

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



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## Polity & Governance

### B Sector (Assam-Nagaland Border)

B Sector refers to a specific, disputed segment of the Assam-Nagaland inter-state border. The border dispute originated in the 1960s over territorial claims between Assam and Nagaland, leading to multiple violent clashes. The B Sector is strategically important due to its location and mixed population, including migrant communities. It has seen repeated incidents of violence, including arson, shootings, and grenade attacks. The area remains under heightened security due to frequent tensions. Local governance and policing in B Sector are complicated by overlapping claims and jurisdictional ambiguities between Assam and Nagaland authorities.

#### WHY IN NEWS?

The B Sector of the Assam-Nagaland border was the site of the October 2, 2025 attack where armed miscreants set fire to houses, intensifying the ongoing border dispute and violence in the region.

### Board of Peace

The **Board of Peace** is an international transitional governing body proposed to oversee Gaza's reconstruction and governance after conflict resolution. It will supervise a technocratic, apolitical Palestinian committee managing Gaza's public services. The board will be chaired by Donald Trump and include former UK Prime Minister Tony Blair among other global leaders. It aims to ensure transparency, stability, and international cooperation in Gaza's rebuilding process. The Board's formation represents a novel governance model combining local expertise with international oversight to facilitate peace and development.

#### WHY IN NEWS?

The Board of Peace is central to the governance structure in Trump's Gaza peace proposal, tasked with overseeing reconstruction and administration in Gaza under international supervision.

### Central Armed Police Forces (CAPFs)

The **Central Armed Police Forces (CAPFs)** are a group of paramilitary forces under India's Ministry of Home Affairs. They include the Border Security Force (BSF), Central Reserve Police Force (CRPF), Indo-Tibetan Border Police (ITBP), Central Industrial Security Force (CISF), and Sashastra Seema Bal (SSB). CAPFs are responsible for internal security, border guarding, counter-insurgency, and maintaining public order. They often coordinate with intelligence agencies and local police to ensure national stability. CAPFs also actively participate in community engagement activities, including those held during Police Commemoration Week, such as rallies, blood donation camps, and educational competitions.

#### WHY IN NEWS?

CAPFs organize various commemorative events during Police Commemoration Week, honoring fallen police personnel and promoting public cooperation with law enforcement.



## CLAMP Portal

The **Coal Land Acquisition, Management, and Payment (CLAMP) Portal** is a digital platform designed to streamline land acquisition, compensation, and rehabilitation processes for coal mining projects in India. It acts as a centralized digital repository for land records and integrates workflows from land details submission to compensation payment. The portal enhances transparency, accountability, and reduces procedural delays by enabling inter-agency coordination among coal Public Sector Undertakings (PSUs) and government bodies. It supports equitable and timely compensation to affected landowners and facilitates efficient management of rehabilitation and resettlement activities, aligning with policy reforms for citizen-centric governance in the coal sector.

### WHY IN NEWS?

Launched alongside the Koyla Shakti Dashboard in October 2025, the CLAMP Portal aims to improve land acquisition processes critical for coal mining expansion and regulatory compliance.

## Cognisable Offences

Cognisable offences are crimes where the police have the authority to register a case and start an investigation without prior approval from a magistrate. These include serious crimes such as murder, rape, and robbery. The term is legally defined under the Indian Criminal Procedure Code. Cognisable offences differ from non-cognisable offences, which require magistrate permission before investigation. The National Crime Records Bureau (NCRB) compiles data on cognisable offences annually to assess crime trends. The rate is often expressed as the number of offences per lakh (100,000) population to standardize comparisons across regions and cities.

### WHY IN NEWS?

The NCRB 2023 report brought into light Kolkata as having the lowest rate of cognisable offences per lakh people among major Indian cities, emphasizing its status as the safest city for the fourth consecutive year.

## Directorate of Revenue Intelligence (DRI)

The **Directorate of Revenue Intelligence (DRI)** is India's premier anti-smuggling agency under the Central Board of Indirect Taxes and Customs. Established in 1957, it specializes in combating smuggling of goods, including narcotics, gold, and counterfeit currency. The DRI operates through intelligence gathering, investigation, and enforcement actions across India's borders and airports. It collaborates with international agencies to tackle cross-border crime. The agency has regional offices in major cities, including Mumbai, and uses advanced surveillance techniques and predictive intelligence to dismantle smuggling networks. DRI officers have powers under the Customs Act and the Narcotic Drugs and Psychotropic Substances Act.

### WHY IN NEWS?

DRI Mumbai successfully executed Operation Golden Sweep, dismantling a multi-national gold smuggling syndicate operating through Mumbai's international airport, seizing 10.5



kilograms of smuggled gold and arresting 13 suspects.

### **Election Commission of India (ECI)**

The Election Commission of India (ECI) is a constitutional authority established in 1950 responsible for administering election processes in India at national, state, and local levels. It oversees the conduct of elections to the Parliament, State Legislatures, and the offices of the President and Vice-President. The ECI functions independently of the government to ensure free and fair elections. It has the power to issue binding directives to political parties and candidates. The Commission also introduced guidelines to address the use of synthetic media and deepfakes in election campaigns to prevent misinformation and maintain electoral integrity.

#### WHY IN NEWS?

The ECI issued new advisory guidelines in October 2025 requiring political parties to label AI-generated or digitally altered election campaign materials prominently, aiming to curb misinformation through deepfakes during elections.

### **Electronic Voting Machine (EVM)**

Electronic Voting Machines (EVMs) are devices used in Indian elections to record votes electronically. Introduced nationwide in 2004, EVMs replaced paper ballots to reduce fraud and counting errors. Each EVM has a ballot unit for voters and a control unit for polling officers. They are designed to be tamper-proof and have undergone multiple security tests. EVMs feature Braille for visually impaired voters and allow voting in multiple languages. Their use has sped up vote counting and results declaration. Despite occasional controversies, EVMs remain central to India's election process, supporting large-scale democratic participation.

#### WHY IN NEWS?

EVMs are integral to Bihar's 2025 Assembly elections, enabling efficient and transparent voting for over 7.4 crore registered voters.

### **Great Nicobar Project**

The Great Nicobar Project is maritime infrastructure initiative under construction in the Andaman and Nicobar Islands. It involves an investment of **\$5 billion** to develop a deep-sea port, airport, and associated infrastructure aimed at enhancing India's strategic and commercial maritime capabilities in the Indo-Pacific region. The project will improve connectivity, facilitate naval operations, and boost trade routes through the Indian Ocean. It is part of India's broader effort to strengthen its maritime security and economic presence, especially in the context of growing geopolitical competition in the Indo-Pacific.

#### WHY IN NEWS?

The Great Nicobar Project was mentioned as an ongoing critical investment during India Maritime Week 2025, reflecting India's focus on expanding its maritime infrastructure and strategic reach.

### **I4C (Indian Cyber Crime Coordination Centre)**

The Indian Cyber Crime Coordination Centre (I4C) operates under the Ministry of Home



Affairs to strengthen the country's cybercrime response. It coordinates investigations, intelligence sharing, and capacity building among various law enforcement agencies. I4C focuses on combating cyber fraud, online scams, and digital offenses through advanced technology and data analytics. It collects inputs from multiple sources, enabling agencies like the CBI to act on cybercrime threats efficiently. I4C also promotes public awareness and collaborates internationally to tackle cross-border cybercrimes, playing a very important role in safeguarding digital infrastructure and citizen data.

#### WHY IN NEWS?

I4C provided the critical intelligence input that led to the registration of the case and the launch of Operation Chakra-V against the online fraud network.

### India Justice Report 2025

The **India Justice Report 2025** is a comprehensive assessment of the justice delivery system across state of Indias, focusing on access, affordability, and efficiency. It provides detailed data on judicial infrastructure, case pendency, and gender representation. The report marks that women constitute only 14% of High Court judges and a mere 3.1% in the Supreme Court. It also tracks disparities in judicial appointments and infrastructure, such as the lack of gender-friendly facilities in district courts. The report is used by policymakers and activists to advocate for judicial reforms and greater inclusivity in India's legal system.

#### WHY IN NEWS?

The India Justice Report 2025 brought into light the low representation of women in India's higher judiciary, underscoring the urgent need for reforms in judicial appointments and infrastructure.

### Justice B.R. Gavai

Justice **B.R. Gavai** is the Chief Justice of India as of 2025. He has a background in constitutional and tax law and is known for his efforts to modernize judicial processes. Justice Gavai has emphasized transparency, efficiency, and expeditious justice delivery in tax adjudication. He was felicitated by the Union Minister of Law and Justice during the ITAT symposium for his exemplary contributions to the judiciary. His tenure is noted for promoting synergy between the judiciary and executive to strengthen India's legal framework, especially in financial and tax matters.

#### WHY IN NEWS?

Justice B.R. Gavai was felicitated during the ITAT symposium in October 2025 for his contributions to India's judicial system and his role in enhancing the tribunal's efficiency.

### Justice JS Verma Committee

The **Justice JS Verma Committee** was constituted in 2013 by the Government of India after the 2012 Delhi gang rape incident to suggest amendments to criminal law related to sexual offenses. Headed by former Chief Justice JS Verma, the committee submitted its report within a month, recommending stricter punishments, expanded definitions of sexual violence, and reforms in police and judicial procedures. It emphasized victim



sensitivity and speedy trials. The committee also proposed measures to improve women's safety in public spaces. Its recommendations led to the Criminal Law (Amendment) Act, 2013. The committee's work is widely regarded as a landmark in legal reforms on gender justice.

#### WHY IN NEWS?

The committee's 2018 recommendations on judicial accountability and recusal transparency are cited as important for reforming higher judiciary practices.

### **Justice P.C. Ghose Commission**

The **Justice P.C. Ghose Commission** was constituted in March 2024 to investigate alleged irregularities in the Kaleshwaram project's planning, design, construction, and maintenance. It is named after retired Justice P.C. Ghose, a former judge of the Supreme Court of India. The commission conducted detailed inquiries, collected evidence, and submitted a comprehensive report in July 2025. The report brought into light serious lapses and deficiencies in project execution. Such commissions have quasi-judicial powers and are often appointed to ensure accountability in large infrastructure projects.

#### WHY IN NEWS?

The commission's report on the Kaleshwaram project exposed multiple lapses, intensifying political debates and influencing government decisions on the project's repairs.

### **Lee Commission (1924)**

The Lee Commission was a British-appointed committee tasked with reviewing the recruitment and organization of the Indian Civil Service. It emphasized the need for an independent recruitment body insulated from political influence to ensure meritocracy. The commission's recommendations led to the establishment of the Public Service Commission in 1926. It told the importance of stability and impartiality in civil services, stating that efficient governance requires protection from political or personal interference. The Lee Commission's work laid the foundation for the modern UPSC, influencing India's administrative framework before independence. Its principles continue to guide civil service recruitment standards in India.

#### WHY IN NEWS?

The Lee Commission is mentioned as the precursor body whose recommendations led to the formation of the Public Service Commission, the predecessor of the UPSC, which is celebrating its centenary.

### **Legal Information Management and Briefing System (LIMBS)**

The Legal Information Management and Briefing System (LIMBS) is an Government of India initiative designed to track and manage litigation involving government entities. It integrates data from multiple Ministries and Departments, providing real-time updates on over 7,23,123 live cases. LIMBS supports 13,175 Ministry users and 18,458 advocates who update case statuses regularly. It facilitates coordination, monitoring, and decision-making by offering centralized access to legal information. LIMBS enhances transparency



and accountability, reducing litigation burdens. The system is accessible through a web portal and includes features like data visualization and case briefing tools, aiding efficient government litigation management.

#### WHY IN NEWS?

LIMBS was brought into light during the launch of the new Live Cases Dashboard, a feature designed to provide real-time visualization of government court cases, improving legal process efficiency.

### **National Dam Safety Authority (NDSA)**

The **National Dam Safety Authority (NDSA)** is a statutory body under the Ministry of Jal Shakti, Government of India, established in 2019. It oversees dam safety regulation, monitoring, and policy implementation across India. NDSA conducts inspections, investigations, and issues safety guidelines for dams and barrages. It has the authority to recommend remedial measures and rehabilitation plans. The authority also collaborates with state governments and central agencies like the Central Water Commission. Its reports carry legal and technical weight in dam safety management.

#### WHY IN NEWS?

NDSA investigated the structural failures at the Kaleshwaram barrages and submitted a detailed report recommending rehabilitation and restoration of the Medigadda, Annaram, and Sundilla barrages.

### **Pact for the Future**

The **Pact for the Future** is a strategic framework adopted by the United Nations to guide global cooperation beyond 2025. It seeks to address long-term challenges such as climate change, inequality, and technological disruption. The pact encourages member states to commit to shared responsibilities and collaborative solutions. It integrates principles of sustainable development with peace and security goals. The Pact for the Future also promotes inclusivity, ensuring marginalized groups participate in decision-making processes. It functions as a roadmap to align national policies with international commitments, strengthening the UN's role in global governance.

#### WHY IN NEWS?

The Pact for the Future is referenced in the context of the UN's ongoing efforts to renew its foundations and enhance its global impact during the 80th anniversary celebrations.

### **Panch Parmeshwar**

The **Panch Parmeshwar** doctrine is an ancient Indian principle of collective consensus in dispute resolution, traditionally practiced in village councils or panchayats. It emphasizes mutual agreement among five respected community members to resolve conflicts amicably without formal litigation. This system predates modern legal frameworks and reflects India's civilisational ethos of community-based justice. Panch Parmeshwar encourages dialogue, reconciliation, and social harmony, minimizing adversarial approaches. It has influenced contemporary Alternative Dispute Resolution (ADR) mechanisms in India, promoting participatory justice. The doctrine is rooted in customary



law and remains in rural and informal dispute settlements.

WHY IN NEWS?

Mentioned by the Minister of Law and Justice as a foundational principle supporting the government's commitment to legal reforms and enhancing ADR mechanisms in India.

### **Panchayats**

Panchayats are local self-government institutions in rural India, established under the Panchayati Raj system. They function as grassroots-level administrative bodies responsible for local governance, development planning, and implementation of government schemes. Panchayats have elected representatives and operate at three levels – village, intermediate, and district. They play a critical role in disaster risk reduction by coordinating community preparedness, first response, and resource management. However, many panchayats face challenges such as limited funds, lack of technical expertise, and insufficient authority to enforce environmental and land-use regulations, impacting their effectiveness in disaster resilience.

WHY IN NEWS?

The article emphasizes strengthening panchayats' capacity and autonomy to improve local disaster preparedness and response as part of India's evolving disaster management strategy in 2025.

### **Project Arunank**

**Project Arunank** was established in 2008 by the Border Roads Organisation (BRO) to enhance infrastructure in Arunachal Pradesh's remote, high-altitude areas. It has constructed and maintained over **696 km of roads** and **1.18 km of major bridges**. The project notably blacktopped the **278 km Hapoli-Sarli-Huri Road**, improving connectivity in Kurung Kumey district. It employs innovative materials such as **steel slag**, **GGBFS concrete**, and **gabion walls** for durability and sustainability. The project supports both civilian access and Armed Forces operations in strategically important regions.

WHY IN NEWS?

Project Arunank celebrated its 18th Raising Day, marking over 17 years of infrastructure development in Arunachal Pradesh, with a motorable expedition and environmental initiatives.

### **Ram Nath Kovind Committee**

The **Ram Nath Kovind Committee** was established by the Government of India in September 2023 to study the feasibility of simultaneous elections for Lok Sabha, State Assemblies, and local bodies. Headed by former President **Ram Nath Kovind**, it submitted an extensive report of over 18,000 pages in March 2024. The committee recommended constitutional amendments including the introduction of Articles **82A** and **324A** to synchronize election cycles and extend the framework to local bodies. It also suggested flexible legislative terms and a single electoral roll to streamline election processes.

WHY IN NEWS?

The committee's recommendations form the basis of the One Nation, One Election initiative, with related bills introduced in Parliament in December 2024 and currently



under Joint Parliamentary Committee review as of October 2025.

### **RO Diary Mobile Application**

The **RO Diary Mobile Application** is a digital tool developed for Revenue Officers (ROs) to streamline land record management and administrative tasks. It facilitates real-time data entry, monitoring of land-related cases, and communication between field officials and headquarters. The app supports integration with existing land record systems, improving transparency and efficiency. It also assists in tracking resurvey efforts and urban land record updates. The application is part of broader efforts to modernize revenue administration and reduce paperwork through digital means. It was launched in Gujarat as a pilot before wider adoption.

#### WHY IN NEWS?

The RO Diary Mobile Application was officially launched at the National Conference on Land Administration & Disaster Management in October 2025, marking a step toward digital governance in land administration.

### **Secretaries of Legislative Houses**

Secretaries of Legislative Houses are senior administrative officers responsible for managing the functioning and procedural affairs of State Legislatures in India. They oversee legislative processes, coordinate with government departments, and ensure compliance with rules and regulations. These Secretaries play a very important role in implementing digital initiatives like NeVA by facilitating coordination between the Legislature and nodal government departments. Their responsibilities include record-keeping, managing legislative business, and supporting the Speaker and members in procedural matters. They act as a vital link in operationalizing reforms aimed at modernizing legislative administration.

#### WHY IN NEWS?

Secretaries of Legislative Houses are participating in the 3rd National Conference on NeVA to discuss implementation challenges and share best practices for digital transformation of legislative operations.

### **Union Territories Laws (Amendment) Bill, 2024**

The **Union Territories Laws (Amendment) Bill, 2024** was introduced in the Indian Parliament in December 2024 alongside the Constitution (129th Amendment) Bill. This bill seeks to amend laws governing Union Territories to align their election cycles with the synchronized election framework proposed by the Ram Nath Kovind Committee. It addresses the unique administrative and legislative arrangements of Union Territories, ensuring their elections can be held simultaneously with national and state elections under the One Nation, One Election scheme.

#### WHY IN NEWS?

The bill is under scrutiny by the Joint Parliamentary Committee as part of the legislative process to implement simultaneous elections across India, with no final report released as of October 2025.



## Economy & Banking/Finance

### Advance Authorization (AA)

Advance Authorization (AA) is a foreign trade policy instrument allowing duty-free import of inputs required for export production. Issued by the Directorate General of Foreign Trade (DGFT), AA promotes exports by reducing input costs. It is valid for a specified period and linked to a specified export obligation. The scheme covers raw materials, components, and consumables, with inputs imported under AA exempt from customs duties. Non-fulfillment of export obligations attracts penalties. AA is often used by manufacturers in sectors like electronics, textiles, and engineering goods to maintain cost competitiveness in international markets.

#### WHY IN NEWS?

The RoDTEP extension includes exporters operating under Advance Authorization, ensuring continued refund benefits for duty-free imports used in export production.

### Aircraft Component Manufacturing in India

India's aircraft component manufacturing sector is rapidly growing, supported by government policies and international partnerships. This sector includes production of avionics, structural parts, engines, and maintenance components. India has become a hub for manufacturing parts used in both commercial and defense aviation. The government promotes Make in India initiatives to attract global players and increase exports. The sector also benefits from a skilled workforce and growing MRO (Maintenance, Repair, and Overhaul) capabilities. India aims to become a global supplier in the aerospace supply chain, contributing to cost-effective and innovative aviation solutions.

#### WHY IN NEWS?

India's expanding aircraft component manufacturing industry attracted attention during the 42nd ICAO Assembly, denoting its growing role in the global aviation market.

### B-heavy Molasses

B-heavy molasses is an intermediate byproduct in sugarcane processing with a higher sucrose content than C-heavy molasses. Introduced for ethanol production from 2018-19, it allows mills to ferment more sugar into ethanol rather than crystallizing it. The Narendra Modi government incentivized ethanol production from B-heavy molasses by offering higher ex-distillery prices to compensate mills for reduced sugar output. This has helped increase ethanol blending in petrol. B-heavy molasses ethanol production reduces reliance on final molasses and supports sugar mills during fluctuating sugar demand. It contains fermentable sugars that improve ethanol yield compared to C-heavy molasses.

#### WHY IN NEWS?

The term is relevant due to increased ethanol production from B-heavy molasses starting 2018-19, contributing to India's rising ethanol blending targets and supporting sugar mills financially.

### Boka Saul/Chokuwa Saul (Magic Rice)

Boka Saul, also known as Chokuwa Saul or Magic Rice, is a GI-tagged traditional rice



grown across Assam's lower Brahmaputra valley and Upper Assam regions. It is cultivated primarily by small-scale farmers on small plots. This glutinous rice is culturally and consumed soaked, especially during festivals, floods, and by field laborers. It is seasonally available in major cities like Guwahati through departmental stores such as GNRC and SICEDM. The 2025 GST cut from 12%/18% to 5% on ready-to-cook and instant mixes of Boka Saul lowers prices by 6-11%, easing costs for farmers and increasing accessibility for consumers.

#### WHY IN NEWS?

The GST reduction in October 2025 on Boka Saul rice products to 5% is expected to reduce prices and support farmers by increasing demand for this traditional Assamese staple.

### **Brent Oil**

Brent oil is a major trading classification of crude oil sourced from the North Sea, serving as a global benchmark for oil prices. It represents sweet light crude oil and is widely used to price two-thirds of the world's internationally traded crude supplies. Brent's price influences fuel costs, economic policies, and energy markets worldwide. Its pricing is sensitive to geopolitical events, production changes, and demand fluctuations. Recently, Brent oil prices dropped to \$61 per barrel, down 16% year-to-date, affected by increased production and slowing demand growth.

#### WHY IN NEWS?

Brent oil prices have fallen sharply in 2025 due to a global crude supply glut and demand uncertainties, impacting energy markets and economies like India.

### **CASA Ratio**

CASA (Current Account Savings Account) ratio measures the proportion of deposits held in current and savings accounts relative to total deposits. A higher CASA ratio indicates cheaper funds for banks, as these accounts typically have lower interest rates than fixed deposits. SBI's CASA ratio stood at **39.36%** in June 2025, reflecting a strong base of low-cost deposits. This ratio is a key indicator of a bank's liquidity and profitability, influencing lending capacity and interest margins. Maintaining a high CASA ratio is strategically important for SBI's financial health and competitive positioning.

#### WHY IN NEWS?

SBI reported a CASA ratio of 39.36% as part of its financial performance update for June 2025.

### **Circular Dealing**

Circular dealing refers to transactions where companies engage in reciprocal or circular financial arrangements, often inflating revenues or valuations artificially. This practice was a notable feature of the 1980s Japanese equity bubble, where firms bought and sold assets among themselves to boost market prices. Circular dealing can distort true market value and create misleading signals for investors. In modern markets, such arrangements might involve large tech companies investing in each other or conducting deals that loop capital through multiple firms, obscuring real economic activity and potentially



contributing to asset bubbles.

#### WHY IN NEWS?

Recent deals involving Nvidia, OpenAI, and Oracle illustrate circular dealing, raising concerns about artificial inflation of valuations in the AI sector bubble.

### **Commission for Agricultural Costs & Prices (CACP)**

CACP is a government advisory body responsible for recommending MSPs for 22 mandated crops annually. It considers production costs, demand-supply, domestic and international prices, inter-crop price parity, and economic impacts. Its cost of production includes paid labor, family labor, rent, seeds, fertilizers, irrigation, depreciation, and interest on working capital. Since 2018-19, CACP's MSP recommendations ensure a minimum 50% margin over production costs. The cost formula is uniform across crops and states. It also sets MSPs for crops like Toria and de-husked coconut based on related crops' MSPs.

#### WHY IN NEWS?

CACP recommended increased MSPs for Rabi 2026-27 and Kharif 2025-26 crops, influencing government procurement and farmer income support policies.

### **Committee of Creditors (CoC)**

The **Committee of Creditors (CoC)** is a key decision-making body under the IBC, comprising financial creditors of a defaulting company. It holds exclusive authority to approve or reject resolution plans during insolvency proceedings. The CoC's decisions reflect commercial wisdom and are binding on the Adjudicating Authority (NCLT) and other stakeholders. The AA cannot modify or substitute the CoC's choices but can reject plans if statutory non-compliance is found. The CoC's role centralizes creditor power, streamlining resolution while limiting judicial intervention in commercial matters.

