

#### WHY IN NEWS?

The 19th edition of Exercise Suryakiran is scheduled from November 25 to December 8, 2025, in Pithoragarh, Uttarakhand, focusing on jungle warfare and counter-terrorism in mountainous terrain.

### Hanumangadh Arms Market

Hanumangadh is a town in Rajasthan, known for its proximity to the India-Pakistan border. It has been identified as a hub for illegal arms trading, with weapons often smuggled across the border or sourced locally. The region's porous borders and rugged terrain facilitate covert arms movement. Various militant and criminal groups exploit this area for procurement and distribution of firearms. Law enforcement agencies have conducted multiple operations to curb illegal arms trafficking here. The town's strategic location makes it a critical node in the regional arms smuggling network.

#### WHY IN NEWS?

Weapons used by the arrested terror syndicate were procured from Hanumangadh, Rajasthan, indicating its role in supplying arms for terrorist activities.

### iDEX Platform

The Innovation for Defence Excellence (iDEX) is an Government of India initiative launched to encourage innovation and technology development in the defense sector by engaging startups, innovators, and academia. It operates under the Defence Innovation Organisation and aims to provide funding, mentorship, and market access to defense-related projects. iDEX focuses on accelerating indigenous development in areas such as artificial intelligence, cyber security, quantum technologies, and autonomous systems. Since its inception, it has supported over 300 startups and innovators, facilitating faster adoption of cutting-edge technologies within the Indian Armed Forces.

#### WHY IN NEWS?

General Dwivedi emphasized iDEX as a key platform for transitioning innovation from experimental phases to enterprise-level impact in India's military modernization efforts.

### INS Ikshak

INS Ikshak is the third ship of the SVL class, commissioned in 2025 at the Naval Base in Kochi. It is the first SVL vessel designed with **dedicated women's accommodation**, promoting gender inclusivity in the Indian Navy. The ship can conduct hydrographic surveys, humanitarian assistance, disaster relief, and medical support operations. It features state-of-the-art navigation and communication systems, enabling multi-role functionality. INS Ikshak enhances India's capacity to map coastal and offshore waters



accurately and respond to emergencies at sea, reflecting evolving naval priorities towards inclusivity and versatility in operational roles.

WHY IN NEWS?

INS Ikshak's commissioning ceremony was presided over by the Chief of Naval Staff, emphasizing its operational and social significance.

### INS Savitri

INS Savitri is an **Offshore Patrol Vessel (OPV)** commissioned into the Indian Navy's Eastern Fleet. It is designed for long-range maritime surveillance, anti-piracy, and search-and-rescue operations. The vessel is equipped with modern sensors, a helicopter deck, and advanced communication systems to enhance maritime domain awareness. Named after the mythological character Savitri, the ship symbolizes vigilance and protection. It plays a critical role in patrolling India's Exclusive Economic Zone (EEZ) and participating in joint naval exercises with friendly countries. The OPV class to which INS Savitri belongs is known for versatility in coastal and offshore security missions.

WHY IN NEWS?

INS Savitri arrived at Port Louis, Mauritius, for joint EEZ surveillance and professional exchanges with the Mauritius National Coast Guard, enhancing maritime security cooperation in the South West Indian Ocean.

### INS Vikrant (IAC-1)

INS Vikrant (IAC-1) is India's first indigenously built aircraft carrier, commissioned in 2022. It displaces around **40,000 tons** and can carry up to 30 aircraft, including MiG-29K fighters and helicopters. The carrier features a short take-off but arrested recovery (STOBAR) system and was constructed at Cochin Shipyard Limited. INS Vikrant marks milestone in India's naval shipbuilding, reducing dependence on foreign carriers. It is equipped with advanced radar, electronic warfare systems, and modern propulsion. The carrier supports power projection in the Indian Ocean Region and enhances India's maritime security capabilities.

WHY IN NEWS?

INS Vikrant is participating in the IFR 2025 in Colombo, marking its first overseas deployment and showcasing India's indigenous naval capabilities.

### Javelin Missile

The Javelin missile is a man-portable, fire-and-forget Anti-Tank Guided Missile (ATGM) developed by Raytheon and Lockheed Martin in the USA. It has a **94% hit probability** and can engage targets up to **2500 meters** with an optical or thermal sight, extendable to **4750 meters** with a different launcher. It features a **top-down attack mode** targeting the weaker turret armor of tanks, using a tandem charge to defeat reactive armor. The missile uses an **infrared imaging seeker** for guidance and a soft launch system to reduce backblast, allowing firing from confined spaces. It is effective against tanks, helicopters, bunkers, and other targets.