#### WHY IN NEWS?

The CoC's authority and its interplay with the NCLT have been under scrutiny in recent insolvency cases, emphasizing the balance between commercial and procedural roles.

### **Common Effective Preferential Tariff (CEPA)**

The Common Effective Preferential Tariff (CEPA) is a trade agreement framework that provides preferential tariff rates between member countries to boost bilateral trade. CEPA agreements often cover goods, services, investment, and intellectual property rights. India's CEPA with the UAE, effective since 2022, has led to increased trade flows, particularly in gold imports, making the UAE India's second-largest supplier by October 2025. CEPA agreements aim to reduce tariffs, streamline customs procedures, and enhance cooperation in sectors like manufacturing and services, encouraging economic integration. CEPA differs from free trade agreements by focusing on preferential tariffs rather than complete tariff elimination.

#### WHY IN NEWS?

India's gold imports from the UAE surged under CEPA, contributing to the UAE overtaking Russia as India's second-largest import supplier in Q4 FY 2024-25.



## Debt Sustainability Index

The **Debt Sustainability Index** is a composite measure assessing a State's ability to manage debt, combining five criteria – Domar gap (growth minus interest rate), debt buoyancy (growth minus debt growth), debt-to-GSDP ratio, debt-to-revenue receipt ratio, and the ratio of cumulative capital expenditure (assets) to debt. The index weights the asset-to-debt ratio at 40%, reflecting the importance of how debt funds are utilized. Values above 1 indicate no revenue deficit on a cumulative basis. It offers a nuanced view beyond simple debt/GSDP ratios to evaluate fiscal prudence and repayment capacity.

### WHY IN NEWS?

Recent analysis of Indian States' debt sustainability uses this index to classify fiscal health, showing variation across States despite similar debt/GSDP ratios.

## Demographic Dividend

India's **demographic dividend** refers to the economic growth potential arising from a large proportion of the population being under 35 years old—about 65%. This age structure can boost productivity and consumption if youth are integrated into economic and democratic processes. However, 85% of Indians live in rural districts, where opportunities are limited compared to urban hubs contributing over 60% of GDP. Failure to employ and empower this young population risks economic stagnation and democratic erosion. The demographic dividend is time-sensitive, requiring immediate reforms in governance, education, and employment to convert youth potential into sustained national growth.

### WHY IN NEWS?

India's demographic dividend is central to discussions on economic policy and governance reforms aimed at addressing youth unemployment and regional disparities in opportunity, crucial for future growth and democratic stability.

## Di-Ammonium Phosphate (DAP)

Di-Ammonium Phosphate is a widely used phosphorus fertilizer with the chemical formula  **$\text{NH}_4)_2\text{HPO}_4$** . It contains about **18% nitrogen and 46% phosphorus pentoxide**, making it a balanced source of nutrients. DAP is water-soluble and commonly used in various crops worldwide. It was first produced commercially in the early 20th century and is favored for its high nutrient content and neutral pH. DAP is often manufactured by reacting phosphoric acid with ammonia. It also acts as a fire retardant in some industrial applications. The global production of DAP is centered in countries with phosphate rock reserves.

### WHY IN NEWS?

The government announced a special package to ensure adequate availability of DAP for the 2025 rabi season, reflecting its importance in crop fertilization and food security.

## Digital Colonialism

Digital colonialism describes the dominance of Big Tech and cloud service providers over global digital infrastructure and data ecosystems. It involves the extraction of economic



rents and control over digital rights, often undermining national sovereignty. Examples include the AI Action Plan, the Cloud Act, and the weaponization of the SWIFT payment system. Over 100 central banks pilot state-backed digital currencies, which can streamline cross-border transactions but also risk diluting anti-money laundering frameworks and complicating political funding. This phenomenon enables populist-autocrats to exploit digital systems for political control and economic advantage.

#### WHY IN NEWS?

Digital colonialism is discussed in relation to the evolving global economy where digital-financial paradigms are reshaping political power and economic sovereignty in 2025.

### Edible Oils Inflation

Edible oils inflation refers to the rise in prices of cooking oils derived from sources like palm, soybean, sunflower, and mustard seeds. India is heavily dependent on imports for edible oils, accounting for over 60% of consumption. Global supply disruptions, weak domestic sowing, and increased demand have led to persistently high double-digit inflation in this category. The edible oils sub-group inflation has been above 10% for 11 consecutive months as of September 2025. Price volatility in edible oils impacts food inflation and household budgets in India.

#### WHY IN NEWS?

Edible oils inflation remained high at 18.3% in September 2025, contributing to inflationary pressures despite overall retail inflation falling.

### Exclusive Economic Zone (EEZ)

An **Exclusive Economic Zone (EEZ)** extends up to 200 nautical miles from a country's coastline, granting sovereign rights for exploring, exploiting, conserving, and managing natural resources. India's EEZ covers over 2 million sq. km, including deep waters beyond the continental shelf. It includes both conventional fisheries and non-conventional resources like deep-sea species. Under international law, coastal states have exclusive rights to marine resources within their EEZ but must allow freedom of navigation. India's EEZ is one of the largest globally, bordered by the Arabian Sea, Bay of Bengal, and Indian Ocean. Deep-sea resources in this zone remain largely untapped.

#### WHY IN NEWS?

The NITI Aayog report focuses on harnessing India's EEZ for sustainable deep-sea and offshore fisheries to boost exports, livelihoods, and ecological sustainability.

### Fiscal Complacency

Fiscal complacency refers to a government's tendency to tolerate or ignore growing budget deficits and public debt due to short-term political gains. It creates a **moral hazard** where policymakers prioritize electoral popularity over long-term economic stability. This complacency often leads to increased borrowing to fund welfare commitments and public spending without sufficient reforms. It risks future economic growth by mortgaging it to cover immediate fiscal needs. The phenomenon is exacerbated in ageing societies where welfare costs rise automatically, making deficit



reduction politically and economically challenging. Fiscal complacency contributes to inflationary pressures and debt sustainability issues.

#### WHY IN NEWS?

Fiscal complacency is brought into light as governments face mounting debt and inflation, risking long-term economic health for short-term political advantage.

### Fragile Five

The term “Fragile Five” referred to five emerging market economies—India, Brazil, South Africa, Turkey, and Indonesia—vulnerable to capital outflows and currency depreciation during global financial instability around 2013-2014. India was once grouped with these due to its current account deficit and inflation but has since improved macroeconomic fundamentals. Key reforms, stable foreign exchange reserves, and controlled inflation helped India exit this group. The term is rarely used in current economic analysis as these countries have diverged in performance. India’s transition from the Fragile Five to a stable economy marks shift in global investor confidence.

#### WHY IN NEWS?

The text references India’s progress from being part of the Fragile Five to becoming one of the fastest-growing large economies with a resilient financial system amid global challenges.

### Garden Silk Mills

Garden Silk Mills is a textile manufacturing company based in Surat, known for producing silk and synthetic fabrics. It has a history dating back several decades and contributes to Surat’s textile industry, which is a major economic driver for the city. The mill actively participates in community welfare and quality assurance initiatives, collaborating with local authorities and organizations to promote industrial safety and environmental standards. Garden Silk Mills is recognized for adopting modern manufacturing techniques and sustainable practices to reduce environmental impact while maintaining high product quality.

#### WHY IN NEWS?

Garden Silk Mills was one of the key supporters and participants in the Run for Quality event organized by BIS Surat on 12 October 2025, contributing to the event’s success and community engagement.

### Glide Path Provisioning

Glide path provisioning is a phased approach to implementing increased loan loss provisions over a specified period. In the RBI’s ECL framework, banks must add additional provisioning in **five tranches** between FY27 and FY31. This staged increase prevents sudden shocks to banks’ common equity tier 1 (CET1) capital and maintains lending capacity. Glide path provisioning balances regulatory prudence with operational flexibility, allowing banks to strengthen capital buffers gradually while continuing credit flow. This method is used internationally to ease transitions to stricter accounting or regulatory standards.



## WHY IN NEWS?

The RBI's glide path approach for ECL provisioning aims to mitigate capital strain on banks, especially public sector ones, ensuring smooth adoption of new credit risk rules by 2031.

**Gross Fixed Capital Formation Rate (GFCFR)**

The **Gross Fixed Capital Formation Rate (GFCFR)** is the ratio of real gross fixed capital formation to GDP, indicating the proportion of output invested in fixed assets. India's GFCFR has been stable around 34.5% from 2023-24 to 2025-26. Stability in GFCFR suggests no structural break in investment trends. The public sector's share in GFCF increased from 21.6% in 2021-22 to 25.1% in 2023-24, mainly due to infrastructure investments. Private corporate investment share declined from 37% to 34.4% between 2021-22 and 2023-24. Increasing GFCFR by about 2 percentage points is necessary to raise India's potential growth rate.

## WHY IN NEWS?

GFCFR trends and the role of public versus private investment are analyzed to assess India's economic growth prospects for 2025-26.

**Headline vs Core Inflation**

Headline inflation measures the **overall consumer price index (CPI)**, including volatile items like food and fuel, while core inflation excludes these to reflect underlying inflation trends. In India's inflation targeting debate, experts favor headline inflation targeting with adjusted weightings for CPI components. This is because headline inflation impacts the poor more severely, especially in unorganized sectors. Core inflation is often more stable but less reflective of immediate cost-of-living changes. The RBI's current framework targets headline inflation at 4% with a +/- 2% tolerance band, a practice initiated after the 2016 RBI Act amendment.

## WHY IN NEWS?

The RBI's discussion paper on inflation targeting reviews whether to maintain headline inflation targeting or shift to core inflation targeting, influencing future monetary policy decisions.

**Incremental Capital-Output Ratio (ICOR)**

The **Incremental Capital-Output Ratio (ICOR)** measures the amount of capital needed to generate one unit of output growth. It is calculated by dividing real gross fixed capital formation by real GDP growth. A lower ICOR indicates more efficient use of capital. ICOR is volatile because it depends on fluctuating GDP growth rates and fixed capital formation. It reflects technology and management efficiency in capital utilization. India's ICOR averaged around 5.2 in recent years. A reduction in ICOR is essential to raise the potential growth rate above 6.5%. Public sector infrastructure investment typically has a higher ICOR than private investment.

## WHY IN NEWS?

ICOR volatility and its impact on India's potential growth rate are discussed in the context of recent GDP and investment trends for 2025-26.



## India-Middle East-Europe Economic Corridor (IMEEC)

The **India-Middle East-Europe Economic Corridor (IMEEC)** is a strategic infrastructure project aimed at enhancing trade and connectivity between India, the Middle East, and Europe. It involves multi-modal transport networks including rail, road, and maritime routes. The corridor is designed to bypass traditional routes dominated by China, reducing dependency on the Suez Canal and other chokepoints. IMEEC aims to facilitate faster movement of goods, energy resources, and people, boosting economic integration. Saudi Arabia's participation is crucial for IMEEC's success. The project also includes digital and energy cooperation components, reflecting a comprehensive approach to regional connectivity and economic development.

### WHY IN NEWS?

Saudi Arabia's hesitation to normalise ties with Israel has cast doubt on the future of the IMEEC, as the corridor depends heavily on cooperation between these regional powers for its implementation.

## India-Mongolia Oil Refinery Project

The India-Mongolia Oil Refinery Project is a major infrastructure initiative aimed at enhancing Mongolia's energy security. The project involves constructing a modern oil refinery to reduce Mongolia's dependence on imported refined petroleum products. Groundbreaking was conducted by then-Home Minister Rajnath Singh, reflecting India's commitment to Mongolia's development. The refinery is expected to support Mongolia's industrial growth and energy needs, creating jobs and boosting the local economy. It symbolizes the deepening strategic and economic partnership between the two countries. The project includes capacity-building components and technical cooperation between Indian and Mongolian experts.

### WHY IN NEWS?

The Mongolian President invited Indian leaders to the refinery's inauguration during his official visit to India, underscoring its importance in bilateral relations.

## India-U.K. Free Trade Agreement (FTA)

The **India-U.K. Free Trade Agreement** aims to increase Indian agricultural exports by 20% within three years by granting duty-free access to over 95% of agricultural and processed food products. It covers key commodities like rice, spices, dairy, and ready-to-eat meals. The agreement includes safeguards for sensitive sectors and provisions to support women, including training, credit access, and market linkages. These provisions are intended to help women transition from unpaid labor to entrepreneurial roles in export value chains. The FTA is expected to enhance India's premium market access in the UK.

### WHY IN NEWS?

The FTA is brought into light for its potential to boost Indian agricultural exports and promote women's economic inclusion in agriculture through export-oriented value chains and targeted support measures.



## Indian Railway Finance Corporation (IRFC)

The Indian Railway Finance Corporation is a government-owned company established in 1986 to mobilize financial resources for Indian Railways. It issues bonds, including sovereign green bonds, to fund railway infrastructure projects. IRFC was the first Indian entity to issue a green bond in 2017, raising \$500 million for electric locomotive procurement. It has since expanded its green financing portfolio, including a ₹7,500 crore loan to NTPC Green Energy for renewable power development. IRFC plays a critical role in integrating climate objectives into railway financing and supports cross-sector investments to advance India's low-carbon infrastructure.

### WHY IN NEWS?

IRFC recently extended a ₹7,500 crore loan to NTPC Green Energy, reflecting its growing role in financing India's green transition in the rail and power sectors.

## Jawaharlal Nehru Port Trust (JNPT)

Jawaharlal Nehru Port Trust (JNPT), located near Mumbai, is India's largest container port. It handles over 50% of the country's containerized cargo. JNPT has undergone capacity expansion, doubling its handling capability through modernization and automation. The port is a key gateway for international trade and is integrated with extensive road and rail networks. It operates under a landlord port model, facilitating private sector participation. JNPT also focuses on sustainability measures, including green port initiatives and energy-efficient operations. It plays a critical role in India's logistics performance and maritime infrastructure development.

### WHY IN NEWS?

JNPT's handling capacity doubled in 2025, reinforcing its status as India's biggest container port amid rising maritime trade and infrastructure upgrades.

## Khanij Bidesh India Ltd. (KABIL)

Founded in 2019, **Khanij Bidesh India Ltd. (KABIL)** is a government-owned company tasked with securing overseas critical mineral assets to support India's supply chain resilience. KABIL focuses on acquiring stakes in mines abroad for lithium, cobalt, and rare earth elements, aiming to reduce import vulnerabilities. It works alongside domestic exploration and mining efforts, complementing India's National Critical Mineral Mission. KABIL plays a strategic role in international partnerships, resource diplomacy, and ensuring steady access to minerals vital for electric vehicle batteries and renewable energy technologies. The company is actively expediting acquisitions to meet India's growing demand for critical minerals.

### WHY IN NEWS?

KABIL is in the news as the government urges it to accelerate overseas acquisitions to secure critical mineral supplies amid global competition and supply chain risks.

## Least-Developed Countries (LDCs)

Least-developed countries (LDCs) are a UN-classified group of nations with the lowest indicators of socioeconomic development. Criteria include low income, weak human



assets, and economic vulnerability. There are currently 46 LDCs, mostly in Africa and Asia. These countries contribute less than one percent to global trade but face disproportionately high tariffs, sometimes reaching 40%. LDCs often rely heavily on a narrow range of exports and are vulnerable to external shocks. They benefit from special trade preferences and development aid but struggle with debt and limited fiscal space. The UN regularly reviews and updates the list based on development progress.

#### WHY IN NEWS?

The UN Secretary-General brought into light LDCs suffering from high tariffs and economic marginalization amid the evolving global trade rules that disadvantage vulnerable economies.

### London Consensus

The **London Consensus** is a collection of essays published in 2025, authored by 50 economists and policy experts, advocating for stronger national ownership of economic policy and enhanced public institution capabilities. It critiques the Washington Consensus for its one-size-fits-all approach and emphasizes the political dimensions of economic reform, stressing the importance of addressing distributional impacts. The term “London” is incidental, symbolizing a new paradigm shift rather than a geographical origin. The consensus calls for more nuanced, country-specific policies that incorporate political realities and institutional strengths to encourage sustainable development.

#### WHY IN NEWS?

The London Consensus was revealed at the 2025 Kautilya Economic Conclave, offering a new framework for economic governance amid debates on IMF and World Bank policy relevance.

### Minimum Support Price (MSP) A2+FL Cost

The **A2+FL cost** represents the total cost of cultivation borne by farmers, combining **A2** (actual paid-out costs like seeds, fertilizers, labor) and **FL** (imputed value of unpaid family labor). It is a key metric used by the CACP to recommend MSPs, ensuring minimum profitability for farmers. For wheat in 2025-26, this cost was projected at Rs 1,239 per quintal. The MSP is typically set with a margin over this cost, usually 50%, to ensure farmers’ income stability. A2+FL cost varies regionally and seasonally, reflecting input price fluctuations and labor availability.

#### WHY IN NEWS?

The MSP hike for wheat in 2025-26 was set at Rs 2,585 per quintal, over 109% above the A2+FL cost, sparking discussions on the rationale behind such a large increase relative to cultivation costs.

### Molasses Feedstock

Molasses is a byproduct of sugarcane processing and a primary feedstock for ethanol production in India. It contains fermentable sugars which are converted into ethanol by yeast fermentation. The availability of molasses fluctuates with sugarcane harvest cycles and affects ethanol supply stability. Molasses-based ethanol production is energy-



intensive and water-consuming, raising sustainability concerns in water-stressed regions. The ethanol industry in India operates at around **80 percent capacity utilization**. Using molasses for ethanol competes with sugar production, impacting sugar prices and farmer incomes.

#### WHY IN NEWS?

Molasses is critical for meeting ethanol production targets under India's E20 fuel policy, influencing agricultural economics and biofuel sustainability.

### OPEC-Plus

The **Organization of the Petroleum Exporting Countries (OPEC)-Plus** is a coalition of OPEC members and non-OPEC oil-producing countries, including Russia, formed in 2016 to coordinate oil production policies and stabilize global oil markets. It controls about 40% of the world's crude oil supply. The group has played role in managing production cuts and increases to influence oil prices. OPEC-Plus decisions often reflect differing priorities, such as Saudi Arabia's market share goals versus Russia's export sanctions challenges. The coalition's influence extends beyond economics, impacting geopolitics and energy security worldwide.

#### WHY IN NEWS?

OPEC-Plus recently increased production by 3.1 mbpd, contributing to a global crude supply overhang and a 16% decline in Brent oil prices in 2025.

### Orvakal Node

Orvakal Node is an industrial and logistics hub in Kurnool district, Andhra Pradesh, developed as part of the Bengaluru-Chennai Industrial Corridor. It hosts the Defence Research and Development Organisation's (DRDO) Drone Testing Centre and an upcoming Drone Manufacturing Unit. The area integrates Asia's largest hybrid Solar-Wind-Hydro Power Project, showcasing renewable energy innovation. It is a focal point for industrial growth with infrastructure including the Jayaraj Steel Factory and a modernized railway station. The Kurnool Airport, developed under the UDAN scheme, enhances connectivity, supporting Orvakal Node's role as a strategic growth center in Rayalaseema.

#### WHY IN NEWS?

Orvakal Node is brought into light as a key driver of Andhra Pradesh's technological and industrial transformation under the Modi government's development vision.

### Payments Regulatory Board (PRB)

The Payments Regulatory Board (PRB) is the regulatory authority overseeing payment systems in India. It replaced the Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) and is chaired by the Governor of the Reserve Bank of India. The PRB is responsible for the regulation, supervision, and development of payment and settlement systems, ensuring their safety, efficiency, and accessibility. It plays a key role in promoting innovation and competition in the payments ecosystem while safeguarding consumer interests and financial stability. The PRB's establishment signifies a strengthened regulatory framework for India's rapidly evolving digital payments



landscape.

#### WHY IN NEWS?

The RBI's 2025 Payments System Report marks the role of the Payments Regulatory Board as the designated authority for payment systems regulation in India.

### **Peer-to-Merchant (P2M) Payments**

Peer-to-merchant (P2M) payments refer to digital transactions where individuals pay merchants directly via platforms like UPI. These transactions typically involve low-value payments, mostly under ₹500, for daily purchases such as groceries, meals, and small services. P2M payments are a key driver in the decline of cash usage and ATM withdrawals in India. The increase in P2M volume reflects a shift toward digital payments in everyday consumer behavior, supported by widespread smartphone penetration and merchant acceptance of UPI QR codes. P2M transactions contribute to the growth of India's digital economy.

#### WHY IN NEWS?

The RBI paper marks the rising share of peer-to-merchant payments as a major factor in the increasing use of UPI for low-value transactions.

### **Project mBridge**

Project mBridge is a cross-border CBDC (Central Bank Digital Currency) initiative involving China, Thailand, Hong Kong, Saudi Arabia, and the UAE. It aims to facilitate international payments by bypassing traditional intermediaries such as the Bank for International Settlements. Launched in 2021, the project explores the use of wholesale CBDCs to increase efficiency, reduce costs, and enhance transparency in cross-border transactions. It uses blockchain technology to enable real-time settlement and multi-currency payments. The project also tests interoperability between different CBDCs and aims to reduce dependency on the US dollar in global trade settlements.

#### WHY IN NEWS?

Project mBridge is brought into light as one of the 13 initiatives exploring CBDCs for cross-border payments, offering an alternative to dollar-based systems like SWIFT amid geopolitical tensions.

### **Project Nexus**

Project Nexus is a multilateral international initiative aimed at enabling instant cross-border retail payments by interlinking domestic fast payment systems (FPS) of member countries. Participating countries include India, Malaysia, the Philippines, Singapore, and Thailand. The goal is to reduce transaction times and costs, improve interoperability, and facilitate seamless cross-border transactions for individuals and businesses. Project Nexus leverages existing FPS infrastructure to create a unified network for retail payments, enhancing financial inclusion and efficiency. It is supported by central banks and financial regulators of the member countries to promote coordinated regulation and technological standards.

#### WHY IN NEWS?

India joined Project Nexus in 2025 to enhance instant cross-border retail payments by



interlinking domestic fast payment systems with Malaysia, the Philippines, Singapore, and Thailand.

### **REITs and InvITs Lending**

**Real Estate Investment Trusts (REITs)** and **Infrastructure Investment Trusts (InvITs)** are investment vehicles that pool money to invest in real estate and infrastructure assets, respectively. Banks lending against units of REITs and InvITs can enhance liquidity in these sectors. RBI's policy review may ease capital market exposure guidelines, potentially increasing bank lending for these trusts. REITs and InvITs provide retail and institutional investors access to large-scale projects with stable income streams and offer diversification benefits. Their growth supports infrastructure development and real estate financing.

#### WHY IN NEWS?

The RBI's October 2025 policy contemplates easing lending restrictions against REITs and InvITs units, aiming to boost infrastructure and real estate financing through improved capital market access.

### **RoDTEP Scheme**

The **Remission of Duties and Taxes on Exported Products (RoDTEP)** scheme, launched in 2021, refunds embedded duties, taxes, and levies on exports not covered by other incentives. It targets exporters from Domestic Tariff Area (DTA) units, Advance Authorization (AA) holders, Export-Oriented Units (EOUs), and Special Economic Zones (SEZs). The scheme aims to enhance export competitiveness by neutralizing hidden taxes. Budgetary limits cap its operation, and it replaced the earlier Merchandise Exports from India Scheme (MEIS). RoDTEP is for sectors like textiles, chemicals, and engineering goods, with refund rates varying by product classification and export destination.

#### WHY IN NEWS?

The Government extended the RoDTEP scheme until March 31, 2026, to support exporters amid global economic challenges and provide policy continuity for export planning.

### **UDGAM Portal**

The **UDGAM Portal** is an online platform launched by the RBI to facilitate easy access and search for unclaimed deposits across banks. It consolidates data on dormant accounts and unclaimed funds, allowing depositors to identify and claim their money digitally. The portal simplifies the reclamation process, reducing paperwork and delays. It supports the RBI's goal of transparency and financial inclusion by providing a centralized, user-friendly interface for depositors nationwide. UDGAM integrates with bank systems to update account statuses and claim progress in real-time.

#### WHY IN NEWS?

UDGAM is referenced as part of RBI's broader strategy to improve accessibility and recovery of unclaimed deposits alongside the new incentive scheme for banks.

### **Unified Markets Interface (UMI)**

The **Unified Markets Interface (UMI)** is a financial market infrastructure developed by



the Reserve Bank of India aimed at asset tokenization and settlement using wholesale Central Bank Digital Currency (CBDC). It converts real-world assets into digital tokens on blockchain, enabling fractional ownership and global trading. UMI integrates smart contracts to automate settlements, improve transparency, and enhance market efficiency. The system supports a pilot phase that has shown promising improvements in market operations. It represents a next-generation platform designed to modernize financial markets by leveraging blockchain technology and digital currency for wholesale transactions.

#### WHY IN NEWS?

RBI Governor Sanjay Malhotra announced UMI's development and pilot results at Global Fintech Fest 2025, denoting its role in asset tokenization and wholesale CBDC-based settlements.

### **Urban Cooperative Banks Licensing**

Urban Cooperative Banks (UCBs) are financial institutions serving urban and semi-urban areas, primarily catering to small businesses and individuals. Licensing for new UCBs was frozen since 2004 due to regulatory concerns. Reopening licensing aims to expand the cooperative banking sector and improve financial inclusion in urban regions. UCBs operate under dual regulation by the Reserve Bank of India and state governments. They typically offer services like deposits, loans, and payment facilities. The move to license new UCBs requires stricter regulatory oversight to ensure sound governance and risk management. UCBs play a vital role in supporting MSMEs and low-income urban populations.

#### WHY IN NEWS?

Licensing for establishing urban cooperative banks will be reopened after a two-decade freeze as part of broader banking sector reforms.

### **Urea Price Controls**

India has maintained urea prices at ₹5.4 per kilogram for over 25 years, despite inflation and rising production costs. A price hike attempt in 1998 was reversed after protests. Urea prices are kept artificially low, about a tenth of actual production and import costs, leading to heavy government subsidies costing ₹1.25-1.68 lakh crore annually in recent years. Low prices encourage overuse, soil degradation, and illegal diversion of urea to industrial uses. Phased price increases are proposed to reduce subsidies, promote balanced fertilizer use, and curb misuse.

#### WHY IN NEWS?

The government is considering phased urea price increases to reduce subsidy burdens, improve fertilizer use balance, and address environmental and economic challenges caused by long-standing price controls.

### **Value-Capture Financing**

Value-capture financing is a public funding mechanism where increases in land value due to infrastructure projects, such as transit hubs, are monetized to finance those projects.



Governments or land-owning agencies capture this added value through taxes, fees, or development rights sales. This method reduces reliance on direct public expenditure and links infrastructure investment to economic benefits. It is commonly used in Transit-Oriented Development to fund transit systems by leveraging rising property prices near transit nodes. Value-capture can include instruments like betterment levies, tax increment financing, or joint development agreements.

#### WHY IN NEWS?

Value-capture financing is a key rationale behind the TOD approach used in Delhi's East Delhi Hub, enabling funding of public transport and urban infrastructure through increased land values.

### **Vizhinjam Deep Water Transit Hub**

The **Vizhinjam Deep Water Transit Hub** is India's first deep-water port located in Kerala. It is designed to handle large container ships with a natural depth of 20 meters without dredging. The port focuses on transshipment, reducing dependency on foreign ports like Colombo. It is strategically positioned near international shipping routes and aims to boost India's maritime trade competitiveness. The project includes modern facilities for cargo handling and is expected to become a major gateway for trade in South Asia. It operates with advanced automation and sustainability practices to minimize environmental impact.

#### WHY IN NEWS?

The Vizhinjam port became operational in 2025, marking milestone in India's maritime infrastructure expansion and enhancing its position in global shipping networks.

### **Wearable Glass Recognition Authentication**

Wearable glass recognition authentication uses biometric facial recognition technology embedded in smart glasses to authorize digital payments. This system integrates with Aadhaar biometric data stored on the user's device for secure verification. It enables hands-free UPI transactions by scanning QR codes and using voice commands, eliminating the need for PIN entry or smartphone interaction. The authentication process occurs entirely on-device, ensuring biometric data privacy. This technology aims to increase accessibility and convenience, particularly for users with limited smartphone proficiency or mobility issues, by leveraging wearable tech for seamless payment authentication.

#### WHY IN NEWS?

The Reserve Bank of India and NPCI introduced biometric and wearable glass recognition authentication for UPI transactions at the Global Fintech Fest 2025 to enhance security and ease of payments.

### **Wholesale CBDC**

Wholesale CBDC is a digital currency issued by central banks designed exclusively for use by financial institutions in large-value interbank transactions. Unlike retail CBDCs, which target the general public, wholesale CBDCs aim to improve efficiency, security, and



settlement speed in the financial system. They facilitate real-time gross settlement and can be used for cross-border payments. As of early 2025, wholesale CBDCs remain in pilot or conceptual stages globally, with limited issuance. India's wholesale CBDC has not been issued yet, despite the RBI's pilot tests, reflecting challenges in adoption and integration with existing banking infrastructure.

#### WHY IN NEWS?

The RBI's wholesale CBDC has not yet been issued as of March 2025, denoting challenges in adoption despite the potential for use in large-value and cross-border transactions.

### Working Poverty

**Working poverty** describes individuals employed but earning below the poverty line. Globally, it has fallen from **28% in 1995 to 7% in 2024**. Working poverty is linked to low wages, insecure contracts, and lack of social protection. It is most common in low-income countries and vulnerable sectors such as agriculture and informal services. Working poverty affects access to education, healthcare, and decent living conditions. Despite the decline, many workers still struggle to meet basic needs. Addressing working poverty requires fair wages, social protection expansion, and labor rights enforcement. It remains a critical challenge for inclusive economic growth.

#### WHY IN NEWS?

The ILO report notes working poverty has decreased but remains a barrier to social equity and economic stability globally.

### World Cotton Day

World Cotton Day is celebrated annually on **October 7** since 2019. It was initiated at the World Trade Organization (WTO) headquarters in Geneva. The day marks cotton's role as one of the most widely produced natural fibers, cultivated in over **75 countries** across five continents. It supports millions, especially in least developed countries (LDCs), as a critical source of income and employment. The day emphasizes sustainable value chains, equitable trade, and technological innovation. The celebration involves organizations like the **Food and Agriculture Organisation (FAO)** and the **International Trade Centre (ITC)**.

#### WHY IN NEWS?

World Cotton Day 2025 is celebrated under the theme *The Fabric of Our Lives* at FAO Headquarters in Rome, denoting cotton's economic and cultural impact globally.

## Geography (Indian & Physical)

### Androth Island, Lakshadweep

Androth is the northernmost inhabited island of the Lakshadweep archipelago in the Arabian Sea. It has a strategic maritime location and is known for its rich marine biodiversity and coral reefs. The island is approximately 4.3 square kilometers in area and supports traditional fishing and coconut cultivation. Historically, Androth has been for maritime trade routes and defense due to its proximity to mainland India and shipping lanes. It is also culturally notable for its unique blend of Muslim traditions and islander



customs within the Lakshadweep group.

#### WHY IN NEWS?

The Indian Navy named the newly commissioned ASW vessel INS Androth after this island, denoting its strategic importance and symbolic connection to India's maritime security.

### Aravali-Delhi Fold Belt

The **Aravali-Delhi fold belt** is a geological formation extending from Gujarat to Delhi, comprising mainly quartzites, schists, phyllites, dolomites, and marbles. It includes rock groups like the **Ajabgarh and Alwar groups** which dominate Haryana's terrain. Intrusive granite forms less than 3% of this region. The belt represents one of the oldest fold mountain ranges, with rocks dating back to the **Paleoproterozoic and Mesoproterozoic eras**. It plays a vital role in regional ecology by acting as a natural barrier against desertification and maintaining groundwater recharge. The belt is crucial for biodiversity and environmental stability in northwestern India.

#### WHY IN NEWS?

Haryana government revised the definition of Aravali hills using geological age and height criteria, impacting protection status of parts of the Aravali-Delhi fold belt, especially in Gurgaon and nearby areas.

### Baratang Mud Volcano

The **Baratang Mud Volcano** is located in the North and Middle Andaman district, about 150 km from Port Blair. It is **India's only known mud volcano** and has been dormant for over two decades before erupting on October 2, 2025. Mud volcanoes form when gases from decaying organic matter push mud and gas to the surface, creating bubbles and craters. The eruption in 2025 produced a 3-4 meter high earth mound and spread muddy soil over 1,000 square meters. The volcano emits mud, water, and gases like methane, without lava. It last erupted in 2005.

#### WHY IN NEWS?

The Baratang Mud Volcano erupted violently on October 2, 2025, after being dormant for over 20 years, causing safety measures and closure of tourist access.

### Coco Islands

The **Coco Islands** are an archipelago in the Bay of Bengal, located less than 100 nautical miles from India's Andaman and Nicobar Islands. The main island's airstrip has been extended to **2,300 meters** to accommodate transport aircraft. The islands are strategically important due to their proximity to India's missile test ranges at Balasore and APJ Abdul Kalam Island. Myanmar controls the islands but has denied the presence of Chinese personnel despite satellite images showing infrastructure development and barracks for over **1,500 military personnel**. A causeway linking Coco with Jerry Island is under construction.

#### WHY IN NEWS?

India is concerned about Chinese surveillance activities on Coco Islands, suspecting use of the islands for monitoring Indian missile tests and naval movements, leading to diplomatic tensions with Myanmar over Indian Navy access requests.



## Durand Line

The **Durand Line** is a 2,600-kilometre border established in 1893 between British India and Afghanistan, now separating Afghanistan and Pakistan. Afghanistan has never officially recognized this boundary. It was drawn by Sir Mortimer Durand to demarcate spheres of influence but divided the ethnic Pashtun tribes. The line is porous and poorly controlled, leading to frequent cross-border militant movement and disputes. The border traverses mountainous terrain, complicating enforcement. It remains a major source of tension between Kabul and Islamabad, contributing to ongoing security challenges and diplomatic strains. The Durand Line's disputed status fuels nationalist sentiments on both sides.

### WHY IN NEWS?

Recent deadly cross-border fighting along the Durand Line has escalated tensions between Afghanistan and Pakistan, disrupting trade routes and prompting military retaliation on both sides.

## Dzükou Valley

Dzükou Valley is a **high-altitude valley** located at the border of Nagaland and Manipur in Northeast India. It is known for its unique biodiversity, including the rare Dzükou lily, which blooms during the monsoon season. The valley is at an elevation of about 2,452 meters and is surrounded by rolling hills and dense forests. It is a popular trekking destination but remains relatively unspoiled due to its remote location. Dzükou Valley experiences frequent fog and has a cool climate year-round. The region is home to several indigenous tribes and supports diverse flora and fauna, some of which are endemic to the area.

### WHY IN NEWS?

Nagaland proposed Dzükou Valley as its official nomination for the national initiative to develop 50 world-class tourist destinations, aiming to boost eco-tourism and preserve its natural ecosystem.

## Galathea Bay

Galathea Bay is a remote location on Great Nicobar Island, approximately **1,200 kilometres from the Indian mainland**. It lacks an urban center, industrial zone, or logistics base, making it unsuitable as a natural cargo hub. The bay is proposed as a site for a mega port intended to serve as a transshipment hub, but it suffers from poor connectivity and absence of feeder services. Operating costs would be high due to the need to ship all supplies, personnel, and fuel from distant locations. Its geographical isolation challenges the feasibility of integrating it into existing maritime trade networks.

### WHY IN NEWS?

Galathea Bay is the proposed site for a new seaport project on Great Nicobar Island, which is under scrutiny for its economic viability and strategic rationale amid environmental and indigenous community concerns.



## Indi Lime

Indi Lime is cultivated mainly in Vijayapura district, Karnataka. It has a **GI (Geographical Indication) tag** due to its unique qualities like zesty aroma, **high juice yield**, and balanced acidity. The lime is prized for its distinctive flavor and is used in culinary dishes, traditional medicine, and cultural practices. The GI tag recognizes its **regional agricultural heritage**. Indi Lime's cultivation supports local farmers by enhancing market value. Its unique qualities are linked to the specific soil and climate of Vijayapura, making it distinct from other lime varieties grown elsewhere in India.

### WHY IN NEWS?

Indi Lime was part of the first-ever air shipment of 350 kg exported from Vijayapura to the UK, marking a milestone in promoting India's GI-tagged horticultural produce globally.

## Kolar Gold Fields

Kolar Gold Fields (KGF) is one of the oldest and deepest gold mines in India, located in Karnataka. Operational since the late 19th century, it was a major gold producer until its closure in 2001 due to declining output and rising costs. The mines extend over 3.5 kilometers underground, making them among the deepest in the world. KGF's geology is part of the Dharwar Craton, rich in gold-bearing quartz veins. The site also played role in India's mining history and inspired the 2018 Indian film "KGF." Despite closure, KGF remains a symbol of dormant mining potential in India.

### WHY IN NEWS?

KGF is mentioned as a dormant asset that could be revived to boost domestic gold production and reduce India's heavy dependence on gold imports.

## Likaru-Mig La-Fukche Alignment

The Likaru-Mig La-Fukche alignment is a newly constructed motorable road route in eastern Ladakh that links Hanle's Likaru village with Fukche near the India-China border. This alignment crosses Mig La Pass at 19,400 feet, facilitating year-round access for remote settlements. It reduces travel time and improves the movement of essential supplies to isolated border communities. The route enhances strategic connectivity near the Line of Actual Control (LAC) and supports both civilian life and military logistics. The road was built by the BRO under Project Himank, overcoming extreme weather and difficult terrain.

### WHY IN NEWS?

The Likaru-Mig La-Fukche road alignment was recently completed, establishing the highest motorable road and improving connectivity for border villages in Ladakh.

## Mig La Pass

Mig La Pass is a mountain pass located in eastern Ladakh at an altitude of **19,400 feet (5,913 metres)**, making it the highest motorable pass in the world as of 2025. It surpasses Umling La Pass, which stands at **19,024 feet**. The pass connects the Hanle region with Fukche village near the Line of Actual Control (LAC) between India and China. The terrain is characterized by loose soil, icy winds, and extreme cold, with oxygen levels nearly half of



those at sea level. The pass is part of a strategic route developed under Project Himank by the Border Roads Organisation (BRO).

#### WHY IN NEWS?

Mig La Pass gained attention after the BRO completed the world's highest motorable road here, surpassing their previous record at Umling La, enhancing connectivity in eastern Ladakh near the LAC.

### Rann of Kutch Tribunal

The Indo-Pakistan Western Boundary Tribunal was established under the 1965 agreement to resolve the Rann of Kutch dispute. Its 1968 report awarded **90% of the disputed territory to India**, excluding Sir Creek from its jurisdiction. The tribunal described the Rann of Kutch as a marsh or swamp and relied on historical evidence, including the 1819 Treaty between the East India Company and Kutch rulers. Pakistan argued for a median line division based on international law, while India maintained that the boundary was land-based and backed by Survey of India maps. The tribunal's decision remains a reference point in boundary discussions.

#### WHY IN NEWS?

The tribunal's findings underpin current territorial claims and disputes, influencing recent military and diplomatic tensions between India and Pakistan.

### Ring of Fire

The Ring of Fire is a horseshoe-shaped zone of frequent earthquakes and volcanic eruptions encircling the Pacific Ocean basin. It contains around **75% of the world's active and dormant volcanoes** and accounts for about **90% of global earthquakes**. The zone stretches over **40,000 km**, passing through countries including Indonesia, Japan, the Philippines, and the west coasts of North and South America. The Ring of Fire is caused by tectonic plate boundaries and subduction zones, where oceanic plates dive beneath continental plates, generating intense seismic activity and volcanism. Indonesia lies within this zone, contributing to its high volcanic activity.

#### WHY IN NEWS?

Indonesia's location on the Ring of Fire explains the frequent volcanic eruptions and seismic events, including the recent activity of Mount Lewotobi Laki Laki.

### Shevaroy Hills

The Shevaroy Hills are a small mountain range located in the Salem district of Tamil Nadu. Known for their cool climate and rich biodiversity, these hills are part of the Eastern Ghats. The region supports coffee plantations at elevations between 1,000 and 1,600 meters. The Shevaroy Hills are home to the famous hill station Yercaud, which has a history of coffee cultivation dating back to the British colonial era. The unique microclimate of the Shevaroy Hills contributes to the distinctive flavor profile of the coffee grown there, making it a valued part of India's coffee diversity.

#### WHY IN NEWS?

Shevaroy Hills are mentioned as one of the key coffee-growing regions contributing to the increasing global popularity of Indian coffee varieties.



## Vijayanagara Region

The **Vijayanagara region** in Karnataka is historically as the site of the Vijayanagara Empire, which flourished from the 14th to 17th centuries. The area is characterized by its rocky terrain, **dry deciduous forests**, and numerous archaeological ruins. It is part of the larger Deccan Plateau and supports diverse ecosystems. The region is increasingly recognized for its **biodiversity hotspots**, including endemic wildlife and plant species. Recent ecological studies have focused on its role as a habitat corridor connecting various protected areas, contributing to species dispersal and genetic diversity.

### WHY IN NEWS?

The discovery of the Indian scops owl near the Daroji Sloth Bear Sanctuary in the Vijayanagara region marks the area's ecological significance and potential for new wildlife research.

## VO Chidambaranar Port

VO Chidambaranar Port, formerly Tuticorin Port, is a deep-water port located on India's southeastern coast in Tamil Nadu. It handles bulk cargo, container traffic, and liquid bulk, serving as important node on the east-west trade route. The port has extensive draft capacity and land availability, making it suitable for green fuel infrastructure development. It is identified as a potential green-fuel hub with plans for storage, pipeline integration, and multi-fuel terminals. The port's strategic location and connectivity support India's ambitions to lead in low-carbon maritime logistics and green shipping corridors.

### WHY IN NEWS?

VO Chidambaranar Port is named as an early candidate for green-fuel hub development under India's \$8 billion maritime ecosystem revitalization plan.

## Yanam

Yanam is a district of the Union Territory of Puducherry, located on the eastern coast of India within Andhra Pradesh. It covers an area of about 30 square kilometers and has a population of approximately 55,000. Yanam was a French colony until 1954 and retains distinct cultural influences from French administration. The official languages are Telugu, Tamil, English, and French. Yanam's economy is primarily based on agriculture, fishing, and small-scale industries. It has a tropical climate and is vulnerable to cyclones originating in the Bay of Bengal. Yanam is administered by the Puducherry government despite being geographically separated from the main territory.

### WHY IN NEWS?

Yanam is mentioned as a coastal region where fishermen have been advised not to venture due to the impending cyclone in the Bay of Bengal forecasted for late October 2025.

## Environment & Ecology

### Acanthamoeba

Acanthamoeba is a genus of free-living amoebae found in soil, freshwater, and other environments. It can cause granulomatous amoebic encephalitis (GAE), a rare but serious



brain infection, especially in immunocompromised individuals. Acanthamoeba enters the body through skin wounds or the respiratory tract. Unlike *Naegleria fowleri*, Acanthamoeba infections have a longer incubation period and often lack a clear epidemiological link to water exposure. It can also cause Acanthamoeba keratitis, an eye infection linked to contact lens use. Diagnosis is challenging due to nonspecific symptoms, and treatment involves prolonged use of antimicrobials, with variable success rates.

#### WHY IN NEWS?

Kerala has reported a spike in amoebic meningoencephalitis cases linked to Acanthamoeba, especially in Thiruvananthapuram district, raising public health concerns and prompting increased surveillance and treatment efforts.

### Adaptation Gap Report

The Adaptation Gap Report is an annual publication by the UN Environment Programme (UNEP) that assesses the difference between climate adaptation needs and the financial resources available globally. It quantifies the funding shortfall in developing countries to adjust to climate impacts like floods, droughts, and heatwaves. The report includes data on adaptation finance flows, national adaptation plans, and the effectiveness of policies. It marks the growing disparity between pledged and actual adaptation funds, emphasizing the urgency of closing this gap to protect vulnerable populations. The 2025 edition is titled 'Running on Empty' and stresses the failure of wealthy nations to meet finance commitments.

#### WHY IN NEWS?

The 2025 Adaptation Gap Report was released ahead of COP30 in Brazil, revealing that adaptation finance needs far exceed current funding, with international public adaptation finance flows declining despite previous pledges.

### All-India Synchronous Elephant Estimation (SAIEE)

The SAIEE is India's first-ever DNA-based elephant population census, conducted jointly by the Ministry of Environment, Forest and Climate Change, Project Elephant, and the Wildlife Institute of India. It uses **genetic sampling of dung** combined with a **mark-recapture statistical model** to estimate elephant numbers more accurately than visual counts. Recently, researchers collected 21,056 dung samples covering **6.7 lakh km** of forest trails. This method avoids duplication and provides a population range rather than a single figure. The SAIEE replaced earlier visual methods and is similar to DNA-based tiger population estimates.

#### WHY IN NEWS?

The 2025 SAIEE report revealed India's wild elephant population estimate of 22,446, marking the first use of DNA-based census methods, replacing previous visual count techniques.

### Altitude Squeeze

Altitude squeeze refers to the phenomenon where warming temperatures force wildlife species to migrate to higher elevations, reducing their habitable range. In the Himalayas,



species like musk deer and snow trout are pushed upward as the mountain range warms faster than the global average. This restricts their living space and threatens biodiversity. The altitude squeeze results in increased competition for resources and potential extinction risks for some species. It is a direct consequence of climate change impacting mountain ecosystems globally, with the Himalayas experiencing ecological shifts due to rapid warming.

#### WHY IN NEWS?

A recent UN report brought into light the altitude squeeze as a growing threat to Himalayan wildlife amid rising regional temperatures.

#### **Apatani Horned Toad**

The **Apatani horned toad (*Xenophrys apatani*)** is a nocturnal amphibian endemic to Arunachal Pradesh. It has **cryptic, leaf-litter-like coloration** that helps it remain undetected during the day. When threatened, it inflates its body, emits a **piercing distress call**, and may bite attackers. This species belongs to the Megophryidae family, known for their horn-like projections above the eyes. It was first described scientifically in 2003. The toad's unique anti-predator behaviour, combining visual inflation and biting, is rare among Indian amphibians and adds to the understanding of defensive strategies in frogs.

#### WHY IN NEWS?

First documentation of the Apatani horned toad's rare anti-predator behaviours, including body inflation and biting, was published by scientists from the University of Delhi in October 2025.

#### **ARISE Cities Forum**

The ARISE Cities Forum is a South Asia-focused platform dedicated to advancing urban resilience and climate action through multilevel governance and collaboration. Established by ICLEI South Asia and the National Institute of Urban Affairs (NIUA), it convenes local, subnational, and national stakeholders to address urban sustainability challenges. The forum emphasizes inclusive climate governance, nature-based solutions, circular economy principles, and equitable green transitions. It promotes South-South and triangular cooperation among Global South cities. The forum also supports enhancing locally determined contributions (LDCs) aligned with Nationally Determined Contributions (NDCs) under the Paris Agreement. It has become a key event for urban climate policy innovation in the region.

#### WHY IN NEWS?

The ARISE Cities Forum 2025 in New Delhi produced the Delhi Declaration on Local Action for Global Climate Goals, a major collective statement to be presented at COP30 in Belém.

#### **Ashtamudi Clam**

The **Ashtamudi clam** is a species of clam native to the Ashtamudi Lake in Kerala. It was the first Indian fishery to receive MSC certification for sustainable harvesting practices. The clam fishery supports local livelihoods and contributes to the region's biodiversity. The



population of Ashtamudi clam is monitored regularly to ensure sustainable stock levels. The certification was lapsed but is currently under re-certification to maintain sustainable exploitation. The clam is prized for its taste and is exported to international markets, making it an important species for local fisheries and eco-label promotion.