WHY IN NEWS?

India recently signed a deal to procure 100 Javelin missiles and 25 launch units from the



USA, enhancing its anti-tank capabilities.

### **Konark Corps**

The **Konark Corps** is a strike corps of the Indian Army, headquartered in Rajasthan. It specializes in desert warfare and rapid offensive operations along the western border with Pakistan. Formed to enhance India's strategic posture in the desert sector, it integrates mechanized infantry, armored units, and aviation assets. The corps includes the Rudra Brigade, known for specialized land operations and heliborne assaults. It has evolved into a modern, networked force capable of multi-domain operations, emphasizing agility, technology absorption, and jointness with the Indian Air Force and other services for combined arms warfare.

#### WHY IN NEWS?

The Konark Corps' combat readiness was validated during the Akhand Prahaar exercise, a large-scale tri-services drill conducted by Southern Command in the Rajasthan desert sector.

### **Mechuka**

Mechuka is a remote town in Arunachal Pradesh, located near the Indo-China border at an altitude of around 6,000 feet. It is part of the West Siang district and serves as a strategic military outpost. The area is known for its rugged terrain, dense forests, and challenging weather conditions, making it ideal for high-altitude military exercises. Mechuka hosts an Advanced Landing Ground (ALG) used by the Indian Air Force for logistics and rapid deployment. The region is inhabited by the Memba tribe, who practice Tibetan Buddhism and maintain unique cultural traditions distinct from other parts of Arunachal Pradesh.

#### WHY IN NEWS?

Mechuka is the location for the upcoming tri-service military exercise 'Poorvi Prachand Prahar' aimed at enhancing joint operational capabilities in high-altitude terrain.

### **Mudh-Nyoma Airbase**

The Mudh-Nyoma airbase is located at an altitude of **13,700 feet** in eastern Ladakh, approximately **23 km from the Line of Actual Control (LAC)** with China. It features a **2.7-km runway** capable of handling fighter jets, transport aircraft, and helicopters. The ₹218-crore facility includes hangars, an air traffic control building, and hard-surfaced parking areas. The airbase was reactivated and upgraded by the Border Roads Organisation (BRO), with a team of women officers playing a key role. It supports rapid deployment and logistics for troops near the sensitive border region. The base enhances India's military infrastructure in a strategically vital area.

#### WHY IN NEWS?

The Mudh-Nyoma airbase was inaugurated in November 2025 by Air Chief Marshal AP Singh, marking boost to India's frontier infrastructure amid ongoing border sensitivities with China.

### **Nag Missile**

The Nag missile is an indigenous Indian third-generation, fire-and-forget Anti-Tank Guided



Missile developed by DRDO. It is man-portable and designed for all-weather operations. The missile has successfully completed user trials and is set for induction into Indian forces. It uses an infrared seeker for target acquisition and has a tandem warhead capable of defeating reactive armor. The Nag missile is intended to provide a domestic alternative to foreign ATGMs like the Javelin. It can engage armored vehicles and bunkers and is adaptable for various terrains, including mountains and deserts. Production and deployment reflect India's push for self-reliant defense technology.

#### WHY IN NEWS?

The Nag missile is mentioned as India's indigenous alternative to the Javelin missile amid ongoing modernization of anti-tank weaponry.

#### **National Security Guards (NSG) Manesar HQ**

The National Security Guards (NSG) headquarters is located in Manesar, Haryana, established in 1984 following the assassination of Indira Gandhi. It serves as the central command for India's elite counter-terrorism force. The NSG is trained for hostage rescue, bomb disposal, and counter-terror operations. Manesar's facility includes specialized training grounds, simulation centers, and equipment depots. The NSG was criticized during the 2008 Mumbai attacks for delayed deployment due to communication lapses. Post-26/11, the NSG expanded with regional hubs to reduce response times. The Manesar base remains the nerve center for planning and coordinating national-level counter-terrorism missions.

#### WHY IN NEWS?

The NSG Manesar headquarters is referenced regarding the delayed response during the 26/11 Mumbai terror attacks and subsequent improvements in deployment protocols.