#### WHY IN NEWS?

The Ashtamudi clam fishery is undergoing re-certification under MSC as part of India's initiative to promote sustainable seafood exports.

### **Bahuda Estuary**

The Bahuda estuary is located along the Odisha-Andhra Pradesh border on India's east coast, draining into the Bay of Bengal. It is an ecologically region supporting diverse aquatic species and serves as a critical habitat for endemic and commercially important fish. The estuary's unique environmental conditions contribute to high biodiversity, including the presence of newly discovered species like *Pseudorhombus bahudaensis*. It is part of a larger coastal ecosystem that influences fisheries management and conservation efforts in the region. The estuary's biodiversity importance is increasingly recognized in marine research and environmental protection policies.

#### WHY IN NEWS?

The Bahuda estuary gained attention due to the discovery of a new flounder species, emphasizing its role as a biodiversity hotspot and its significance for sustainable fisheries management.

### **Bali Action Plan**

The **Bali Action Plan** was adopted at COP 13 in 2007 to advance the implementation of the UNFCCC. It created an Ad Hoc Working Group on Long Term Cooperative Action tasked with negotiating a comprehensive climate agreement. The plan is structured around four pillars – mitigation, adaptation, finance, and technology. It emphasized measurable, reportable, and verifiable climate actions by developing countries, supported by finance and technology from developed countries. The Bali Action Plan set the stage for the Copenhagen Summit in 2009 and aimed to bridge differences between developed and developing countries on climate commitments.

#### WHY IN NEWS?

The Bali Action Plan is referenced in 2025 discussions as a benchmark for meaningful climate commitments and support to developing countries, contrasting with weaker post-2015 agreements.

### **Bansagar Backwaters**

Bansagar Backwaters are part of the Bansagar Dam reservoir located near the Byawari region in Shahdol district. The area features ample water supply, dense bamboo forests, and hilly terrain, creating a favorable habitat for Asian elephants. A group of 19 elephants has been residing here for several months, using the region for food and shelter. The backwaters are part of a larger ecosystem supporting diverse flora and fauna. The region's water body and forest cover contribute to sustaining wildlife populations,



especially during dry seasons, making it a critical ecological zone for elephant conservation.

#### WHY IN NEWS?

The presence of a stable elephant herd in the Bansagar Backwaters area has been noted during recent monitoring efforts using the Gaj Rakshak app, emphasizing the area's ecological importance.

### **Barnawapara Wildlife Sanctuary**

Barnawapara Wildlife Sanctuary is located in Balodabazar district, Chhattisgarh. It covers an area of approximately 245 square kilometers and is known for its diverse flora and fauna, including tigers, leopards, and various deer species. The sanctuary features mixed deciduous forests, grasslands, and water bodies, providing a suitable habitat for wildlife. It was the site of blackbuck reintroduction program starting in 2018, aimed at reviving a species locally extinct for 50 years. The sanctuary's management includes habitat restoration, anti-poaching measures, and continuous wildlife monitoring to support conservation efforts.

#### WHY IN NEWS?

Barnawapara Wildlife Sanctuary is in the news for successfully reintroducing blackbucks after their local extinction, with plans to replicate this model across Chhattisgarh's protected areas.

### **Beels of Brahmaputra**

Beels are natural wetlands or water bodies found in the Brahmaputra valley, primarily in Assam. They act as crucial flood buffers by absorbing excess water during monsoon rains, reducing downstream flood risks. Beels support diverse ecosystems, including fish breeding and migratory birds. Many beels have been degraded due to encroachment, pollution, and siltation, which exacerbates flood vulnerability in surrounding areas. Restoration efforts involve desiltation, embankment repair, and community-based management to rejuvenate these wetlands. The beels also contribute to groundwater recharge and local livelihoods through fisheries and agriculture.

#### WHY IN NEWS?

The NDMA has emphasized rejuvenating beels as part of nature-based solutions to mitigate urban floods and improve disaster resilience in northeastern India.

### **Bio-bitumen from Stubble**

Bio-bitumen is a sustainable road construction material produced using agricultural stubble, primarily wheat and rice residue. India uses about **5 million tons of stubble** annually to produce bio-bitumen, which replaces traditional petroleum-based bitumen in road paving. This reduces agricultural waste burning, decreasing air pollution and providing farmers with an alternative income source. Roads in Maharashtra, Nagpur, and Jabalpur have been constructed using bio-bitumen. The process supports circular economy principles by converting biomass waste into a valuable construction resource, contributing to environmental and economic benefits.



## WHY IN NEWS?

The use of stubble-based bio-bitumen in road construction was brought into light during the inauguration event to emphasize sustainable infrastructure and pollution reduction efforts.

**Blue Flag Certification**

The **Blue Flag certification** is an international eco-label awarded by the Foundation for Environmental Education (FEE), based in Denmark. It recognizes beaches and marinas that meet **33 strict criteria** including water quality, environmental education, safety, and sustainable management. Established in 1985, the program promotes sustainable tourism and environmental awareness. To maintain the certification, beaches must undergo annual assessments. Over 4,000 beaches and marinas worldwide have received this certification. It encourages local authorities to improve infrastructure and environmental practices, encouraging global standards in coastal conservation and public health.

## WHY IN NEWS?

Five beaches in Maharashtra, including Shrivardhan and Nagaon, received the Blue Flag certification, denoting their compliance with international environmental and cleanliness standards.

**Brahmaputra Basin Wetlands**

The **24 wetlands across nine districts** of the Brahmaputra basin in Assam are critical for flood storage and erosion control. These wetlands support aquatic ecosystems and fisheries, providing livelihood to local communities. The restoration project funded with Rs 692.05 crore aims to enhance flood resilience and ecosystem protection. Assam contributes 25% of the cost, while the Centre covers 75%. The wetlands serve as natural buffers against floods and help maintain biodiversity in the region. This pilot initiative is part of a larger plan to create a **“flood-proof Brahmaputra valley.”**

## WHY IN NEWS?

The High-Level Committee approved Rs 692.05 crore for restoration and rejuvenation of these wetlands as part of flood mitigation efforts in Assam under the National Disaster Mitigation Fund.

**Bukhara Deer**

The **Bukhara deer** (*Cervus elaphus bactrianus*) is a subspecies of red deer native to Central Asia, primarily found in riparian forests along the Amu Darya and Syr Darya rivers. It is classified as endangered due to habitat loss and poaching. Conservation efforts include captive breeding and habitat restoration. The Bukhara deer can swim well and is adapted to floodplain environments. Its antlers are shed annually. It was once widespread across Central Asia but now survives in fragmented populations in Uzbekistan, Tajikistan, and Turkmenistan.

## WHY IN NEWS?

The Bukhara deer's conservation successes were brought into light during the recent CAMI meeting, emphasizing its role as a flagship species for regional habitat protection.



## Bureau of Energy Efficiency (BEE)

The **Bureau of Energy Efficiency (BEE)** was established on March 1, 2002 under the Energy Conservation Act, 2001, to reduce the energy intensity of the Indian economy. BEE operates through policy development, self-regulation, and market mechanisms. It coordinates with designated consumers and agencies to implement energy efficiency measures and promotes regulatory and promotional functions. BEE also manages energy labeling and standards for appliances and buildings. It plays a key role in achieving India's Nationally Determined Contributions (NDCs) under the Paris Agreement by encouraging energy conservation and sustainable development.

### WHY IN NEWS?

BEE is the organizing body for the 35th National Energy Conservation Awards 2025, facilitating applications and evaluations through its online portal.

## Calcium Carbide Guns

Calcium carbide guns are homemade explosive devices made by combining calcium carbide with water inside a plastic pipe, ignited with a spark from a gas lighter. The reaction produces acetylene gas, which explodes inside the pipe. The explosion propels plastic pipe fragments as shrapnel, causing injuries mainly to the eyes, face, and skin. These crude devices are often used during festivals like Deepavali in parts of India. Calcium carbide is industrially used for acetylene production and steelmaking but is toxic and banned for food use in many countries. Injuries from these guns can cause permanent blindness and burns.

### WHY IN NEWS?

More than 100 children in Bhopal and Vidisha districts were hospitalized with injuries from calcium carbide guns used during Deepavali celebrations in October 2025, prompting government action and calls for banning their manufacture and sale.

## CAM Photosynthesis

CAM (Crassulacean Acid Metabolism) photosynthesis is a water-efficient process used by some plants in arid environments. It allows stomata to open at night to fix CO<sub>2</sub>, reducing water loss during hot days. CAM plants store CO<sub>2</sub> as organic acids and use it during daylight for photosynthesis. This adaptation is common in succulents and cacti but rare in plants that can switch between CAM and C<sub>3</sub> photosynthesis. The ability to switch is controlled genetically and allows plants to optimize survival and growth depending on water availability and environmental stress.

### WHY IN NEWS?

Researchers are investigating CAM photosynthesis in *Cistanthe longiscapa* to uncover genetic mechanisms that could be applied to improve crop drought tolerance.

## Capital Breeders

Capital breeders are species that accumulate and store energy reserves prior to reproduction, relying on these reserves to support pregnancy, birth, and nursing without continuous feeding. Southern right whales are capital breeders, feeding intensively in the



Southern Ocean to build fat stores, then fasting during calving and nursing periods in coastal areas. This reproductive strategy links their breeding success directly to the availability of food in distant feeding grounds. Changes in food availability can extend calving intervals and reduce calf survival. Capital breeding is common in marine mammals and some birds, reflecting adaptation to seasonal resource availability.

#### WHY IN NEWS?

Southern right whales' reproductive slowdown and increased calving intervals off South Africa indicate stress on their energy reserves, denoting environmental disruption in their Southern Ocean feeding grounds.

### **Carbon Border Adjustment Tax**

The **Carbon Border Adjustment Tax** (CBAT) is a tariff imposed by some countries, primarily in the European Union, on imported goods based on their carbon emissions during production. It aims to prevent "carbon leakage," where companies relocate production to countries with lax environmental regulations. The tax incentivizes cleaner production worldwide and supports domestic industries adopting greener technologies. CBAT affects energy-intensive sectors like steel and cement. Despite its environmental goals, some countries criticize it as a protectionist trade barrier. The tax's implementation timeline and exact calculation methods vary among jurisdictions, influencing global trade dynamics and energy policies.

#### WHY IN NEWS?

The text marks CBAT as part of global energy policy complexity, noting EU's use of this tax alongside contradictory coal mine reopenings, illustrating the tension between environmental goals and economic interests.

### **Carbon Capture and Storage (CCS)**

Carbon Capture and Storage (CCS) is a technology that captures carbon dioxide emissions from industrial sources and power plants, transporting and storing them underground in geological formations. CCS aims to prevent CO<sub>2</sub> from entering the atmosphere to mitigate climate change. Capture rates vary, often reaching only about **50%** efficiency despite industry claims of **90-95%**. CCS can double electricity costs compared to renewable energy with storage. Geological storage sites include depleted oil and gas fields, deep saline aquifers, and unmineable coal seams. CCS is considered a bridge technology but faces economic, technical, and environmental challenges.

#### WHY IN NEWS?

The report marks Asia's growing interest in CCS, especially in Japan, South Korea, and Australia, but warns of risks such as locking in fossil fuel dependence and economic costs.

### **Carbon Fertilisation Effect**

The **carbon fertilisation effect** refers to the increased rate of photosynthesis in plants due to elevated atmospheric CO<sub>2</sub> levels. This phenomenon enhances plant growth and biomass accumulation, especially in forests and crops. It was first observed in controlled experiments in the 1950s and has been increasingly studied in natural ecosystems. The



effect varies by species and environmental conditions such as nutrient availability and water supply. In tropical forests like the Amazon, it can lead to larger tree sizes and increased carbon sequestration. However, its long-term impact may be limited by other factors like soil nutrients and climate change.

#### WHY IN NEWS?

The carbon fertilisation effect is central to a recent study showing Amazon rainforest trees are growing larger due to rising atmospheric CO<sub>2</sub>, increasing their carbon storage capacity.

### Carbon Pricing Markets

Carbon pricing markets are systems where carbon emission reductions can be bought and sold as tradable credits. These markets incentivize emission cuts by assigning a cost to carbon. The two main types are carbon taxes and cap-and-trade systems. India has expressed interest in developing carbon markets but prefers projects that combine solar energy with storage technologies to ensure reliability. Carbon markets aim to balance environmental goals with economic incentives and can include international trading of carbon credits. They are regarded as tools to help countries meet Nationally Determined Contributions (NDCs) under the Paris Agreement by promoting cost-effective emission reductions.

#### WHY IN NEWS?

Carbon pricing is discussed as a strategic approach for India and other countries to meet emission targets and attract investment, with India considering a prioritized list of projects for international carbon markets ahead of COP30.

### Caucasian Leopard

The **Caucasian leopard** (*Panthera pardus saxicolor*) is a subspecies native to the Caucasus region, including Armenia. It is classified as **Critically Endangered** due to habitat loss, poaching, and prey depletion. This leopard is larger and more robust than other leopard subspecies, adapted to mountainous terrain. Its population is estimated at fewer than 200 mature individuals in the wild. Conservation efforts include habitat protection, anti-poaching patrols, and cross-border initiatives between Armenia, Georgia, and Russia. Genetic studies show it has unique adaptations to cold climates. It plays a key role in maintaining local ecosystem balance by controlling herbivore populations.

#### WHY IN NEWS?

The Caucasian leopard is brought into light as a key species in Armenia's biodiversity conservation efforts following its recent IUCN membership and preparations for hosting COP17 on biodiversity.

### Cesium-137 Contamination

Cesium-137 (Cs-137) is a radioactive isotope produced by nuclear fission with a half-life of about 30.17 years. It emits beta and gamma radiation, posing health risks such as increased cancer risk upon prolonged exposure. Cs-137 contamination can occur from nuclear accidents, improper disposal of radioactive waste, or illicit use. It is water-soluble



and can be absorbed by plants and animals, entering the food chain. Detection in agricultural products often leads to recalls and trade restrictions. Cs-137 is also used in medical radiation therapy and industrial gauges, but accidental release or contamination poses serious environmental and health hazards.

#### WHY IN NEWS?

Indonesian authorities found Cesium-137 contamination in spices and shrimp, prompting export bans and increased inspections to prevent further spread and protect public health.

### **Chambal River Sanctuary**

The Chambal River Sanctuary, established in 1979, spans across Uttar Pradesh, Madhya Pradesh, and Rajasthan in India. It is the last stronghold for the gharial, hosting about 80% of the wild adult population. The sanctuary also protects other endangered species like the Ganges river dolphin and the red-crowned roof turtle. It is known for its relatively undisturbed river stretches, sandbanks essential for gharial nesting, and free-flowing water crucial for their ecology. The sanctuary is a rare example of a multi-state protected area focused on riverine biodiversity conservation in India.

#### WHY IN NEWS?

The Chambal sanctuary remains the only viable breeding site for gharials in the wild, crucial for conservation efforts brought into light in the recent IUCN report.

### **Changthang Wildlife Sanctuary**

The **Changthang Wildlife Sanctuary** in Ladakh was notified in 1987 with an area near 4,000 sq km and is now proposed to expand to 9,695 sq km. It includes 17 identified High Conservation Value Areas (HCVAs). The sanctuary is a high-altitude cold desert ecosystem, hosting rare species such as the Tibetan antelope (chiru). The proposal excludes 164 sq km around human habitation pockets to enable local economic activities. The area is important for both biodiversity conservation and sustaining livelihoods dependent on tourism and traditional practices.

#### WHY IN NEWS?

The sanctuary's boundaries are being revised to correct earlier mapping errors, improve conservation efforts, and unlock economic potential for local residents through eased regulations.

### **Chennai Declaration**

The Chennai Declaration is a 2012 consensus document developed by Indian medical societies to combat antimicrobial resistance (AMR) in India. It outlines practical strategies for antibiotic stewardship, infection control, and surveillance tailored to India's healthcare system. The declaration emphasizes the need for regulatory reforms, improved diagnostics, and public awareness. It was the first major national-level response to AMR in India, involving clinicians, microbiologists, and policymakers. Despite limited enforcement mechanisms, it has influenced AMR policy discussions and inspired similar initiatives in other low- and middle-income countries.



## WHY IN NEWS?

The Chennai Declaration is referenced as a key initiative that emerged from early AMR awareness efforts in India following the NDM controversy and ongoing global resistance challenges.

**Chief Wildlife Warden**

The **Chief Wildlife Warden** is the highest-ranking official responsible for wildlife conservation and enforcement of the Wildlife (Protection) Act in state of Indias. This officer oversees protected areas, anti-poaching efforts, and species protection measures. The Kerala amendment grants the Chief Wildlife Warden authority to order killing, tranquilizing, capturing, or translocating animals that have severely injured humans. Typically, this role involves coordination with forest departments, law enforcement, and conservation bodies. The position requires balancing ecological protection with public safety, often navigating complex human-animal conflict scenarios. The Chief Wildlife Warden's decisions can have ecological and legal implications.

## WHY IN NEWS?

The amendment empowers Kerala's Chief Wildlife Warden with new powers to manage dangerous wildlife incidents, including lethal action against animals causing harm.

**Chronic Wasting Disease (CWD)**

Chronic Wasting Disease is a **fatal neurodegenerative disease** affecting deer, elk, and moose, caused by abnormal prion proteins that damage brain tissue. It leads to symptoms like weight loss, behavioral changes, excessive salivation, and death. The disease spreads through direct contact between animals and indirectly via contaminated environments, including soil, plants, and water. Prions can remain infectious in the environment for years. CWD has no known cure or vaccine, and while no human cases have been confirmed, prions from related diseases have caused human illnesses elsewhere. Scavengers and hunters using natural lures can unintentionally spread the disease further.

## WHY IN NEWS?

Florida confirmed its second case of CWD in a wild deer, prompting the launch of an emergency response plan including enhanced testing and surveillance in affected counties near the Alabama border.

**Cloud Seeding**

Cloud seeding is a weather modification technique that involves dispersing substances like **silver iodide** or **sodium chloride** into clouds to induce precipitation. It requires clouds with moisture content typically above **50%** to be effective. The process uses aircraft or ground-based generators to release seeding agents. Silver iodide acts as ice nuclei, encouraging the formation of raindrops in supercooled clouds. Cloud seeding has been used since the 1940s in various countries for drought relief, hail suppression, and pollution control. Its success depends on atmospheric conditions, and it cannot create rain from clear skies or very dry clouds.



## WHY IN NEWS?

Delhi conducted its first cloud seeding trial on October 23, 2025, aiming to reduce winter pollution by inducing artificial rain using silver iodide and sodium chloride released from an aircraft over the Burari area.

**Cloudbursts**

Cloudbursts are sudden, intense rainfall events caused when warm, moist monsoon winds collide with cold air masses over mountainous regions, rapidly forming cumulonimbus clouds. Strong updraughts trap raindrops, allowing massive water accumulation that precipitates suddenly when these updraughts weaken. Cloudbursts typically occur in the Himalayas, triggering flash floods and debris flows due to steep terrain and narrow valleys. Between June and August 2024, Himachal Pradesh experienced 51 cloudbursts causing 31 deaths and 33 missing persons. The rapid and localized nature of cloudbursts makes them difficult to predict accurately beyond a short time frame.

## WHY IN NEWS?

Cloudbursts have caused devastating flash floods and landslides in the Himalayan region during 2024 and 2025, contributing to loss of life and property.

**Coalition for Disaster Resilient Infrastructure (CDRI)**

The **Coalition for Disaster Resilient Infrastructure (CDRI)** is a global partnership initiated by India in 2019 to promote the resilience of infrastructure systems against natural disasters. It brings together governments, UN agencies, financial institutions, and private sector actors. CDRI focuses on knowledge sharing, capacity building, and financing resilient infrastructure projects. It aims to reduce economic losses and protect communities by integrating disaster risk reduction into infrastructure planning and development. The coalition is headquartered in New Delhi, and emphasizes innovation and predictable climate finance mechanisms to support vulnerable countries.

## WHY IN NEWS?

France and India co-chair the CDRI, advocating for innovative climate finance such as global solidarity levies, brought into light as a priority at COP30 for a just and inclusive climate transition.

**Coastal Regulation Zone (CRZ) Notification, 2011**

The Coastal Regulation Zone (CRZ) Notification, 2011 governs development activities along India's coastlines to protect fragile coastal ecosystems. It categorizes coastal areas into zones with varying levels of protection and restrictions on construction and industrial activities. The notification requires environmental clearances for projects in these zones and mandates public consultation. It operates under the Environment (Protection) Act, 1986, separate from the EIA Notification, 2006. The CRZ rules emphasize conservation of mangroves, coral reefs, and marine biodiversity. Its regulatory framework has been periodically updated to balance ecological protection with sustainable coastal development.

## WHY IN NEWS?

The Supreme Court's 2025 verdict on retrospective clearances did not address CRZ



Notification, 2011, creating legal ambiguity for coastal projects and complicating environmental governance in coastal regions.

### **Common but Differentiated Responsibility (CBDR)**

The **Common but Differentiated Responsibility and Respective Capabilities (CBDR)** principle was established under the UNFCCC in 1992. It acknowledges that while all countries are responsible for addressing climate change, developed nations bear greater responsibility due to their historical emissions and greater financial and technological capacities. It mandates that developed countries lead in mitigation efforts and provide financial and technological support to developing countries. CBDR forms the foundation of international climate negotiations, influencing mechanisms for emissions reduction, finance, and technology transfer. It remains a key point of contention in global climate diplomacy, especially between developed and developing nations.

#### WHY IN NEWS?

CBDR continues to be a central issue in climate talks, including COP 30 in 2025, where developing countries emphasize its importance amid weakening commitments by developed nations.

### **Community Reserves**

Community reserves in India are protected areas managed jointly by local communities and the government, established under the Wildlife Protection Act, 2002. Their number has increased from 115 in 2014 to 343 in 2024, reflecting growing community involvement in conservation. These reserves often protect habitats and species not covered by national parks or wildlife sanctuaries. They allow sustainable use of natural resources by locals, balancing conservation with livelihoods. Community reserves help preserve biodiversity hotspots and cultural landscapes, especially in tribal and rural areas. They also play a role in monitoring and managing human-wildlife conflicts through local participation.

#### WHY IN NEWS?

Community reserves have seen increase in number as part of India's expanded protected-area network, supporting conservation efforts alongside national parks and wildlife sanctuaries.

### **Corbett Tiger Reserve (CTR)**

The **Corbett Tiger Reserve** in Uttarakhand, was established in 1936 as Hailey National Park and renamed after Jim Corbett, a hunter turned conservationist. It spans over **520 square kilometers** and is part of the Terai Arc Landscape, a vital ecological corridor. CTR is the oldest national park in India and a key habitat for the Bengal tiger. It also supports over **600 species of plants** and a diverse range of fauna, including mammals, reptiles, and birds. The reserve plays a critical role in tiger conservation and biodiversity preservation in the Himalayan foothills.

#### WHY IN NEWS?

CTR is in the news for a recent survey revealing **30 species of raptors** residing in the reserve, including nests of nine species, denoting its importance for avian predators



alongside tigers.

### **Cyclone Montha**

Cyclone Montha is a tropical cyclone name contributed by Thailand for storms in the north Indian Ocean. The naming system for cyclones in this region is maintained by the World Meteorological Organization's regional body, with names contributed by eight countries. Cyclone Montha is not a recurring name but part of a rotating list used sequentially. The name means "month" in Thai. Cyclones in the Bay of Bengal are common between April and December, with the Northeast monsoon season contributing to their formation. Montha is expected to become a cyclonic storm, strengthening from a low-pressure area to a deep depression before intensifying further.

#### WHY IN NEWS?

Cyclone Montha is forecasted to develop over the Bay of Bengal and is expected to cause heavy rainfall and possible landfall impacts in north Tamil Nadu by early October 2025.