#### **Naval Science &&&&&& Technological Laboratory (NSTL)**

NSTL, located in Visakhapatnam, is a premier DRDO laboratory specializing in naval research and development. It focuses on underwater weapons, sensors, and autonomous systems. NSTL has pioneered technologies such as torpedoes, underwater communication, and mine countermeasure systems. It operates advanced test facilities including underwater ranges and simulation environments. NSTL collaborates with Indian industry and academic institutions to transition technologies into operational platforms. It has played an important role in indigenizing naval defense technologies and enhancing India's maritime security capabilities through innovations like MP-AUVs.

#### WHY IN NEWS?

NSTL conducted the successful field trials of the newly developed MP-AUVs, validating system parameters for future production and deployment in naval operations.

#### **Operation Parakram**

Operation Parakram was the Indian Army's large-scale mobilization along the Pakistan border following the December 2001 Indian Parliament attack. It involved massing troops and strike formations but took nearly a month to mobilize fully. The delay allowed Pakistan to reinforce defenses and drew U.S. diplomatic pressure on India to avoid a



cross-border offensive. The operation exposed the limitations of India's conventional war readiness and directly influenced the development of the Cold Start doctrine, aimed at rapid mobilization and limited offensive strikes under nuclear threat conditions.

#### WHY IN NEWS?

Operation Parakram's slow mobilization telld the need for faster, more integrated strike capabilities like the Rudra brigade, which was recently tested in the Trishul exercise to enhance rapid offensive operations.

### **Operation Sindoor**

Operation Sindoor was a military engagement involving cross-border shelling and conflict between Indian and Pakistani forces along the Jammu & Kashmir region. It led to civilian casualties and displacement, particularly in border districts like Poonch and Mendhar. The operation is notable for its impact on local populations, including loss of life and infrastructure damage. It brought into light the ongoing security challenges in the region and prompted enhanced military and humanitarian responses. The name "Sindoor" symbolizes the operation's intensity and the emotional scars borne by affected communities.

#### WHY IN NEWS?

Operation Sindoor's aftermath was referenced by a beneficiary, Surinder Singh, who lost neighbors in the shelling and later received eye treatment at the camp.

### **Pokhran-II Nuclear Tests**

Pokhran-II refers to a series of five nuclear bomb test explosions conducted by India in May 1998 at the Pokhran Test Range in Rajasthan. These tests marked India's declaration as a nuclear weapons state. The tests included both fission and fusion devices, demonstrating advanced nuclear capabilities. They triggered widespread international sanctions but also altered India's strategic posture. The tests followed the first nuclear test (Smiling Buddha) in 1974 and were a response to regional security dynamics. India's nuclear doctrine post-Pokhran-II emphasized credible minimum deterrence and a no-first-use policy.

#### WHY IN NEWS?

The book traces the evolution of India's nuclear policy, denoting parliamentary debates and the strategic implications of the Pokhran-II tests in shaping foreign policy.

### **Rudra Brigade**

The Rudra Brigade is a specialized formation within the Konark Corps, focused on executing land operations through rapid heliborne assaults and special operations. It combines infantry, aviation, and mechanized elements to conduct swift strikes and deep penetration missions in desert and semi-arid terrains. The brigade integrates closely with Army Aviation's attack helicopter units and special forces for precision targeting and mobility. It plays a critical role in enhancing the Indian Army's operational agility and responsiveness in multi-domain battle environments, contributing to the success of exercises like Akhand Prahaar.



## WHY IN NEWS?

The Rudra Brigade participated in the Akhand Prahaar exercise, demonstrating its capability in special heliborne operations and coordinated attack helicopter missions.

**Sagar Kavach Exercise**

The **Coastal Security Exercise Sagar Kavach** is a biennial maritime security drill conducted by the Indian Coast Guard to test and enhance coastal defense mechanisms. It involves multiple agencies including the Navy, Coast Guard, Marine Police, Customs, and state maritime boards. The exercise focuses on countering threats from Anti-National Elements (ANEs) targeting coastal infrastructure. It integrates sea, air, and shore assets for multi-layered security. The 2025 edition, Sagar Kavach-02/25, mobilized over 6,000 personnel and 115 sea and air assets, emphasizing inter-agency coordination and operational readiness across Maharashtra and Goa coastlines.

## WHY IN NEWS?

Sagar Kavach-02/25 was recently conducted to test and improve coastal security readiness along Maharashtra and Goa, involving extensive inter-agency coordination and deployment of diverse maritime and aerial assets.