### **Cyclone Shakhti**

Cyclone Shakhti formed over the northeast Arabian Sea on October 3, 2025. It was named by Sri Lanka, following the regional naming convention for cyclones in the Indian Ocean. Shakhti intensified rapidly, reaching severe cyclonic storm status by October 4. It initially moved west-southwestwards before expected to recurve east-northeastward by October 6. The cyclone's center was located approximately 340 km west of Dwarka at 1800 UTC on October 3. It posed risks to maritime activities along the Gujarat-north Maharashtra coasts. The Arabian Sea has shown increased cyclonic activity in recent years due to warming sea temperatures.

#### WHY IN NEWS?

Cyclone Shakhti was confirmed by the India Meteorological Department on October 3, 2025, with warnings issued for fishermen and coastal areas due to its rapid intensification and trajectory over the Arabian Sea.

### **Daroji Sloth Bear Sanctuary**

The **Daroji Sloth Bear Sanctuary** is located in Karnataka, and was established in 1994 to protect the sloth bear (*Melursus ursinus*). It covers approximately **82.72 square kilometers** of dry deciduous forest and rocky terrain. The sanctuary supports a diverse range of flora and fauna, including several endemic and endangered species. It is one of the few protected areas focused specifically on sloth bear conservation. The sanctuary also serves as a research site for wildlife biologists and conservationists studying bear behavior, habitat use, and human-wildlife conflict mitigation.

#### WHY IN NEWS?

The sanctuary gained attention after the first-ever sighting of the Indian scops owl, denoting its expanding role in regional biodiversity conservation.

### **Deendayal Port Authority**

Deendayal Port Authority, located in Gujarat, is one of India's major ports on the west coast. It is named after Pandit Deendayal Upadhyaya, a prominent political thinker. The



port specializes in handling coal, crude oil, and container cargo. It has a natural deep-water harbor, allowing it to accommodate large vessels. The port plays a critical role in India's maritime trade, especially for western India. It is also equipped with modern facilities to support bulk and liquid cargo. The port has been increasingly focusing on sustainable practices and infrastructure modernization to support green energy initiatives.

#### WHY IN NEWS?

Deendayal Port Authority was recently recognized as a Green Hydrogen Hub under India's green hydrogen mission, denoting its role in sustainable energy transition and industrial development.

### Deep Chiselling

**Deep chiselling** is an agricultural soil management technique used to break up compacted soil layers and mix silt deposits into native soil. It involves using specialized machinery with deep tines to penetrate and loosen heavy soils. This process improves root penetration, soil aeration, and water infiltration. Deep chiselling is particularly effective in flood-affected areas with thick silt layers up to nine inches. It helps restore soil structure and fertility by reducing compaction caused by prolonged waterlogging. The technique is recommended before sowing crops to ensure healthier plant growth and better nutrient uptake.

#### WHY IN NEWS?

Agricultural experts recommended deep chiselling in Punjab's flood-affected regions in 2025 to manage silt deposits and restore soil conditions ahead of the rabi crop season.

### Dholera Mangrove Restoration

Mangrove restoration near **Dholera** in Gujarat began about five years ago under the state Forest Department. The planted mangroves now cover over **3,500 hectares** along the Dholera coast. This restoration has led to increased biodiversity, including a rise in dolphin populations, crabs, and migratory birds. The area serves as a natural bio-shield protecting the coast and supporting aquatic ecosystems. The success at Dholera has been cited as a model of effective mangrove restoration contributing to both environmental and economic benefits in coastal Gujarat.

#### WHY IN NEWS?

Prime Minister Narendra Modi brought into light the Dholera mangrove restoration in his 'Mann ki Baat' program as an example of successful ecosystem restoration under MISHTI.

### Early Warning Systems (EWS) in Himalayas

Early Warning Systems (EWS) are technologies and protocols designed to detect and predict natural disasters like landslides, floods, and storms. In the Himalayas, EWS face challenges such as rugged terrain, lack of mobile network coverage, and harsh weather. There is no indigenous, low-cost, weather-proof EWS yet capable of live multi-parameter data transmission operable by local communities. AI models are increasingly considered for processing real-time data to provide credible warnings. Existing systems include sub-



kilometre scale hailstorm alerts for apple orchards in Uttarakhand and Himachal. Training locals to maintain and respond to EWS is crucial for effectiveness.

#### WHY IN NEWS?

Experts stress the urgent need for scalable, AI-aided EWS across Himalayan valleys to mitigate increasing disaster risks amid climate change.

### **Elephant Corridors in Assam**

Elephant corridors are narrow strips of forest connecting larger habitats, allowing elephants to migrate safely. In Assam and adjoining Northeast Frontier Railway zones, corridors like Madarihat–Nagrakata and Titabar–Mariani–Nakachari are critical for elephant movement. These corridors are often intersected by railway lines, increasing human-wildlife conflicts. The corridors span varying lengths, with some sections covering over 60 km. Maintaining these corridors is vital for genetic diversity and reducing elephant mortality from train collisions. Efforts include fencing, monitoring, and technological interventions like IDS to ensure safe passage for elephants and reduce accidents.

#### WHY IN NEWS?

The IDS pilot project specifically targets railway sections passing through elephant corridors in Assam and neighboring states, aiming to protect wildlife and reduce train accidents.

### **Eravikulam National Park**

Eravikulam National Park, located in Kerala's Idukki district, is part of the Western Ghats and is renowned for its unique high-altitude grasslands and shola forests. It is home to the endangered Nilgiri Tahr and hosts a rich diversity of endemic flora and fauna. The park is situated at elevations ranging from 1,500 to 2,695 meters above sea level. It plays a critical role in conserving the biodiversity of the region and supports several rare plant species, including the newly discovered *Tetrataenium manilalianum*. The park is also a key area for ecological research and biodiversity monitoring.

#### WHY IN NEWS?

Eravikulam National Park gained attention due to the discovery of a new plant species, *Tetrataenium manilalianum*, within its boundaries, denoting its biodiversity significance.

### **Garbage Café**

The Garbage Café is a community-driven initiative in Ambikapur, Chhattisgarh, where residents exchange plastic waste for food. For every kilogram of plastic deposited, a person receives a full meal; half a kilogram earns a snack. This model encourages cleanliness and recycling by linking waste management with social welfare. It promotes environmental awareness and reduces plastic pollution in the city. The initiative is part of broader efforts to make Ambikapur a plastic-free city, aligning with the Swachh Bharat mission. It also encourages community cooperation and social responsibility through a unique incentive system.

#### WHY IN NEWS?

Prime Minister Narendra Modi praised Ambikapur's Garbage Café in his Mann Ki Baat address, denoting it as a model of cleanliness and social awareness contributing to a



greener India.

### Gerukamukh

Gerukamukh is a **strategic site** located in the foothills of the Eastern Himalayas, on the Assam–Arunachal Pradesh border. It is characterized by complex geology and lies within a high seismic risk zone. The area is ecologically sensitive with rich biodiversity and is home to several indigenous communities. Gerukamukh's terrain and seismic vulnerability necessitated engineering adaptations for the Subansiri Lower Hydroelectric Project, including enhanced seismic reinforcements and spillway modifications. The site has been a focal point of environmental debates and local protests due to fears of ecological disruption and downstream flooding.

#### WHY IN NEWS?

Gerukamukh is the location of the Subansiri Lower Hydroelectric Project, which recently began commissioning its first turbine unit after years of suspension and redesign.

### Gharial Ecology Project

The Gharial Ecology Project is a long-term research initiative focused on studying the gharial's population dynamics, habitat requirements, and threats in India. Led by experts like Prof Jeffery Lang and Jailabdeen A, the project emphasizes identifying stronghold habitats to prioritize conservation. It investigates the impact of dams, sand mining, and fishing nets on gharial survival and breeding success. The project also supports community-led nest protection programs, such as those on Nepal's Rapti river, demonstrating the role of local participation in species recovery.

#### WHY IN NEWS?

The Gharial Ecology Project provides critical data and management recommendations underpinning the IUCN's recent assessment and ongoing conservation strategies for the species.

### Global Burden of Disease (GBD) Report

The **Global Burden of Disease (GBD) Report** is a comprehensive global research program that quantifies mortality and morbidity from major diseases, injuries, and risk factors. It is coordinated by the Institute for Health Metrics and Evaluation (IHME) and involves over 16,500 collaborators worldwide. The GBD uses age-standardized mortality rates (ASMR) to compare disease burden across countries and time. It covers more than 350 diseases and injuries and over 80 risk factors. The data informs policymakers and health professionals to prioritize healthcare interventions. The report is published regularly in The Lancet and updated with new methodologies and data sources.

#### WHY IN NEWS?

The 2025 GBD report marks the shift in India's mortality causes from infectious diseases to non-communicable diseases, with ischaemic heart disease now the leading cause of death.

### Green Highway (Samruddhi Expressway)

The Samruddhi Expressway is India's first green highway, integrating wildlife-friendly



infrastructure such as overpasses, underpasses, and fencing designed in consultation with the Wildlife Institute of India. These structures facilitate safe animal movement and reduce roadkill, supporting species like tigers and leopards. The highway's design incorporates ecological considerations, aiming to maintain landscape connectivity and biodiversity. It is part of a broader national effort to mainstream green infrastructure in transport projects. The expressway demonstrates how infrastructure development can coexist with wildlife conservation by embedding ecological safeguards from planning to execution.

#### WHY IN NEWS?

The Samruddhi Expressway exemplifies India's adoption of smart green linear infrastructure to protect wildlife, following successful models like the NH-44 upgrade through Pench Tiger Reserve.

### **Green Hydrogen**

Green hydrogen is hydrogen produced through water electrolysis powered by renewable energy sources like wind or solar, resulting in zero carbon emissions. It serves as a clean fuel alternative for industries, transportation, and power generation. Unlike grey hydrogen, which is derived from fossil fuels, green hydrogen contributes to reducing greenhouse gas emissions. It plays a critical role in energy transition strategies globally, particularly in decarbonizing sectors difficult to electrify. Production costs have been decreasing due to technological advances and increased renewable energy capacity. Countries investing in green hydrogen aim to establish export markets and energy security.

#### WHY IN NEWS?

India and Canada have committed to investing in green hydrogen projects under their new bilateral roadmap to support clean energy goals and climate change mitigation.

### **Greenhouse Gas Bulletin**

The Greenhouse Gas Bulletin is an annual report published by the World Meteorological Organization (WMO) since 2005. It provides authoritative data on atmospheric concentrations of key greenhouse gases – carbon dioxide, methane, and nitrous oxide. The bulletin tracks long-term trends and annual increases, using measurements from global monitoring stations that date back to 1957. It marks the impact of human activities on climate change and informs international climate policy. The 21st edition reported record highs for all three gases in 2024, with CO<sub>2</sub> levels reaching 424 ppm, the largest one-year increase ever recorded. The bulletin is critical for tracking progress toward climate goals.

#### WHY IN NEWS?

The WMO released the 2024 Greenhouse Gas Bulletin showing record concentrations and the largest annual CO<sub>2</sub> increase since measurements began.

### **Gul-e-Dawood (Chrysanthemum)**

Gul-e-Dawood, the local name for chrysanthemum in Kashmir, was introduced from China



centuries ago. It comprises over 50 varieties, including Mount Aubisque Apricot and Aristic Dark Pink. The flowers bloom from autumn until early winter, surviving temperatures as low as **minus 10°C** and the first snowfall. Traditionally used as a culinary herb, chrysanthemum flowers are brewed into teas in Kashmir. The plant's petals have influenced local artisans, especially papier-mâché artists, for their vibrant colors. The flower's blooming period offers a unique attraction during Kashmir's otherwise lean autumn tourism season.

#### WHY IN NEWS?

Kashmir inaugurated Bagh-e-Gul-e-Dawood, a chrysanthemum theme park at Zabarwan hills, aiming to boost autumn tourism with 30 lakh blooms, complementing the popular Tulip Garden's spring appeal.

### **Hastinapur Wildlife Sanctuary**

The **Hastinapur Wildlife Sanctuary** is located in Uttar Pradesh, covering approximately 207 square kilometers. It is part of the Terai region and is known for its rich biodiversity, including tigers, leopards, and various deer species. The sanctuary is historically , named after the ancient city of Hastinapur, the capital of the Kuru kingdom in the Mahabharata epic. It functions as a critical wildlife corridor connecting other protected areas in the Terai Arc Landscape. The sanctuary faces threats from illegal logging, poaching, and human-wildlife conflict.

#### WHY IN NEWS?

The sanctuary was the site of illegal khair tree felling, resulting in arrests and increased forest department patrols.

### **Hosur-Dharmapuri Elephant Migration**

The Hosur-Dharmapuri forests in Tamil Nadu are the origin of elephant herds that migrated to Andhra Pradesh starting in 1980. The first herd moved to Kuppam and Palamaner Forest Divisions in Chittoor district. Additional herds migrated between 1983 and 1986 from Tamil Nadu and Bannerghatta in Karnataka. This migration was driven by habitat fragmentation and human encroachment. These movements represent some of the earliest modern elephant range expansions into areas without elephants for over 200 years. The migration has contributed to increased human-elephant conflict in Andhra Pradesh due to lack of cultural coexistence experience.

#### WHY IN NEWS?

The migration from Hosur-Dharmapuri forests was brought into light in the 2025 elephant status report as an example of changing elephant habitats and increasing human-elephant conflict in newly colonised areas.

### **Hybrid Paddy Shellers in Punjab**

Hybrid paddy shellers are mechanized units used to separate rice grains from husks, specifically designed for hybrid rice varieties. Hybrid rice, developed through crossbreeding, yields higher output than traditional varieties but often requires specialized processing equipment. In Punjab, despite protests and a temporary ban,



shellers continue to buy hybrid paddy due to its superior yield potential and market demand. Hybrid rice cultivation in Punjab has been promoted to increase productivity but faces criticism over seed costs and environmental impacts. Shellers play a critical role in processing hybrid paddy efficiently to maintain grain quality and marketability.

#### WHY IN NEWS?

Punjab's hybrid paddy shellers are active despite protests and bans, reflecting ongoing tensions between farmers, processors, and regulatory policies in the 2025 rice market.

### Hyperparasitoidism

Hyperparasitoidism is a form of parasitism where a parasitoid wasp parasitizes another parasitoid insect. In this system, the hyperparasitoid targets the larvae or pupae of primary parasitoids, adding complexity to food webs. This behavior influences population dynamics and biological control processes. *Nesolynx banabitanæ* is an example of a hyperparasitoid, parasitizing *Charops aditya*, which itself parasitizes caterpillars. Hyperparasitoidism is less common than primary parasitism and can affect ecosystem stability by regulating parasitoid populations. It is studied to understand multitrophic interactions and their ecological consequences.

#### WHY IN NEWS?

The discovery of *Nesolynx banabitanæ*, a hyperparasitoid wasp, marks the role of hyperparasitoidism in Central Park's ecosystem, drawing scientific interest to this complex ecological phenomenon.

### Inclusive Wealth Index

The **Inclusive Wealth Index** measures a country's wealth by combining natural, human, and produced capital. It was created by the United Nations University's International Human Dimensions Programme. Unlike GDP, it focuses on long-term sustainability by valuing assets like forests, mineral resources, infrastructure, and education. The index helps assess whether a country is depleting or accumulating wealth over time. It encourages policies that protect natural resources and invest in human capital. The Inclusive Wealth Index is updated annually and ranks countries based on their capacity to maintain well-being for future generations.

#### WHY IN NEWS?

Joshi mentioned the Inclusive Wealth Index as part of a broader move away from GDP, advocating for metrics that reflect India's real long-term prosperity and sustainability.

### India's Cooling Demand Impact

Cooling demand in India accounts for nearly **20 percent of the country's total power capacity**, primarily driven by air conditioner usage. Cooling load fluctuates seasonally and influences electricity consumption patterns. Recently, cooler weather and reduced air conditioner use contributed to a decline in electricity demand growth. This sector's power consumption is projected to rise with increasing urbanization and rising temperatures. Energy efficiency improvements in cooling technology and demand-side management are critical for managing future electricity demand and emissions in India's rapidly growing



economy.

#### WHY IN NEWS?

Lower air conditioner use in the first half of 2025 helped reduce electricity demand growth in India, contributing to a slower rise in power consumption and enabling cleaner energy sources to meet new demand.

### Jal Marg Vikas Project

The **Jal Marg Vikas Project** is a flagship initiative on National Waterway-1 (NW-1), covering the Ganga-Bhagirathi-Hooghly river system. Supported by the World Bank, it focuses on developing 1,620 km of navigable waterways between Varanasi and Haldia. The project includes the construction of cargo terminals, community jetties, and navigational aids to enable efficient inland water transport. It aims to increase cargo movement capacity, reduce logistics costs, and promote sustainable transport. Key terminals include Varanasi, Sahibganj, and Haldia. The project has tripled cargo traffic on NW-1 over the past decade and integrates with road and rail networks for multimodal transport.

#### WHY IN NEWS?

The Jal Marg Vikas Project is brought into light due to its role in the resurgence of India's inland water transport, boosting cargo traffic and promoting sustainable logistics solutions in 2025.

### Justice M B Shah Commission

The **Justice M B Shah Commission of Inquiry** was established to investigate illegal mining in Jharkhand, particularly in the Saranda region. It uncovered unlawful extraction of iron ore valued at approximately **₹14,403 crores** and manganese worth **₹138 crores**. The commission's findings revealed violations of mining and environmental laws. Its recommendations led to the Union Environment Ministry preparing a sustainable mining plan with designated 'go' and 'no-go' zones, and an annual iron ore mining cap of **64 million tonnes**. The commission's report has played a key role in regulating mining and protecting the Saranda forest's ecology.

#### WHY IN NEWS?

The commission's report was cited in the Supreme Court case demanding protection of Saranda forest from illegal mining and enforcing sustainable mining practices.

### Kaleshwaram Project

The **Kaleshwaram project** is one of the world's largest multi-purpose irrigation projects located in Telangana. It involves lifting water from the Godavari River to irrigate over 18 lakh acres of land. The project includes three major barrages – Medigadda, Annaram, and Sundilla. It uses a complex system of pumps and reservoirs to lift water in multiple stages. Construction began in 2016 and was completed in phases. The project aims to provide drinking water, irrigation, and industrial water supply. It is also designed to improve groundwater levels in the region.

#### WHY IN NEWS?

The government decided to repair the three barrages of the Kaleshwaram project after



structural issues were revealed by the National Dam Safety Authority, following political controversy and probe reports.

### **Kali Tiger Reserve**

Kali Tiger Reserve is located in the Uttara Kannada district of Karnataka, and spans an area of approximately **1,200 square kilometers**. It is part of the Western Ghats biodiversity hotspot and features a range of habitats from **semi-evergreen to evergreen forests**. The reserve is primarily known for its tiger population but also supports other wildlife like elephants, leopards, and various bird species. It is managed by the Karnataka Forest Department and includes a safari zone where controlled wildlife viewing is permitted. The reserve is also adjacent to forests in Joida and Haliyal taluks.

#### WHY IN NEWS?

The reserve gained attention due to the unexpected sighting of a striped hyena, an animal not previously recorded in this habitat, raising questions about wildlife movement and habitat changes.

### **Karakoram Wildlife Sanctuary**

The **Karakoram Wildlife Sanctuary** is located in the Ladakh region along the Karakoram mountain range, initially notified in 1987 with roughly 5,000 sq km. It is home to rare species such as the snow leopard, Himalayan ibex, and Ladakh urial. The area includes rugged terrain with glacier-fed rivers like Nubra and Shyok. The sanctuary is being proposed for expansion to 16,550 sq km, with some exclusions along human habitation zones. The Wildlife Institute of India has identified 10 High Conservation Value Areas and wildlife corridors within it, aiming to balance biodiversity protection and local livelihoods.

#### WHY IN NEWS?

The sanctuary's boundaries are being revised and expanded to 16,550 sq km, excluding certain populated areas, to improve conservation efforts and facilitate sustainable local economic development.

### **Kaziranga National Park and Tiger Reserve (KNPTR)**

Kaziranga National Park, located in Assam, is a UNESCO World Heritage Site known for its **one-horned rhinoceros** population. It covers over **430 sq km** and includes wetlands, grasslands, and forests. The park supports a rich diversity of fauna including tigers, elephants, and migratory birds. It plays important role in **wetland bird conservation**, hosting annual migratory waterfowl censuses. The park's wetlands are vital for seasonal visitors like the painted stork. It has faced challenges from flooding and human-wildlife conflicts but remains a key biodiversity hotspot in northeastern India.

#### WHY IN NEWS?

Kaziranga National Park witnessed the return of painted storks after four years, denoting its ongoing role as a refuge for migratory and resident bird species.

### **Keibul Lamjao National Park**

Keibul Lamjao National Park, located on Loktak Lake, is the **world's only floating national park**. It covers approximately 40 square kilometers and is the last natural habitat



of the endangered brow-antlered deer (Sangai). The park's unique floating biomass, phumdi, supports this ecosystem. Established in 1983, it is part of the Loktak Wetland Ramsar Site. The park's ecosystem is fragile, vulnerable to water level fluctuations and human interference. It supports diverse flora and fauna, including migratory birds. The park contributes to the cultural identity of the local Meitei community, who rely on sustainable resource use within the park's boundaries.

#### WHY IN NEWS?

The study draws attention to environmental threats to Keibul Lamjao National Park linked to pollution and land use changes affecting Loktak Lake.

### **Kodo Millet**

Kodo millet (***Paspalum scrobiculatum***) is a hardy cereal crop primarily grown in India and parts of Africa. It thrives in poor soil and drought-prone areas. Kodo millet is rich in fiber, iron, and antioxidants. It has a short growing season of 3-4 months. Traditionally, it has been a staple in tribal diets. The grain is gluten-free and used in porridges, flatbreads, and fermented products. Kodo millet also has a low glycemic index, beneficial for diabetic patients. It is resistant to pests and requires minimal chemical inputs, making it environmentally sustainable.

#### WHY IN NEWS?

Madhya Pradesh government decided to procure Kodo millet directly from farmers for the first time under the 'Rani Durgavati Shree-Ann Protsahan Yojana' to boost millet production and farmer incomes.

### **Koraput Coffee**

Koraput coffee is cultivated in the Koraput district of Odisha, primarily by tribal farmers. It has contributed to restoring degraded forest land and reducing soil erosion in the region. The coffee cultivation provides a steady cash income, replacing subsistence farming for many local communities. Women play role in harvesting and processing Koraput coffee, making the industry more inclusive. Supported by the Coffee Board of India, Koraput coffee is marketed as a specialty tribal coffee, comparable to Araku coffee. The initiative has led to improved incomes and living standards for tribal farmers in Koraput.

#### WHY IN NEWS?

Koraput coffee is gaining recognition for its role in environmental restoration and tribal empowerment, as brought into light by Prime Minister Modi and the Commerce and Industry Ministry in October 2025.

### **Kunming-Montreal Framework**

The **Kunming-Montreal Global Biodiversity Framework** is an international agreement adopted in 2022 to halt and reverse biodiversity loss by 2030. It sets globally agreed targets for conservation, restoration, and sustainable use of ecosystems. The framework emphasizes mainstreaming biodiversity across sectors, enhancing protected areas, and reducing species extinction rates. India's National Red List initiative aligns with these targets, helping meet commitments under the framework. It supports evidence-based



conservation policies and reporting mechanisms to track progress on biodiversity goals at national and global levels.

#### WHY IN NEWS?

India's new Red List Roadmap aligns with the Kunming-Montreal Global Biodiversity Framework, reinforcing its commitment to international biodiversity conservation goals.

### **Kyoto Protocol Commitment Periods**

The **Kyoto Protocol** established legally binding emission reduction targets for industrialized countries in two commitment periods – 2008–2012 and 2013–2020. The first period involved 37 countries plus the EU agreeing on emission cuts, with developing countries exempt from binding targets. Non-compliance penalties included carrying forward deficits plus a 30% additional reduction. The second commitment period was defined by the Doha Amendment in 2013, but not all countries ratified it. The United States never ratified Kyoto, weakening its impact. The protocol introduced market mechanisms like emissions trading and Clean Development Mechanism (CDM).

#### WHY IN NEWS?

Kyoto Protocol's legacy is debated in 2025 as nations reflect on its effectiveness and the consequences of major countries' withdrawal or non-ratification.

### **Lantana camara**

Lantana camara is a fast-growing shrub introduced to India during the British colonial period as an ornamental plant. It thrives in diverse soil types, from alkaline to acidic and fertile to infertile. The plant is unpalatable to large herbivores like elephants, disrupting their natural habitat and forcing them to feed on cash crops, increasing human-wildlife conflict. Lantana spreads aggressively, outcompeting native flora and altering ecosystems by degrading habitats and affecting predator-prey dynamics. It is considered one of the most invasive plants in India, posing challenges to conservation efforts and biodiversity maintenance.

#### WHY IN NEWS?

Lantana camara is brought into light as a major invasive species in India, affecting elephant habitats and contributing to increased human-wildlife conflicts, raising conservation concerns.

### **Large Cardamom**

Large cardamom (**Amomum subulatum**) is a spice primarily grown in the Eastern Himalayas, including regions of India, Nepal, and Bhutan. Unlike small cardamom, it has a smoky, camphoraceous aroma and is used in savory dishes and traditional medicine. It thrives at altitudes of 1,200 to 2,700 meters. Large cardamom is susceptible to fungal diseases like leaf blight and requires shade and cool climates. India is a leading producer and exporter, with Sikkim and Arunachal Pradesh as major cultivation zones. The spice's global trade benefits from the new Codex standard for quality and safety.

#### WHY IN NEWS?

Large cardamom was one of the three spices for which the CCSCH8 session finalized new international quality standards, aiding India's export competitiveness.



## Loktak Hydroelectric Project

The **Loktak Hydroelectric Project** is situated on the Loktak Lake in Manipur, and is the only major hydropower project in the state. It utilizes the natural outflow of the lake to generate electricity, playing a critical role in regional power supply. The project faces logistical challenges due to the lake's unique floating biomass called phumdis, which affects water flow and equipment transport. Renovation efforts focus on modernizing turbines and improving maintenance to enhance operational efficiency. The project also supports local agriculture and fisheries by regulating water levels in Loktak Lake, Asia's largest freshwater lake.

### WHY IN NEWS?

Discussions were held regarding operational challenges and renovation of the Loktak Hydroelectric Project, emphasizing the need for timely upgrades to maintain uninterrupted power generation in Manipur.

## Malabar Gliding Frog

The **Malabar gliding frog** (*Rhacophorus malabaricus*) is native to the Western Ghats of India. It has a distinctive green body, bright red feet, and yellow fingers, resembling a hibiscus flower. This frog is known for its ability to **glide between trees** using webbed feet. It lays eggs in frothy nests made from secretions that harden to protect the eggs, which hatch into tadpoles after about a week. Males outnumber females, and females select mates based on the pitch and rhythm of male calls. The species is sensitive to water pollution and habitat loss, contributing to its decline.

### WHY IN NEWS?

A rare sighting of the Malabar gliding frog occurred at Hirebagewadi near Belagavi, attracting local attention and raising awareness about its habitat and conservation status.

## Marathwada Region

Marathwada is a region in Maharashtra, historically prone to drought due to its semi-arid climate. It faces water scarcity and agricultural challenges, often suffering from low rainfall and poor groundwater recharge. Despite this, in 2025, Marathwada experienced severe flooding caused by Cyclone Shakti, illustrating an expansion of vulnerability from drought to flood risk. The region's soil erosion and deforestation exacerbate the impact of extreme weather. Marathwada's socio-economic conditions are heavily dependent on monsoon patterns, making it sensitive to climate variability and extreme events.

### WHY IN NEWS?

Marathwada's unusual flooding in 2025 due to Cyclone Shakti brought into light the growing spread of climate vulnerability beyond traditional drought-prone areas in India.

## Mimetus parvulus

*Mimetus parvulus* is a rare, endemic spider species belonging to the family Mimetidae, found in the Western Ghats. It is known for its specialized predatory behavior, often preying on other spiders. The species was recently rediscovered in the Idukki Wildlife Sanctuary, denoting the sanctuary's role as a habitat for vulnerable and narrow-range



species. *Mimetus parvulus* is characterized by its small size and elusive nature, making it difficult to study. Its presence indicates a healthy, biodiverse ecosystem within the Western Ghats, a global biodiversity hotspot.

WHY IN NEWS?

The rare and endemic *Mimetus parvulus* spider was found during the recent monsoon survey at Idukki Wildlife Sanctuary, emphasizing the sanctuary's ecological importance and species uniqueness.

### **Mission LiFE (Lifestyle for Environment)**

is a recent initiative by the Government of India aimed at promoting sustainable and mindful consumption patterns among citizens. It encourages people-led climate action by integrating environmental consciousness into daily lifestyles. The mission supports behavioral change to reduce carbon footprints and conserve resources. It aligns with India's broader climate goals and energy conservation efforts. Mission LiFE emphasizes the role of individuals and communities in climate mitigation, complementing governmental policies and programs for sustainability.

WHY IN NEWS?

Mission LiFE is linked with the new NECA 2025 award category for Digital Content Creators and Influencers, leveraging social media to spread energy conservation awareness.

### **Modhera Solar Park**

The **Modhera Solar Park** is one of India's largest solar power installations, located in Mehsana district, Gujarat. It was commissioned in 2012 and spans over 600 hectares. The park has a capacity of around 151 MW and uses photovoltaic technology. It plays an important role in Gujarat's renewable energy goals and contributes to the state's power grid. The park is named after the nearby historic Modhera Sun Temple, linking modern solar energy with ancient solar worship. It is operated by the Gujarat Power Corporation Limited (GPCL), and its development marked a major step in India's shift toward sustainable energy sources.

WHY IN NEWS?

The Modhera Solar Park is a key site for delegates visiting the Vibrant Gujarat Regional Conference in Mehsana, showcasing renewable energy advancements in North Gujarat.

### **Mushaldhare Varsha**

Mushaldhare Varsha is a local term used in the Darjeeling hills to describe **intense, concentrated rainfall** that lasts for a few hours over a few days, replacing the traditional steady monsoon showers known as sawnaay jhari. This change in rainfall pattern is linked to climate change and has increased the frequency of landslides and floods in the region. Mushaldhare Varsha causes rapid water runoff, overwhelming natural drainage systems and contributing to soil erosion and infrastructure damage. The term is specific to the local meteorological and cultural context of the Darjeeling hills in India.

WHY IN NEWS?

Darjeeling experienced heavy rainfall in October 2025, described as mushaldhare varsha, causing severe landslides and infrastructure damage, including the destruction of the



Dudhia bridge.

### **Namchik-Namphuk Coal Block**

The **Namchik-Namphuk coal block** is located in Changlang district, Arunachal Pradesh. It holds estimated reserves of 1.5 crore tonnes of coal. Initially allocated in 2003, the project faced multiple delays due to operational challenges and was revived only in 2022 through a transparent auction process. This coal block represents the first commercial coal mining operation in Arunachal Pradesh, a state previously untouched by formal mining activities. The project is operated by Coal Projects Private Limited (CPPL) and is expected to generate revenue and employment while adhering to environmental sustainability norms.

WHY IN NEWS?

The Namchik-Namphuk coal block is set to launch its first commercial coal mining operation on October 6, 2025, marking Arunachal Pradesh's entry into coal production.

### **Namo Biodiversity Park**

Namo Biodiversity Park, located at **Pratap Bandh, Alwar**, is Rajasthan's first biodiversity park. It serves as a green lung to improve air quality and biodiversity in the region. The park features native plant species aimed at restoring local ecosystems. It is designed to promote environmental education and sustainable living among visitors. The park contributes to climate action goals by supporting **carbon sequestration** and habitat conservation. It is part of a broader initiative to strengthen green infrastructure in Rajasthan, emphasizing public participation in conservation and biodiversity awareness.

WHY IN NEWS?

The park was inaugurated in October 2025 by Union Minister Bhupender Yadav, marking step in Rajasthan's environmental conservation efforts.

### **Nangal Wildlife Sanctuary**

Nangal Wildlife Sanctuary is located in Punjab, encompassing parts of the Shivalik Hills and the Nangal Dam Lake area. It hosts diverse flora and fauna, including wild boars protected under Schedule 4 of the Wildlife Protection Act. The sanctuary covers an area of approximately 116 square kilometers. It plays important role in conserving local biodiversity and serves as a habitat for migratory birds. The sanctuary's ecosystem is sensitive to pollution, especially from industrial effluents entering through tributaries from neighboring Himachal Pradesh, impacting aquatic and terrestrial wildlife. It is managed by the Punjab Forest Department.

WHY IN NEWS?

The sanctuary witnessed the death of about 100 wild boars, suspected to be caused by toxic waste pollution in Nangal Lake, part of the sanctuary's ecosystem.

### **National Green Tribunal (NGT)**

The **National Green Tribunal** was established in India in 2010 under the National Green Tribunal Act for expeditious environmental justice. It exclusively handles cases related to environmental protection and conservation of forests and natural resources. The Tribunal operates through benches comprising judicial and expert members, ensuring scientific



and legal scrutiny. It can take suo motu cognizance of environmental issues without formal complaints. The NGT has the power to impose penalties, direct restoration, and enforce environmental laws. It aims to reduce the burden on traditional courts by providing specialized, speedy resolutions for ecological matters.

#### WHY IN NEWS?

The NGT has taken suo motu cognizance of alleged illegal muck dumping into the Sutlej river during Sunni Dam hydroelectric project construction, listing the case for hearing in December 2025.

### **National Tiger Conservation Authority (NTCA)**

The **National Tiger Conservation Authority** was established in 2005 under the Wildlife Protection Act to ensure effective tiger conservation in India. It oversees tiger reserves, sets policies, and coordinates with state governments. The NTCA has authority to direct relocation of villages from core tiger habitats to reduce human-wildlife conflict. It maintains detailed data on tiger populations and habitat status. The authority also mandates annual monitoring and evaluation of tiger reserves. It works in coordination with the Ministry of Environment, Forest and Climate Change and other stakeholders. The NTCA's directives have sometimes led to conflicts with tribal communities over relocation policies.

#### WHY IN NEWS?

The NTCA's directive to prioritize relocation of villages from tiger reserve core areas faced protests, prompting a new policy framework emphasizing voluntary, evidence-based relocation and community rights.

### **Natural Carbon Sinks**

Natural carbon sinks, such as oceans, forests, and soil, absorb about half of human-generated CO<sub>2</sub> emissions annually. Oceans absorb CO<sub>2</sub> through physical solubility and biological processes, but their capacity decreases as water temperature rises. Forests absorb CO<sub>2</sub> via photosynthesis but are vulnerable to droughts and wildfires, which reduce their uptake. Soil also stores carbon but can release it when disturbed or dried. The efficiency of these sinks is declining due to global warming, creating a feedback loop that exacerbates atmospheric CO<sub>2</sub> accumulation. This reduced absorption capacity was in the unprecedented CO<sub>2</sub> increase in 2024.

#### WHY IN NEWS?

The reduced absorption of CO<sub>2</sub> by natural sinks in 2024 contributed to the highest-ever annual increase in atmospheric CO<sub>2</sub>, as reported by the WMO.

### **Nauradehi Sanctuary**

Nauradehi Sanctuary, located in Madhya Pradesh, spans over 1,197 square kilometers, making it one of the largest wildlife reserves in the state. It hosts a diverse range of fauna, including tigers, leopards, sloth bears, and various deer species. The sanctuary is part of the Vindhya mountain range and features mixed deciduous forests and grasslands. It acts as important corridor for wildlife movement between different forest areas. The sanctuary



has been selected as the third site in Madhya Pradesh for the reintroduction of cheetahs, following Kuno National Park and Gandhi Sagar Sanctuary.

WHY IN NEWS?

Nauradehi Sanctuary will become the third home for cheetahs in Madhya Pradesh, with cheetahs being brought from Namibia for release there.

### **Omkareshwar Wildlife Sanctuary**

The proposed Omkareshwar Wildlife Sanctuary will cover 61,407 hectares across Khandwa and Dewas districts in Madhya Pradesh. It is named after the Omkareshwar temple, Hindu pilgrimage site located on an island in the Narmada River. The sanctuary will protect diverse flora and fauna, including forest species endemic to the Vindhya and Satpura ranges. The establishment aims to enhance conservation efforts and promote eco-tourism in the region. The sanctuary is expected to support species such as leopards, deer, and various bird species, contributing to the state's biodiversity preservation.

WHY IN NEWS?

A formal announcement regarding the establishment of the Omkareshwar Wildlife Sanctuary will be made soon by Madhya Pradesh authorities.

### **Orugallu WildLife Society (OWLS)**

Orugallu WildLife Society (OWLS) is a regional conservation NGO based in Telangana, focused on wildlife research, habitat preservation, and community engagement. It was founded in **2010** and works closely with government forest departments and national organizations like WWF-India. OWLS organizes biodiversity surveys, awareness programs, and training workshops, especially targeting lesser-known species such as butterflies and moths. The society emphasizes citizen science and often collaborates with academic institutions for data collection and analysis. OWLS is known for pioneering butterfly monitoring protocols specific to the Telangana region.

WHY IN NEWS?

OWLS is coordinating the upcoming butterfly and moth survey at Eturnagaram Wildlife Sanctuary, involving local and national conservation groups.

### **Pallas's Cat**

Pallas's cat (**Otocolobus manul**) is a small wild cat native to Central Asia's grasslands and montane steppes. It has a stocky build, dense fur, and rounded ears set low on the sides of its head. Unlike other cats, it does not roar but produces high-pitched sounds. It is solitary and crepuscular, hunting small mammals and birds. The species is adapted to cold, arid environments and is classified as Near Threatened due to habitat loss and hunting. Its first official sighting in **Kinnaur, Himachal Pradesh**, marks range extension in India.

WHY IN NEWS?

The first official sighting of Pallas's cat was recorded in Kinnaur during a recent wildlife survey in Himachal Pradesh, denoting new data on elusive Himalayan fauna.

### **Paradip Port Authority**

Paradip Port Authority is a major deep-water port located on the east coast of India in



Odisha. It primarily handles bulk cargo such as coal, iron ore, and fertilizers. Established in the 1960s, Paradip port is one of the largest ports in India by cargo volume. It has specialized terminals for handling liquid and dry bulk cargo. The port is strategically important for facilitating exports and imports in eastern India and neighboring regions. Paradip Port has been actively working on expanding its capacity and incorporating sustainable practices, including initiatives related to green hydrogen and clean energy transitions.

#### WHY IN NEWS?

Paradip Port Authority was officially recognized as a Green Hydrogen Hub, marking its involvement in India's green hydrogen mission and clean fuel technology promotion.

### **Pratap Bandh**

Pratap Bandh is a locality in Alwar, Rajasthan, known for its historical and ecological significance. The area includes a reservoir or waterbody that supports local agriculture and biodiversity. It has been a focus for environmental restoration projects aiming to improve water conservation and habitat quality. Pratap Bandh's ecosystem includes native flora and fauna, making it suitable for initiatives like the Namoo Biodiversity Park. The site's restoration helps mitigate urban heat effects and supports local communities dependent on natural resources for livelihoods and agriculture.

#### WHY IN NEWS?

Pratap Bandh was chosen as the site for Rajasthan's first biodiversity park due to its ecological potential and need for green infrastructure development.

### **Project Gharial**

Project Gharial is a national conservation initiative focused on the gharial (*Gavialis gangeticus*), a critically endangered crocodylian species native to the Indian subcontinent. The project includes an implementation plan targeting habitat restoration, breeding programs, and community awareness to increase gharial populations in river ecosystems. Gharials are specialized fish-eaters with a distinctive long, narrow snout and are indicators of river health. The project collaborates with local communities and forest departments to reduce threats like fishing net entanglement and habitat degradation. It also emphasizes scientific monitoring and the establishment of protected river stretches for gharial conservation.

#### WHY IN NEWS?

Project Gharial's implementation plan was launched at Wildlife Week 2025 to enhance conservation efforts for this endangered species.

### **Project Snow Leopard**

Project Snow Leopard (PSL) was launched to conserve the snow leopard and its fragile high-altitude ecosystem across the Himalayas and trans-Himalayan regions in India. It involves local communities, state governments, and conservation organizations to promote habitat protection and species monitoring. The programme covers nearly 70% of potential snow leopard habitats and focuses on reducing human-wildlife conflicts,



promoting eco-tourism, and scientific research. Snow leopards are keystone species, crucial for ecosystem balance. PSL integrates traditional knowledge with modern conservation methods, including camera trapping and genetic studies, to understand population dynamics and threats like poaching and climate change.

#### WHY IN NEWS?

The Snow Leopard Population Assessment covered most habitats, denoting the importance of Project Snow Leopard in conserving this vulnerable species in India's Himalayan regions.

### **Protein Hydrolysate Biostimulants**

Protein hydrolysates are mixtures of amino acids and peptides obtained by breaking down proteins from plant or animal sources. They act as biostimulants by enhancing nutrient uptake, growth, yield, and stress tolerance in plants without supplying nutrients directly or controlling pests. Common animal sources include bovine hide, chicken feathers, pig tissue, cod scales, and sardine. These biostimulants are typically applied as foliar sprays. Their efficacy depends on a pre-harvest interval, the time gap between spraying and harvesting, which is critical for safety and regulatory approval. Plant-based alternatives include soy and maize-derived hydrolysates.

#### WHY IN NEWS?

The Indian Agriculture Ministry withdrew approval for 11 animal-derived protein hydrolysate biostimulants due to religious and dietary objections from Hindu and Jain communities, affecting crops like tomato, paddy, and chilli.

### **Protosticta mortoni**

**Protosticta mortoni**, commonly known as the Blue-necked Reedtail, is a damselfly species endemic to the Western Ghats of India. It inhabits shaded forest streams and is highly sensitive to habitat disturbance. This species belongs to the family Platystictidae and is characterized by its distinct blue neck coloration and slender body. It requires pristine, well-oxygenated freshwater habitats and is often used as an indicator of forest stream health. Its restricted distribution and dependence on specific microhabitats make it vulnerable to environmental changes and habitat fragmentation.

#### WHY IN NEWS?

Newly discovered in Silent Valley National Park during an odonate survey, denoting the park's ecological diversity.

### **Pseudorhombus arsius Complex**

The Pseudorhombus arsius complex refers to a group of closely related flatfish species within the Paralichthyidae family, previously believed to be a single widespread species. Molecular phylogenetic studies have revealed multiple genetically distinct lineages within this complex, including Pseudorhombus bahudaensis. The complex shows deep evolutionary divergence dating back approximately 17 million years. Morphological similarities among these species have historically obscured their true diversity. DNA barcoding and phylogenetic tools have been essential in resolving this cryptic species



complex, aiding in accurate species identification critical for fisheries management and biodiversity conservation.

#### WHY IN NEWS?

The *Pseudorhombus arsius* species complex was clarified through recent research, leading to the description of *Pseudorhombus bahudaensis* and improved understanding of flatfish biodiversity in the Indo-Pacific region.

### **Rakchham-Chitkul Wildlife Sanctuary**

The **Rakchham-Chitkul Wildlife Sanctuary** is located in Kinnaur district, Himachal Pradesh. It spans a diverse Himalayan ecosystem with alpine meadows, dense forests, and glacial valleys. The sanctuary provides habitat for rare bird species like the **Plumbeous Water Redstart** and **Pink-browed Rosefinch**. It is one of the easternmost sanctuaries in Himachal Pradesh, bordering Tibet. The sanctuary supports migratory and resident birds, with over 35 species recorded during international bird-watching events. It plays a key role in local biodiversity conservation and environmental education for both locals and international visitors.

#### WHY IN NEWS?

An international bird-watching programme was held here involving 15 countries, training local youths in mountain climbing and wildlife conservation, marking the first such foreign-participation event in Rakchham.

### **Rapid Cyclone Intensification**

Rapid cyclone intensification refers to a tropical cyclone's wind speed increasing by at least 30 knots within 24 hours. This phenomenon has become more frequent in the Arabian Sea due to rising sea surface temperatures. Examples include Cyclone Tauktae (2021) and Cyclone Biparjoy (2023), which intensified quickly off India's west coast. Warmer waters provide more energy, accelerating cyclone development. Rapid intensification complicates forecasting and disaster preparedness due to the reduced warning time. It is a key factor in the increased cyclone activity observed in the Arabian Sea compared to its historically lower cyclonic frequency.

#### WHY IN NEWS?

Cyclone Shakhti's rapid strengthening brought into light ongoing trends of increased cyclone intensification in the Arabian Sea attributed to climate change and warming ocean temperatures.

### **Rhodamine B**

Rhodamine B is a synthetic fluorescent dye commonly used in textiles, cosmetics, and as a tracer dye in water studies. It has a strong absorption peak around 540-570 nm and emits bright fluorescence, which aids in detection. Rhodamine B is toxic, causing skin irritation, respiratory problems, and potential environmental hazards. It is banned in food products in many countries due to its carcinogenic and mutagenic potential. Despite regulations, it persists as a pollutant in water bodies, often undetected at trace levels by conventional methods.



## WHY IN NEWS?

The new technique developed by RRI detects Rhodamine B at concentrations as low as one part per trillion, addressing challenges in monitoring this banned toxic dye in food and water.

**Ring Fault**

A ring fault is a circular or arcuate fracture system often associated with calderas formed by volcanic collapse. At Campi Flegrei, a distinct ring fault encircles the uplift area near Pozzuoli, extending offshore. This fault system is responsible for shallow seismicity above 4 kilometers depth and may generate earthquakes up to magnitude 5. Ring faults form due to subsidence and magma chamber dynamics during and after eruptions. The clear identification of this ring fault at Campi Flegrei was made possible by AI-driven seismic data analysis, revealing its structure more distinctly than previous traditional methods.

## WHY IN NEWS?

The discovery of the ring fault helps explain seismicity patterns and earthquake risks at Campi Flegrei, improving hazard assessment for nearby populations.

**Rishikesh–Karnaprayag Railway**

The Rishikesh–Karnaprayag railway is a strategic infrastructure project aimed at connecting the Garhwal region of Uttarakhand to the Indian railway network. It involves extensive tunneling and construction through fragile Himalayan terrain. The project has led to deforestation and destabilization of slopes, increasing the risk of landslides and ecological damage. Its construction uses dynamite blasting, which hollows out mountain interiors and weakens natural stability. The railway is expected to improve connectivity and boost tourism but raises environmental concerns due to its impact on the delicate ecosystem and seismic vulnerability of the region.

## WHY IN NEWS?

The railway project is brought into light as a contributor to environmental degradation and disaster risk in the Himalayas amid calls for stricter regulation of construction activities.

**Sathyamangalam Tiger Reserve**

Sathyamangalam Tiger Reserve (STR) is located in the Erode district of Tamil Nadu, covering an area of approximately **1400 square kilometers**. It is part of the Nilgiri Biosphere Reserve and serves as important wildlife corridor connecting the Western and Eastern Ghats. STR is home to tigers, elephants, leopards, and gaur, among other species. Established as a tiger reserve in 2013, it plays a vital role in conservation efforts. The reserve has a **diverse ecosystem of dry deciduous forests and scrublands**. It faces threats from illegal encroachments, poaching, and unregulated tourism activities.

## WHY IN NEWS?

The Madras High Court ordered action against illegal resorts and tourist lodges operating within the prohibited zone of STR, following a PIL alleging 47 such establishments lacked mandatory clearances.



## Sawalkote Hydro Electric Project

The Sawalkote Hydro Electric Project is a **1,856-MW run-of-the-river hydropower scheme** on the Chenab river in Jammu and Kashmir. It features a **192.5-metre-high roller-compacted concrete dam** and underground powerhouses designed to generate about **7,534 million units of electricity annually**. The project spans **1,401.35 hectares**, including **847.17 hectares of forest land**, affecting 13 villages and displacing around 1,500 families. It is developed by NHPC Limited at an estimated cost of Rs 31,380 crore. The project aims to provide peaking power, grid stability, and enhanced water management rights under the Indus Waters Treaty (IWT).