**Shivalik-Class Frigates**

The Shivalik-class frigates are the first stealth warships built by India, commissioned between 2010 and 2012. These frigates incorporate advanced stealth technology, including reduced radar, infrared, and acoustic signatures. They are equipped with BrahMos supersonic cruise missiles, Barak surface-to-air missiles, and torpedo launchers. The class features a combined diesel or gas (CODOG) propulsion system, allowing high speed and fuel efficiency. Designed for multi-role operations, they can perform anti-aircraft, anti-submarine, and anti-surface warfare. The class was developed under Project 17 and marks step in India's indigenous warship construction capabilities.

## WHY IN NEWS?

INS Sahyadri, a Shivalik-class frigate, is active in Exercise Malabar-2025, showcasing India's indigenous naval technology and operational strength.

**Sikh Regiment**

The **Sikh Regiment** is one of the oldest and most decorated infantry regiments of the Indian Army, established in 1846. Known for its distinct turban and martial traditions, it has participated in major conflicts including both World Wars, the Indo-Pak wars, and UN peacekeeping missions. The regiment has a unique regimental center in Ramgarh, Jharkhand, and recruits primarily from the Sikh community. It is renowned for its bravery, discipline, and esprit de corps. The Sikh Regiment has earned numerous battle honors and gallantry awards, reflecting its role in Indian military history.

## WHY IN NEWS?

The Sikh Regiment represented the Indian Army contingent in the AJEYA WARRIOR-25 exercise held in Rajasthan, focusing on counter-terrorism operations alongside British forces.



## Southern Command Signals

Southern Command Signals is a specialized unit within the Indian Army responsible for planning, deploying, and maintaining secure communication networks in the Southern Command area of operations. It manages critical optical fiber infrastructure and provides communication support to military and strategic projects. The unit is skilled in integrating advanced technologies such as quantum communication systems into existing military networks. Southern Command Signals played a key role in enabling selective access to the fiber network in the Rajasthan sector for the QKD test-bed, ensuring secure and reliable data transmission over long distances. It collaborates closely with defense research agencies and technology startups.

### WHY IN NEWS?

Southern Command Signals engineered and managed the optical fiber network infrastructure used in the 500 km quantum key distribution demonstration, supporting India's quantum-secure communication efforts.

## Survey Vessel (Large) Class

The Survey Vessel (Large) class comprises advanced hydrographic ships designed for detailed coastal and deep-water surveys. Each vessel is approximately **110 meters** long with a displacement of **3,300 tonnes** and a crew complement of **231**. They are equipped with high-resolution multi-beam echo sounders, Autonomous Underwater Vehicles (AUVs), Remotely Operated Vehicles (ROVs), and Survey Motor Boats (SMBs). These ships conduct surveys of ports, harbors, navigational routes, and India's Exclusive Economic Zone (EEZ). They also perform limited search and rescue, ocean research, and casualty holding roles. The class supports India's maritime domain awareness and safety.

### WHY IN NEWS?

The Indian Navy is commissioning Ikshak, the third vessel of this class, enhancing hydrographic survey capabilities and maritime safety, marking step in indigenous naval infrastructure development.

## Tri-Service Networked Operations Centres

Networked Operations Centres (NOCs) are integrated command hubs that connect land, air, and maritime forces through real-time data sharing and communication systems. They enable coordinated decision-making and rapid response by fusing intelligence, surveillance, and reconnaissance (ISR) inputs. These centers leverage advanced software for situational awareness and employ secure communication links resistant to electronic warfare. NOCs support joint operations by synchronizing special forces, unmanned systems, and precision strike assets. Their development is part of modern military doctrines emphasizing multi-domain operations and digital battlefield management to enhance operational agility and effectiveness in complex environments.

### WHY IN NEWS?

NOCs will play a critical role in coordinating the tri-service components during the 'Poorvi Prachand Prahar' exercise in Arunachal Pradesh.



## Tri-Shakti Corps

The **Tri-Shakti Corps** is an Indian Army corps responsible for guarding the state of Sikkim and the Siliguri Corridor. It is equipped with advanced defensive assets, including Rafale fighter jets stationed at Hashimara, BrahMos supersonic cruise missiles, and modern air-defense systems. The corps plays a critical role in securing the northeastern frontier against potential threats from China and other regional adversaries. It conducts regular exercises and maintains high operational readiness. The name “Tri-Shakti” signifies the three powers of the army – offensive, defensive, and logistical capabilities, reflecting the corps’ comprehensive combat role.

### WHY IN NEWS?

The Tri-Shakti Corps is brought into light due to increased military activity in the northeast, including new garrisons and joint exercises, to strengthen India’s defense posture near the China and Bangladesh borders.

## Tulung La Incident

The **Tulung La Incident** occurred in 1975 as a military clash between Indian and Chinese forces near the Tulung La pass in Arunachal Pradesh. It was one of the post-1962 war confrontations, involving artillery exchanges and casualties on both sides. The incident told the volatility of the border region and the unresolved nature of the Sino-Indian boundary dispute. It led to heightened military alertness and ongoing patrol confrontations. Tulung La remains a sensitive area for both countries, symbolizing the persistent friction along the disputed border.

### WHY IN NEWS?

The Tulung La Incident is recalled in the context of ongoing border tensions and recent provocations by China related to Arunachal Pradesh.

## Twin Engine Deck-Based Fighter (TEDBF)

The **Twin Engine Deck-Based Fighter (TEDBF)** is an indigenous Indian naval fighter aircraft project aimed at replacing the MiG-29K fleet. It builds on DRDO’s Naval Light Combat Aircraft experience and is designed for carrier operations with twin engines for enhanced safety and performance. Intended to be a fifth-generation capable aircraft, TEDBF features advanced avionics, stealth characteristics, and compatibility with ski-jump and catapult launches. The program was announced with an induction target around 2035 but remains pending formal project approval. TEDBF is crucial for India’s carrier air wing modernization and reducing dependency on foreign suppliers.

### WHY IN NEWS?

TEDBF development is brought into light as a critical step for India’s naval aviation future amid fighter shortages on its carriers and delayed foreign acquisitions.

## Uri Hydro Power Plant

The Uri Hydro Power Plant is a **major hydroelectric facility** located in the Uri region of Jammu and Kashmir. It has an installed capacity of approximately 240 megawatts and is crucial for supplying electricity to the northern grid. The plant operates on the Jhelum



River and is strategically important due to its proximity to the Line of Control (LoC) with Pakistan. Security concerns have led to increased protection measures, including deployment of CISF personnel. The plant supports regional development and energy security in a geopolitically sensitive area.

#### WHY IN NEWS?

The Uri Hydro Power Plant was the target of a foiled terrorist attack in 2024, brought into light by Operation Sindoor, underscoring its strategic and security significance.

### **US-India Major Defence Partnership Framework (2025)**

The **US-India Major Defence Partnership Framework (2025)** is a strategic agreement signed to guide bilateral defence cooperation for the next decade. It aims to unify policy direction across military exercises, intelligence sharing, technology transfer, and defence industry collaboration. The framework emphasizes a free, open, and rules-based Indo-Pacific region, enhancing interoperability and joint capabilities. It builds upon prior agreements, expanding cooperation to emerging technologies and regional security challenges. This framework is designed to institutionalize the partnership, promoting sustained engagement and strategic convergence between the two democracies.

#### WHY IN NEWS?

The framework was signed during the 12th ADMM-Plus meeting, symbolizing a new era in US-India defence relations and regional stability efforts.

### **Awards, Honours, Personalities, Books, Sports etc.**

#### **Aspire Zone**

Aspire Zone, also known as Doha Sports City, is a 250-hectare sports complex in Qatar, opened in 2003. It includes the Khalifa International Stadium, Aspire Academy for sports training, and Villaggio Mall. Aspire Zone has hosted major events like the 2011 World Athletics Championships and serves as Qatar's hub for athlete development and sports science. It features advanced facilities for football, athletics, swimming, and cycling. The zone aims to promote sports excellence and healthy lifestyles in the region. It is part of Qatar's national vision to boost sports tourism and international sporting prestige.

#### WHY IN NEWS?

Indian delegation leader Dr. Mandaviya visited Aspire Zone during the WSSD-2 summit in Doha, 2025, to gain vital information about sports infrastructure development.

#### **Open Masters Games Abu Dhabi 2026**

The Open Masters Games Abu Dhabi 2026 is a multi-sport event held from 6 to 15 February 2026. It features 33 sports across more than 20 venues in Abu Dhabi. The event is open to athletes aged 30 and above, with no prior experience required, promoting inclusivity. Over 25,000 participants from around the world are expected. The Games emphasize community engagement, healthy living, and active lifestyles. It is the region's largest multi-sport event for masters athletes, organized under the leadership of Sheikh Theyab bin Mohamed bin Zayed Al Nahyan.

#### WHY IN NEWS?

The Open Masters Games Abu Dhabi 2026 is approaching, with the Walk to Mars



campaign as a preparatory national fitness initiative tied to the Games.