### WHY IN NEWS?

The Centre recommended environmental clearance for the Sawalkote project in October 2025, reviving it after nearly 40 years of suspension due to the Indus Waters Treaty suspension and environmental concerns.

## Schedule 4 of Wildlife Protection Act

Schedule 4 of the Wildlife Protection Act, 1972 (India) lists certain animal species that receive legal protection but with less stringent penalties compared to Schedule 1 or 2 species. It includes species like wild boars, which are protected from hunting and trade but lack the highest level of safeguarding. Violations involving Schedule 4 species attract moderate fines and imprisonment terms. The classification aims to balance conservation needs with local socio-economic activities. Enforcement and prosecution under this schedule are often less rigorous, leading to challenges in protecting these species effectively.

### WHY IN NEWS?

The wild boars that died in Nangal Wildlife Sanctuary are protected under Schedule 4, yet no legal case has been registered despite the mass mortality event.

## Sea Curtains

Sea curtains are large, buoyant underwater barriers anchored to the seabed, designed to block warm ocean water from reaching polar ice sheets. Their installation faces technical challenges due to deep, rugged seabed conditions and remote, hostile locations like Antarctica's Amundsen Sea. The construction requires specialized vessels costing around half a billion dollars each. Sea curtains may disrupt marine ecosystems by blocking migratory paths of fish and mammals and potentially releasing toxic substances from materials used. Estimated costs exceed \$1 billion per kilometer. Their effects on ocean circulation and sea ice levels remain uncertain, with potential negative environmental impacts.

### WHY IN NEWS?

Sea curtains are among five geoengineering methods recently studied and found inadequate or risky for protecting polar ice sheets, prompting debate about their feasibility and environmental impact.



## Seshachalam Biosphere Reserve

The Seshachalam biosphere reserve is located in the Eastern Ghats of Andhra Pradesh and is known for its tropical dry deciduous forests. It covers an area of approximately 475 square kilometers and is home to several endemic and endangered species, including the newly discovered *Hemiphyllodactylus Venkatadri*. The reserve is named after the Seshachalam hills, which hold religious significance due to the presence of the Tirumala temple complex. It has a unique ecosystem characterized by sandalwood plantations and diverse flora and fauna adapted to dry conditions. The reserve plays an important role in conserving the biodiversity of the Eastern Ghats.

### WHY IN NEWS?

The discovery of a new gecko species, *Hemiphyllodactylus Venkatadri*, was made within the Seshachalam biosphere reserve, denoting its ecological importance.

## Silver Iodide in Cloud Seeding

Silver iodide (**AgI**) is used in cloud seeding because its crystal lattice closely resembles ice, promoting ice nucleation in supercooled clouds. When dispersed into clouds, silver iodide particles **initiate freezing of water droplets**, encouraging precipitation. It is considered effective mainly in cold clouds containing supercooled water. Environmental concerns include **accumulation in soil and water bodies** after repeated use, with long-term ecological and health effects not fully understood. Silver iodide is generally used in small quantities, but its persistence raises questions about risks to agriculture and ecosystems.

### WHY IN NEWS?

Silver iodide is a key chemical in Delhi's cloud seeding plan, raising environmental and ethical concerns amid debates over the method's efficacy and safety.

## Sloth Bear

The sloth bear (*Melursus ursinus*) is native to the Indian subcontinent and is characterized by shaggy black fur, a white or yellowish chest patch, and a long snout. It primarily feeds on termites, ants, and fruits using its specialized lips. Sloth bears are listed as **Vulnerable** due to habitat loss and poaching. They are nocturnal and known for their distinctive barking and grunting sounds. The species plays an important role in seed dispersal and ecosystem balance. Sloth bears are a major attraction in Indian zoos and wildlife sanctuaries, including Bondla, Pune, and Bilaspur.

### WHY IN NEWS?

Bondla Wildlife Sanctuary is set to receive a pair of sloth bears from Bilaspur zoo as part of an animal exchange programme, enhancing its animal diversity after 12 years.

## Smog Towers

Smog towers are large-scale air purification structures designed to **filter particulate matter from ambient air** in polluted urban environments. They use HEPA filters or electrostatic precipitators to capture PM2.5 and PM10 particles. The first operational smog tower was installed in Xi'an, China, in 2018. Their effectiveness is limited by **scale and energy consumption**, as they clean only a small volume of air relative to city-wide



pollution. Smog towers are often criticized as symbolic interventions rather than comprehensive solutions, requiring maintenance and infrastructure investment.

#### WHY IN NEWS?

Smog towers are mentioned as part of the series of unscientific or superficial interventions proposed to tackle Delhi's persistent air pollution crisis.

### **Snow Leopard Census 2025**

The **first-ever Snow Leopard Census** conducted in India recorded 718 individual snow leopards across the Indian Himalayas. Ladakh hosts the largest population with 477 individuals. The census used camera traps, genetic analysis, and field surveys to estimate populations accurately. This census is a milestone for conservation efforts, providing the most reliable data on snow leopard distribution in India. It helps identify critical habitats and informs targeted protection strategies. The census supports India's national conservation programme and aligns with global efforts to monitor and protect this vulnerable species.

#### WHY IN NEWS?

Results from India's inaugural Snow Leopard Census were announced during International Snow Leopard Day, denoting population data and conservation progress.

### **Solar Dimming**

Solar dimming refers to the long-term decrease in surface solar radiation reaching the Earth, primarily caused by increased atmospheric aerosols and cloud cover. Aerosols act as condensation nuclei, forming smaller and longer-lasting cloud droplets that extend cloud duration and reduce sunlight penetration. This phenomenon affects climate patterns, agriculture, and solar energy production. Solar dimming was first observed in the mid-20th century and has been linked to industrial pollution and biomass burning. It contrasts with global brightening trends seen in some regions after pollution controls. The effect alters atmospheric transmissivity, impacting weather and climate models worldwide.

#### WHY IN NEWS?

A recent study by BHU, IITM, and IMD marks a persistent decline in sunshine hours across India over three decades, attributing it to solar dimming caused by aerosols and cloud cover.

### **Strobilanthes sessilis**

*Strobilanthes sessilis* is a species of kurinji flower endemic to the lower altitude grasslands of the Western Ghats, particularly in Gudalur, Nilgiris. It blooms once every eight years, unlike the more famous Neelakurinji (*Strobilanthes kunthiana*) which blooms every 12 years. The plant flowers only once in its lifetime, then dies after seed germination. It displays multiple colors including purple, blue, white, and pink, with 10 shades per color. Its mass flowering indicates healthy grasslands and biodiversity. It attracts pollinators like eastern honeybees and butterflies. The species is sensitive to climate change and habitat disturbances.



## WHY IN NEWS?

*Strobilanthes sessilis* bloomed after eight years in Tamil Nadu's newly notified reserve forest in Gudalur, signaling biodiversity recovery and healthy grasslands.

**Strychnos dalzellii**

*Strychnos dalzellii* is a medicinal plant endemic to the Western Ghats of India, locally known as Kanjiram or Modirakanjiram. It belongs to the family Loganiaceae and is categorized as Vulnerable on the IUCN Red List due to restricted distribution, habitat loss, and overexploitation. The plant contains alkaloids with analgesic, anti-inflammatory, and antimicrobial properties. Traditionally, it is used to treat fever, digestive disorders, rheumatism, and nervous ailments. Conservation concerns are heightened by emerging fungal threats, emphasizing the need for habitat protection and sustainable use.

## WHY IN NEWS?

*Strychnos dalzellii* is threatened by a newly discovered fungal pathogen, *Paramyrothecium strychni*, raising conservation and management challenges for this vulnerable medicinal plant.

**Subansiri Lower Hydroelectric Project**

The **Subansiri Lower Hydroelectric Project (SLHP)** is India's largest hydroelectric power station with an installed capacity of 2000 MW (8 units of 250 MW each). Located at **Gerukamukh** on the Assam-Arunachal Pradesh border, it lies in a seismic zone requiring advanced engineering reinforcements. Construction began in 2005 but was halted in 2011 due to protests over seismic safety and environmental concerns. It resumed in 2019 after redesigns recommended by expert panels including IIT Guwahati and the National Dam Safety Authority. The project's cost escalated from Rs 6,285 crore to Rs 26,075 crore due to delays and safety upgrades.

## WHY IN NEWS?

The project entered its commissioning phase in October 2025, with the first turbine generating 250 MW, marking a major milestone in India's renewable energy expansion.

**Terawatt-hour (TWh)**

A terawatt-hour (TWh) is a unit of energy representing one trillion watt-hours or one billion kilowatt-hours. It measures large-scale electricity generation or consumption over time. For perspective, 1 TWh can power approximately 90 million average US homes for one hour. TWh is commonly used in national and global energy statistics to quantify electricity production or usage. India's solar power increase of **17 TWh** in six months in 2025 indicates a substantial expansion in renewable energy capacity, equivalent to powering millions of homes. The term helps compare energy output across different sources and time periods.

## WHY IN NEWS?

India's solar and wind power generation increased by 17 TWh and 11 TWh respectively in the first half of 2025, marking growth in clean energy output and reducing reliance on fossil fuels.



## Thermal Tipping Point of Warm-Water Coral Reefs

Warm-water coral reefs have a **thermal tipping point** near 1.2°C of global warming, beyond which they experience irreversible dieback. Coral bleaching occurs when ocean temperatures rise, causing corals to expel symbiotic algae essential for their survival. This leads to ecosystem collapse, threatening 25% of marine species and nearly one billion people dependent on reefs for food, income, and coastal protection. Since January 2023, reefs have faced the fourth global mass bleaching event, affecting over **84.4% of reefs in 82 countries**. The loss of coral reefs disrupts marine biodiversity and local economies worldwide.

### WHY IN NEWS?

Warm-water coral reefs have crossed their thermal tipping point, experiencing unprecedented dieback amid record ocean temperatures, as reported in the Global Tipping Points study.

## Tiruvallur Maavatta Paarambariya Aikiya Meenavar Sangam

The Tiruvallur Maavatta Paarambariya Aikiya Meenavar Sangam is a fishermen's union representing traditional fishing communities in Tiruvallur district. The union advocates for the desilting and ecological preservation of Pulicat Lake. It has repeatedly requested government intervention to restore the lake's health. The Sangam warns that without a permanent solution, the lake could be lost to real estate development due to illegal residential and industrial encroachments. It calls for inclusive studies involving all stakeholders to ensure sustainable management of this vital waterbody supporting thousands of fishermen.

### WHY IN NEWS?

The Sangam has urged authorities to desilt Pulicat Lake and prevent its degradation, denoting the risk of losing the lake to illegal development and ecological collapse.

## Trachoma

Trachoma is an infectious eye disease caused by the bacterium ***Chlamydia trachomatis***. It spreads through personal contact, contaminated surfaces, and flies exposed to eye or nose discharge of infected individuals. Repeated infections cause scarring and in-turning of eyelids, leading to blindness. It is the world's leading infectious cause of blindness and classified as a neglected tropical disease (NTD). Trachoma remains endemic in communities with poor water and sanitation access. Elimination as a public health problem requires sustained interventions including hygiene, antibiotic treatment, and surgery for advanced cases. Fiji is the 26th country to achieve this milestone.

### WHY IN NEWS?

Fiji was recently validated by WHO for eliminating trachoma as a public health problem, marking the first NTD eliminated in the country and public health achievement in the Pacific region.

## Traditional Agroforestry

Traditional agroforestry integrates trees and shrubs into agricultural landscapes,



promoting biodiversity, soil fertility, and microclimate regulation. Practices include intercropping, alley cropping, and home gardens, often tailored to local ecological and cultural conditions. In East Africa, agroforestry systems have been used for centuries by communities like the **Chagga people** around Mount Kilimanjaro. These systems provide food, fuelwood, fodder, and medicinal plants while reducing soil erosion and enhancing carbon sequestration. Agroforestry is recognized by the FAO as a sustainable land-use practice that supports both conservation and livelihoods, particularly in regions facing rapid population growth and land degradation.

#### WHY IN NEWS?

The study on Mount Kilimanjaro's biodiversity loss identified traditional agroforestry as a promising strategy to mitigate the effects of land-use change on natural plant species.

### **Trees Outside Forests (ToF) Programme**

The Trees Outside Forests (ToF) programme promotes the cultivation of tree species on non-forest lands such as farms, homesteads, and community lands. It aims to enhance biodiversity, improve livelihoods, and reduce pressure on natural forests. ToF supports agroforestry, helps in carbon sequestration, and contributes to ecological balance. The programme encourages planting native and economically valuable species, integrating them into agricultural landscapes. It is implemented through state forest departments and local biodiversity committees, involving community participation. ToF complements forest conservation by expanding tree cover beyond protected forest areas.

#### WHY IN NEWS?

The Red Sanders saplings raised through NBA funding will be supplied to farmers as part of the ToF programme, promoting species conservation outside traditional forest areas.

### **Typhoon Matmo**

Typhoon Matmo was a tropical cyclone in the western Pacific during the 2025 typhoon season. It reached peak sustained winds of **104 mph**, equivalent to a Category 2 Atlantic hurricane. Matmo formed over the South China Sea and made landfall in Guangdong Province, China. The storm caused widespread transportation disruptions and forced over 151,000 evacuations. It brought heavy rainfall, with forecasts predicting up to 12 inches in some areas, increasing flood risks. Matmo's path and intensity were closely monitored by regional meteorological agencies and the JTWC due to its potential impact on densely populated coastal areas.

#### WHY IN NEWS?

Typhoon Matmo disrupted transportation and forced mass evacuations as it approached and made landfall in southern China in October 2025.

### **Underwater Earthquake Swarms**

Underwater earthquake swarms are sequences of numerous small earthquakes occurring in a localized underwater region over a short period. These swarms often indicate magma movement beneath the seafloor, signaling potential volcanic activity. At Axial Seamount, swarms have reached over 2,000 small earthquakes in a single day, correlating with



periods of volcanic inflation and eruption. Unlike typical earthquakes, many underwater quakes are too weak to be felt on land but are crucial for volcano monitoring. These swarms can cause seafloor deformation, such as uplift or subsidence, detectable by ocean-bottom sensors.

#### WHY IN NEWS?

More than 2,000 small earthquakes were recorded in one day near Axial Seamount, suggesting increased volcanic activity and raising concerns about an imminent eruption.

### Vermin Declaration

A **vermin declaration** under the Wildlife (Protection) Act allows certain animals to be legally killed or controlled due to their threat to agriculture, property, or human safety. The central government traditionally holds this power, applying it selectively to species like wild boars, monkeys, and crows. The declaration can be area-specific and time-bound, aiming to reduce crop damage or human-wildlife conflict. It excludes animals from full legal protection temporarily or permanently. Kerala's 2025 amendment seeks to transfer this power to the state level, reflecting challenges in timely central government responses and local ecological pressures. The process lacks uniform criteria, often sparking controversy.

#### WHY IN NEWS?

Kerala's bill proposes state authority to declare vermin status for animals like wild boars, aiming to reduce conflict but raising concerns about conservation and federal balance.

### Wastewater Surveillance

Wastewater surveillance involves collecting and analyzing sewage samples to detect pathogens shed in human waste. It tracks bacteria, viruses, and parasitic worms to monitor disease prevalence in communities. This method can detect infection trends before clinical cases rise, often providing a lead time of over a week. Samples are collected from sewage plants, hospitals, public spaces, and even airplanes. Rigorous protocols ensure consistent sample collection, processing, and pathogen detection. Whole-genome sequencing helps identify pathogen variants. Wastewater surveillance has been used globally for over 40 years, notably for diseases like polio, measles, and cholera, and expanded during the COVID-19 pandemic.

#### WHY IN NEWS?

India's ICMR is expanding wastewater surveillance to monitor 10 viruses across 50 cities, aiming to improve early outbreak detection and integrate environmental with routine disease surveillance.

### Wellbeing Out of Waste (WOW)

The Wellbeing Out of Waste (WOW) initiative by ITC focuses on large-scale waste segregation, collection, and recycling across Indian cities. By 2024, WOW collected approximately **63,700 metric tonnes** of dry waste. The program reached over **25 million citizens** in **6.4 million households**, reducing the burden on municipal waste systems. WOW employs community engagement and scalable models to promote waste



management sustainability. It integrates informal waste pickers into formal systems and emphasizes segregation at source, improving recycling rates and reducing landfill dependency. The initiative serves as a replicable model for urban waste management in developing countries.

#### WHY IN NEWS?

WOW is brought into light as an effective private-sector intervention that reduces urban flooding by minimizing waste clogging drainage systems during India's 2025 monsoon floods.

### West Kameng District

West Kameng is a district in Arunachal Pradesh, located in the Eastern Himalayan region of India. It is characterized by **diverse flora and fauna** due to its varied altitude and climate zones. The district includes parts of the Kameng Elephant Reserve and several protected areas. It is home to indigenous tribes such as the Monpa, Sherdukpen, and Aka. West Kameng's forests are rich in medicinal plants and rare species like certain orchids and balsams. The district's remoteness and ecological significance make it a focus for conservation and scientific research.

#### WHY IN NEWS?

West Kameng district is the location where the new balsam species *Impatiens rajibiana* was discovered by the Botanical Survey of India.

### Western Ghats Chlorophytum

The Western Ghats are a center of origin for the genus *Chlorophytum*, with **18 known species** identified in the region. Many of these species possess medicinal properties. The genus belongs to the family Asparagaceae and includes plants used in traditional medicine and as vegetables. The region's diverse elevation and climate create habitats favorable for *Chlorophytum* species. *Chlorophytum borivillianum*, known as safed musli, is the most famous species, widely used in Ayurveda. Research into wild edible tubers in the Western Ghats has led to the discovery of new species, denoting the region's biodiversity importance.

#### WHY IN NEWS?

The Western Ghats' role as a center of origin for *Chlorophytum* was emphasized in studies linked to the discovery of *Chlorophytum vanapushpam*, underscoring the region's botanical significance.

### Western Ghats Elephant Stronghold

The Western Ghats is the largest elephant habitat in India, hosting approximately **11,934 elephants** as per the 2025 census. This mountain range runs parallel to the western coast of India and is a biodiversity hotspot. It provides critical forest corridors for elephant movement, which are increasingly threatened by habitat fragmentation. The region's elephants are part of the larger Asian elephant population and face risks from human-elephant conflict due to encroachment and infrastructure development. Conservation efforts in the Western Ghats focus on maintaining forest connectivity and reducing conflict



incidences.

#### WHY IN NEWS?

The 2025 elephant census brought into light the Western Ghats as the largest elephant population center in India, emphasizing its conservation importance amid rising threats.

### **Wetlands Restoration in Assam**

The wetlands restoration project in Assam targets **24 distinct wetlands or Beels** across nine districts along the Brahmaputra river system. It aims to enhance water retention capacity, create flood storage, and increase flood resilience while protecting aquatic biodiversity. The project includes structural measures like embankments and nature-based solutions to prevent erosion and flooding. The total approved outlay is Rs 692.05 crore, with 75% funded by the Centre. The initiative is designed as a pilot scheme to establish a flood-proof Brahmaputra valley, supporting fisheries infrastructure and economic growth through improved aquatic ecosystems.

#### WHY IN NEWS?

The Union Home Minister approved Rs 692.05 crore for Assam's wetlands restoration under the NDMF to mitigate floods and erosion along the Brahmaputra river system.

### **Wildlife Trust of India (WTI)**

The **Wildlife Trust of India (WTI)**, co-founded by Vivek Menon, is a non-profit organization established in 1998 dedicated to wildlife conservation in India. WTI focuses on species recovery, habitat restoration, and human-wildlife conflict mitigation. It has pioneered programs such as safeguarding elephant migration corridors and training anti-poaching personnel. WTI collaborates with government agencies, local communities, and international organizations. Its work includes research, policy advocacy, and on-ground conservation projects. WTI has played a critical role in the establishment of new wildlife reserves and promotes community-based conservation models to enhance biodiversity protection.

#### WHY IN NEWS?

Under Menon's leadership, WTI launched key initiatives like elephant migration route protection and anti-poaching training programs.

### **Wood-Rotting Fungi**

Wood-rotting fungi decompose lignin and cellulose in dead trees, facilitating nutrient cycling and carbon turnover in forest ecosystems. They break down tough plant polymers that many organisms cannot digest. These fungi form essential ecological networks, preventing accumulation of dead wood and leaf litter. Their activity supports forest health by enabling soil fertility and regeneration. Some species produce large fruiting bodies, such as *Bridgeoporus kanadii*, which can physically support weight. Wood-rotting fungi are often overlooked but are indispensable for maintaining ecosystem balance and biodiversity.

#### WHY IN NEWS?

The ecological role of wood-rotting fungi was brought into light in the discovery of *Bridgeoporus kanadii*, emphasizing their importance in decomposing dead fir trees in



Arunachal Pradesh forests.

### **Woolly Flying Squirrel**

The woolly flying squirrel (***Eupetaurus cinereus***) is one of the largest flying squirrels, endemic to the western Himalayas. It has thick, woolly fur and a wide patagium for gliding between trees. It is nocturnal and arboreal, feeding mainly on conifer needles and bark. Thought to be extremely rare, it was rediscovered in Lahaul after decades of no confirmed sightings. The species is poorly studied due to its elusive nature and inaccessibility of its habitat. It is listed as Data Deficient on the IUCN Red List, emphasizing the need for further research.

#### WHY IN NEWS?

The woolly flying squirrel was rediscovered in Lahaul during the recent comprehensive wildlife survey in Himachal Pradesh, renewing interest in rare Himalayan species.

### **World Commission on Protected Areas (WCPA)**

The **World Commission on Protected Areas (WCPA)** is one of six technical commissions of the International Union for Conservation of Nature (IUCN), founded in 1948. It focuses on governance, management, and policy related to protected areas globally, including national parks, reserves, and marine protected areas. The WCPA supports the establishment and effective management of protected areas through technical advice, guidelines, and capacity building. It facilitates collaboration among governments, NGOs, and communities to promote sustainable conservation practices and biodiversity protection worldwide.

#### WHY IN NEWS?

The WCPA presented the Kenton R. Miller Award to Sonali Ghosh and Roque Simón Sevilla Larrea for their contributions to protected area sustainability.

### **World Green Economy Summit (WGES)**

The **World Green Economy Summit (WGES)** is an annual global forum held in Dubai since 2012, focused on sustainable development and green economic growth. It gathers policymakers, industry leaders, and innovators to discuss climate action, renewable energy, and circular economy strategies. WGES promotes international collaboration to achieve net-zero emissions and supports small and medium enterprises in green innovation. The summit features thematic sessions on climate finance, equity, and youth engagement. It is co-located with the Water, Energy, Technology, and Environment Exhibition (WETEX), enhancing cross-sectoral dialogue. WGES is instrumental in shaping regional and global sustainable policies and partnerships.

#### WHY IN NEWS?

The 11th WGES opened in Dubai, attracting over 3,300 participants from 30+ countries to discuss accelerating the green economy and climate action under the theme Innovating for Impact.

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



## Budabudike

Budabudike is a traditional folk musical instrument from the Belagavi region of Karnataka. It is a percussion instrument typically made from wood and animal hide, played during festivals and local ceremonies. The instrument produces rhythmic beats that accompany folk dances and storytelling. Budabudike is integral to preserving regional cultural heritage and is associated with agricultural celebrations and community gatherings. Its playing technique involves hand and stick strikes, creating complex rhythms. The instrument is less known outside Karnataka but remains vital in maintaining the oral and performative traditions of the area's rural communities.

### WHY IN NEWS?

Pundalika Shastri, a Budabudike player from Belagavi, was among the recipients of the Rajyotsava Award, recognizing his contribution to folk arts.

## Chhath Puja

Chhath Puja is a four-day ancient Hindu festival dedicated to the Sun God (Surya) and Chhathi Maiya, primarily observed in Bihar, Jharkhand, Uttar Pradesh, West Bengal, and Nepal. Devotees perform rituals including holy bathing, fasting, and offering prayers to the setting and rising sun, typically on riverbanks or water bodies. The festival involves strict observance of purity, abstinence, and standing in water for long durations. It is unique for its emphasis on environmental cleanliness and community participation. The festival's timing follows the lunar calendar, occurring six days after Diwali. It has been inscribed on UNESCO's list of intangible cultural heritage in some regions.

### WHY IN NEWS?

Chhath Puja was celebrated from 25 to 28 October 2025, prompting a massive travel rush of 2.5 to 3 crore people back to Eastern India, especially Bihar and surrounding states.

## Chhatrapati Sambhajnagar

Chhatrapati Sambhajnagar is the new name for the city formerly known as Aurangabad in Maharashtra. It was renamed in 2022 after Sambhaji Maharaj, the son of the Maratha ruler Shivaji Maharaj. The city was originally named Aurangabad during the Mughal era after Emperor Aurangzeb. Sambhaji Maharaj ruled the Maratha Empire from 1681 to 1689 and was known for his resistance against Mughal expansion. The renaming reflects a shift in local historical and political narratives emphasizing Maratha heritage. The railway station code was changed from 'AWB' to 'CPSN' to reflect the new name.

### WHY IN NEWS?

The Aurangabad Railway Station was officially renamed Chhatrapati Sambhajnagar Railway Station by South Central Railway on September 25, 2025, following the city's renaming three years earlier.

## Gandikota

Gandikota is a historic village in Andhra Pradesh, often called the "Grand Canyon of India" due to its deep gorge formed by the Penna River cutting through the Erramala hills. It features a 13th-century fort built by the Pemmasani Nayaks, known for its massive walls,



temples, and granaries. The area is recognized for its unique geology and biodiversity, attracting eco-tourists and adventure enthusiasts for activities like trekking, rappelling, and camping. Gandikota's fort complex includes the Ranganatha Swamy Temple and Madhavaraya Temple, showcasing Vijayanagara architecture. The site has recently gained attention for conservation efforts and infrastructure improvements under tourism development plans.

#### WHY IN NEWS?

Andhra Pradesh Tourism Department was awarded for promoting Gandikota as a leading eco and adventure destination with improved infrastructure and private sector involvement.

### **Gathasaptasati**

The **Gathasaptasati** is an ancient collection of approximately 700 verses composed in Maharashtri Prakrit, attributed to the Satavahana King Hala around the 1st century CE. It is one of the earliest known poetic works linked to the Marathi language. The verses primarily explore themes of love and daily life, reflecting the socio-cultural milieu of ancient India. The text is for its use of Maharashtri Prakrit, which influenced later Marathi literature. It was rediscovered in the early 20th century and remains a critical source for understanding early Indian poetic traditions and language development.

#### WHY IN NEWS?

Gathasaptasati is brought into light as part of Marathi's recognition as a Classical Language by the Government of India in October 2024, underscoring its ancient literary heritage.

### **Gyan Bharatam Mission**

The **Gyan Bharatam Mission** is a flagship initiative by India's Union Ministry of Culture, launched in 2025, aimed at the identification, documentation, conservation, digitisation, and promotion of India's manuscript heritage. It establishes a National Digital Repository (NDR) to share manuscripts globally. The mission categorizes participating institutes into **cluster centres**, responsible for multiple institutions, and **independent centres**, managing their own collections. It provides funding, equipment, and oversight based on approved work plans and milestones. Activities include survey, cataloguing, conservation, translation, research, publication, and outreach. Centres must form dedicated cells to coordinate efforts and communication.

#### WHY IN NEWS?

Gyan Bharatam Mission is signing Memorandums of About with 20 institutes on manuscript conservation and digitisation, with 30 more to join soon, expanding India's manuscript preservation network.

### **Kangla Fort**

Kangla Fort, located in Imphal, Manipur, is an ancient fortress and the traditional seat of Manipur's royal power. It served as the political and cultural center of the Meitei kingdom until British annexation in the 19th century. The fort houses several historic temples,



palaces, and sacred sites linked to Meitei religion and governance. It was once heavily fortified with moats and walls, symbolizing Manipur's sovereignty. In recent decades, Kangla Fort has been restored and opened to the public as a heritage site, hosting cultural events and festivals that celebrate Manipur's history and identity.

WHY IN NEWS?

Kangla Fort was the venue for the 2025 Mera Hou Chongba festival, underscoring its continuing importance as a cultural and historical landmark in Manipur.

### **Khajuraho Temple Complex**

The Khajuraho temple complex in Madhya Pradesh, is a UNESCO World Heritage site famous for its Nagara-style architecture and intricate erotic sculptures. Built between 950 and 1050 CE by the Chandela dynasty, it originally consisted of around 85 temples, with about 25 surviving. The temples are dedicated to Hindu gods Shiva, Vishnu, and Jain Tirthankaras. The site reflects a blend of spirituality, art, and culture, showcasing themes of love, life, and devotion. The complex is a major pilgrimage and tourist destination, symbolizing ancient Indian temple architecture and religious tolerance.

WHY IN NEWS?

The lawyer who attacked the Chief Justice cited dissatisfaction over remarks related to a plea for restoring a Lord Vishnu idol in the Khajuraho temple complex.

### **Komaram Bheem**

Komaram Bheem (1901–1940) was a tribal leader and revolutionary from Telangana who fought against the oppressive rule of the Nizam of Hyderabad. He led a tribal rebellion to protect forest rights and oppose forced crop confiscation by the Nizam's police. Bheem escaped to Assam after attacks on his community but continued to inspire resistance. He is celebrated as a hero among the Gond tribal community and symbolizes tribal pride and resistance against feudal oppression. His legacy includes contributions to tribal identity and rights movements. His birth anniversary is commemorated to honor his role in tribal empowerment and anti-colonial struggle.

WHY IN NEWS?

Prime Minister Modi commemorated Komaram Bheem's birth anniversary on October 22, recognizing his fight against Nizam's tyranny and his lasting impact on tribal communities.

### **Maa Saryu Aarti**

Maa Saryu Aarti is a ritual worship performed on the banks of the Saryu River, considered sacred in Hinduism, particularly in Ayodhya. This aarti involves devotees rotating oil lamps (diyas) in synchronized movements while chanting prayers. The ritual symbolizes purification and devotion to the river goddess Saryu, believed to be an incarnation of the divine feminine. The 2025 event featured **2,128 priests and devotees** performing the aarti simultaneously, verified by drone footage for a Guinness World Record. The practice strengthens community bonds and is part of Ayodhya's religious traditions.

WHY IN NEWS?

The Maa Saryu Aarti set a Guinness World Record in 2025 during Deepotsav by involving 2,128 participants performing the ritual simultaneously on the Saryu riverbank.



## Mahadev Temple Sculptures

Two sandstone sculptures from the 9th-century Mahadev Temple in Pali, Chhattisgarh, are featured in the museum. The **Nataraja** sculpture depicts Shiva performing the cosmic dance, with one hand raised and another crushing a demon, symbolizing knowledge's triumph over ignorance, accompanied by his bull mount, Nandi. The **Brahma** figure has three faces and four arms holding sacred emblems like the Vedas and a rosary, seated in lalitasana. A goose at his feet signifies wisdom. These sculptures embody the Hindu balance of creation and dissolution and illustrate temple art as a medium for complex philosophy.

### WHY IN NEWS?

These sculptures are part of the stolen objects listed in UNESCO's new virtual museum, denoting India's heritage and the global challenge of cultural repatriation.

## Muthulakshmi Reddy

Muthulakshmi Reddy (1886-1968) was the first Indian woman surgeon from Madras Medical College and the first woman legislator in Madras. She fought for the abolition of the Devadasi system, founded the Avvai women's shelter, and established the Adyar Cancer Hospital, where she ensured equal treatment for poor and affluent patients. Born into the Melakkara community in Pudukottai, she overcame discrimination and was the first girl to attend a boys' school there. Tamil Nadu's maternity benefit scheme is named after her. Her legacy continues in Pudukottai, where many families name daughters after her.

### WHY IN NEWS?

Muthulakshmi Reddy's contributions to medicine, women's rights, and social reform remain influential in contemporary discussions of gender equality and healthcare in India.

## National Digital Repository (NDR)

The **National Digital Repository (NDR)** is a digital platform created under the Gyan Bharatam Mission to store and share Indian manuscript heritage worldwide. It integrates manuscripts from various institutions, enabling access to scholars, researchers, and the public. The NDR supports metadata standards, multilingual content, and secure digital preservation. It promotes collaboration among cluster and independent centres, ensuring quality control and consistent updates. The repository also facilitates translation, cataloguing, and research, serving as a centralized hub for India's vast manuscript collections.

### WHY IN NEWS?

The NDR is part of the Gyan Bharatam Mission's efforts to digitise and globally share India's manuscript heritage through MoUs with multiple cultural institutions.

## Panch Pran

The **Panch Pran** refers to the five core resolutions adopted by the RSS to guide its activities and ethos in the 21st century. These are – social harmony (ending social discrimination), family enlightenment (strengthening family values), environmental



protection (sustainable living), swadeshi conduct (promoting indigenous products and economic nationalism), and civic duty (active citizen responsibility). These principles aim to shape the cultural, moral, and civic life of India, reflecting a comprehensive vision for national renewal rooted in tradition and modern challenges.

#### WHY IN NEWS?

The Panch Pran were announced as part of the RSS's renewed focus during its 100th year, outlining its strategic cultural and social priorities for the future.

### Piprahwa Relics

The Piprahwa relics were discovered in 1898 near Piprahwa village, Uttar Pradesh, believed to be associated with the Buddha's remains or relics of his close disciples. The site contains a stupa with a casket holding bone fragments and inscribed artifacts. These relics provide archaeological evidence supporting Buddhist textual traditions. The inscriptions on the casket are among the earliest known written records linked to the Buddha's lineage. The relics have been subject to scholarly debate regarding their authenticity and dating but remain in Buddhist archaeology. The site is a pilgrimage destination and symbolizes Buddha's historical legacy.

#### WHY IN NEWS?

The International Abhidhamma Day event featured an exhibition denoting the Piprahwa relics, emphasizing their spiritual and cultural heritage.

### Ramman Festival

Ramman is an annual religious festival held in late April in Saloor-Dungra villages, Uttarakhand, dedicated to the local deity **Bhumiyal Devta**. It features ritual theatre, masked dances, and recitations of the Ramayana, accompanied by traditional instruments like the dhol, damau, manjira, jhanjhar, and bhankora. The entire village participates in caste-based roles including priests, mask-makers, and musicians. Performances occur in the temple courtyard, embedding the festival in sacred space. Knowledge and ritual lore are transmitted orally across generations through apprenticeship and community observation. Ramman blends theatre, music, oral tradition, and local history.

#### WHY IN NEWS?

Ramman is inscribed on UNESCO's Intangible Cultural Heritage list, denoting its significance as a living ritual theatre festival preserving Uttarakhand's cultural heritage.

### Salher Fort

Salher Fort is located in the Nashik district of Maharashtra and is the highest fort in the Sahyadri mountain range at an altitude of **1,567 meters**. It played important role during the **Maratha Empire** and was the site of the Salher Battle of 1672, one of the largest fought between the Marathas and the Mughals. The fort's strategic location allowed control over the trade routes in the Western Ghats. It features a large plateau, several water tanks, and remnants of bastions. Salher is less frequented by tourists compared to other forts, preserving its rugged and less commercialized environment.

#### WHY IN NEWS?

Salher Fort is one of the four heritage forts selected for establishing 'Namo Tourism



Information and Facility Centres' to enhance visitor amenities and boost regional tourism infrastructure in Maharashtra.

### **Sarada Script**

The **Sarada Script** originated in the 8th-9th centuries CE and is named after the ancient university Sharda Shakti Peeth, located in Kashmir's Keran sector near the Line of Control in Pakistan-occupied Kashmir. It is the progenitor of many South Asian scripts, including Landa, which was used extensively for literary and administrative purposes. Sarada was primarily used for writing Sanskrit and Kashmiri and played an important role in the cultural and scholarly activities of the region. Its usage declined with the rise of Devanagari and Perso-Arabic scripts but remains important for historical and epigraphic studies.

#### WHY IN NEWS?

Sarada Script is mentioned as the mother script from which Landa and other scripts evolved, denoting its historical significance in the linguistic development of Punjab and Kashmir regions.

### **Separate Electorates Debate**

Separate electorates were a system where communities, especially minorities like Dalits and Muslims, voted separately for their representatives during British India. B.R. Ambedkar initially supported separate electorates for Dalits to ensure political representation. Mahatma Gandhi opposed this, fearing it would divide Hindu society and weaken unity. The disagreement led to the Poona Pact of 1932, which replaced separate electorates with reserved seats for Dalits within the general electorate. This compromise shaped Dalit political participation and influenced Ambedkar's later inclusion in the Constituent Assembly after Partition.

#### WHY IN NEWS?

Gandhi's insistence on Ambedkar's inclusion in the Constituent Assembly, despite past clashes over separate electorates, was crucial for Dalit representation in the Constitution's framing.

### **Somnath Temple**

The Somnath Temple, located in Gir Somnath district, Gujarat, is one of the twelve Jyotirlinga shrines dedicated to Lord Shiva. It has been destroyed and rebuilt multiple times in history, notably by Mahmud of Ghazni in the 11th century. The current structure was reconstructed in the 1950s under the guidance of Sardar Vallabhbhai Patel. The temple is renowned for its Chalukya-style architecture and coastal location near the Arabian Sea. It symbolizes resilience and religious significance in Hinduism. The temple attracts millions of pilgrims annually and is a major cultural and historical landmark in Gujarat.

#### WHY IN NEWS?

President Murmu visited the Somnath Temple during her three-day official visit to Gujarat in October 2025.



## Traditional Knowledge Museum

The Traditional Knowledge Museum planned under the Spice Route Initiative will serve as a repository for age-old knowledge related to architecture, food, spice cultivation, culture, and artisanal skills. It aims to preserve intangible heritage that risks disappearing due to declining traditional industries and practices. The museum will document and safeguard knowledge shared by communities, ensuring it remains accessible for future generations. This institution will complement the food museum in Kozhikode, denoting Kerala's culinary heritage linked to the spice trade, and will use modern technologies like 3D projection to showcase traditional recipes and practices.

### WHY IN NEWS?

A Traditional Knowledge Museum is being established in Kerala to preserve and showcase intangible cultural heritage as part of the broader Spice Route Initiative focusing on heritage conservation and tourism.

## Tribal Frames Film Festival

The Tribal Frames Film Festival is an annual cultural event held in Manipur that showcases films made by and about tribal communities. It aims to promote tribal narratives, folklore, and contemporary issues through cinema. The festival encourages participation from tribal filmmakers across India and internationally. It provides a platform for preserving tribal languages and traditions via visual storytelling. The festival also facilitates dialogue on tribal rights, identity, and development challenges. It is supported by local cultural organizations and government bodies focused on tribal welfare. The festival contributes to raising awareness about tribal heritage beyond traditional art forms.

### WHY IN NEWS?

The Tribal Frames Film Festival in Manipur is part of the Janjatiya Gaurav Varsh Pakhwada events celebrating tribal culture and achievements during November 2025.

## Vikramshila

Vikramshila was an ancient Buddhist university located in present-day Bihar, established in the late 8th or early 9th century CE during the Pala dynasty. It was one of the two most important centers of Buddhist learning in India, alongside Nalanda. Vikramshila specialized in tantric Buddhism and attracted scholars from across Asia. The university declined after the 12th-century invasions but remains an important archaeological site. Excavations have revealed monastery remains, stupas, and sculptures. Conservation efforts aim to preserve these ruins and promote understanding of Buddhist educational heritage.

### WHY IN NEWS?

The National Thermal Power Corporation is funding conservation and development of the excavated remains at Vikramshila, now included in ongoing heritage projects under the new public-private partnership model.

## Science & Technology



## API Setu

API Setu is a government-developed platform that facilitates secure and standardized **application programming interface (API) integration** between various digital services in India. It enables interoperability among government and private sector platforms, ensuring seamless data exchange and service delivery. API Setu supports identity verification, authentication, and compliance with data protection norms. It plays a critical role in connecting platforms like Bharat Taxi with national digital services such as DigiLocker and UMANG. API Setu enhances the scalability, security, and user experience of integrated digital ecosystems under the Digital India initiative.

### WHY IN NEWS?

API Setu is part of the technical infrastructure enabling Bharat Taxi's integration with national digital platforms, supporting the cooperative ride-hailing service's launch in December 2025.

## AVRO HS-748

The **AVRO HS-748** is a British-designed twin-engine turboprop airliner produced under license by Hindustan Aeronautics Limited (HAL) in India from 1961 to 1988. It was primarily used for short-haul passenger and cargo transport. HAL manufactured over **150 units**, making it aircraft in Indian civil and military aviation history. The HS-748 was known for its ruggedness and ability to operate from unprepared airstrips. It was one of the last complete passenger aircraft projects undertaken in India before the SJ-100 collaboration. The aircraft played a key role in connecting remote regions of India before the expansion of jet airliners.

### WHY IN NEWS?

The SJ-100 will be the first complete passenger aircraft produced in India since the AVRO HS-748, marking milestone in Indian civil aviation manufacturing.

## b Value

The **b value** is a seismological parameter describing the ratio of low-magnitude to high-magnitude earthquakes in a region. Typically, a higher b value indicates a larger number of small earthquakes relative to big ones, often associated with stressed or fractured rock. It is used to assess crustal stress changes and has applications in monitoring volcanic activity. The b value can fluctuate as magma moves through the crust, altering stress conditions. This parameter has been studied for decades but was recently applied in a novel statistical way to track magma ascent beneath Mount Etna, revealing correlations between seismicity and volcanic eruptions.

### WHY IN NEWS?

Researchers used the b value to monitor magma movements beneath Mount Etna, improving eruption forecasting after the volcano's June 2025 eruption.

## Bordetella holmesii

**Bordetella holmesii** is a gram-negative bacterium first identified in 1995. It causes pertussis-like respiratory illness but differs genetically and clinically from **Bordetella**



**pertussis**. It often infects immunocompromised patients but can also affect healthy children. Unlike **B. pertussis**, it is less responsive to traditional pertussis vaccines. It can be misdiagnosed due to similar symptoms, complicating treatment. Molecular diagnostic methods are required to differentiate it from other *Bordetella* species. It has been linked to bloodstream infections and endocarditis in rare cases, primarily in patients with underlying health conditions.

#### WHY IN NEWS?

A PGIMER study in northern India reported rise in ***Bordetella holmesii*** infections causing pertussis-like illness, surpassing ***Bordetella pertussis*** in recent years.

### Centaurs

Centaurs are small celestial bodies orbiting the sun between Jupiter and Neptune, exhibiting traits of both asteroids and comets. They are primarily composed of rock, water ice, and complex organic compounds. Centaurs are unstable objects due to gravitational perturbations from giant planets, often having chaotic orbits lasting millions of years. Examples include Chiron and Chariklo, both known to have ring systems. These bodies sometimes display cometary activity such as gas and dust ejection. Their composition and behavior provide clues about the early solar system and the transition between asteroid and comet populations.

#### WHY IN NEWS?

Chiron, a centaur, was found to have a rare evolving ring system, adding to the small but growing number of ringed centaurs, expanding understanding of ring formation beyond large planets.

### Chandra's Atmospheric Composition Explorer-2 (CHACE-2)

CHACE-2 is a mass spectrometer payload onboard India's Chandrayaan-2 orbiter designed to study the lunar exosphere. It measures neutral atoms and molecules, providing data on the composition and pressure of the moon's thin atmosphere. CHACE-2 is a successor to the CHACE instrument flown on Chandrayaan-1. It operates by ionizing gas particles and analyzing their mass-to-charge ratio. The instrument helped detect the impact of solar coronal mass ejections on the lunar exosphere, showing increase in particle density. CHACE-2's data contributes to understanding lunar surface-atmosphere interactions and space weather effects on the moon.

#### WHY IN NEWS?

CHACE-2 made the first-ever observation of a coronal mass ejection's effect on the moon's exosphere during a solar event in May 2024, confirming theoretical predictions about lunar atmospheric changes.

### Chikungunya Virus

The **chikungunya virus** is an alphavirus first isolated in Tanzania in 1952. It causes chikungunya fever, characterized by fever, rash, and severe joint pain that can persist for months. The virus is primarily transmitted by ***Aedes aegypti*** and ***Aedes albopictus*** mosquitoes. There are three genotypes – West African, East/Central/South African (ECSA),



and Asian. The virus's name derives from a Makonde word meaning "that which bends up," describing the posture of patients suffering joint pain. No specific antiviral treatment exists, and vaccines remain limited in availability. Outbreaks have occurred in Africa, Asia, Europe, and the Americas.

#### WHY IN NEWS?

The chikungunya virus caused the first locally acquired infection in New York State since 2019, raising public health concerns about mosquito-borne diseases in temperate regions.

### CI Chondrites

CI chondrites are a rare class of carbonaceous meteorites rich in water and organic compounds, originating from the outer Solar System. They represent less than **1% of all meteorites collected on Earth**. These meteorites contain primitive solar nebula material, offering vital information about early Solar System chemistry. Their high water content makes them crucial for studying the origin of water on planetary bodies. CI chondrites lack chondrules, unlike most meteorites, and are composed mainly of fine-grained minerals. They have a distinctive oxygen isotope signature used to trace their origins. Their rarity and composition make them invaluable for understanding Solar System evolution.

#### WHY IN NEWS?

Lunar samples from Chang'e-6 mission revealed fragments similar to CI chondrites, indicating more frequent collisions from carbonaceous chondrites in the Earth-Moon system than previously thought.

### Coffee-Stain Effect

The **coffee-stain effect** occurs when a droplet of liquid containing suspended particles evaporates, causing particles to migrate outward and form a dense ring-shaped deposit at the droplet's perimeter. This phenomenon was first described scientifically in 1997. It results from capillary flow driven by evaporation rates being higher at the droplet's edges. The effect can be influenced by factors such as particle size, solvent properties, and substrate surface energy. It has applications in inkjet printing, forensic science, and now in enhancing detection sensitivity for trace chemicals using nanoparticle concentration.

#### WHY IN NEWS?

Scientists at Raman Research Institute leveraged the coffee-stain effect to concentrate gold nanorods at droplet edges, enabling ultra-sensitive detection of harmful dyes like Rhodamine B in food and water at parts per trillion levels.

### Coriolis Force

The **Coriolis force** is an apparent force caused by the Earth's rotation, deflecting moving air and water to the right in the Northern Hemisphere and to the left in the Southern Hemisphere. It is crucial for cyclone rotation and is nearly zero at the equator, preventing cyclone formation within about five degrees latitude of it. The force arises because the Earth spins faster at the equator than at the poles, causing moving objects to follow curved paths relative to the surface. Its strength increases with latitude and speed of the



moving object, influencing large-scale weather patterns and ocean currents.

WHY IN NEWS?

The Coriolis force is mentioned as a key factor in cyclone formation, explaining why cyclones rarely form near the equator due to insufficient rotational effect.

### Cut-and-Cover Tunnel Construction

Cut-and-cover is a tunnel construction method where a trench is excavated from the surface, the tunnel structure is built, and then the trench is backfilled. It is typically used for shallow tunnels and involves less complex machinery compared to boring. The method allows easier access during construction but can cause surface disruption. In the Vypin-Fort Kochi project, 1 km of the 2.75 km tunnel will be cut-and-cover at both ends. This technique is often combined with bored tunnels to optimize costs and construction time, especially in urban or coastal environments.

WHY IN NEWS?

The underwater tunnel project includes 1 km of cut-and-cover sections, facilitating construction near the shorelines of Vypin and Fort Kochi.

### DRAVYA Portal

The **DRAVYA portal** is an online knowledge repository launched by the Central Council for Research in Ayurvedic Sciences (CCRAS) to catalogue and digitize information on 100 key medicinal substances used in Ayush systems. It features AI-readiness and QR code integration for standardized data display in medicinal plant gardens and drug repositories. The portal consolidates data from classical Ayurvedic texts and contemporary research, covering pharmacotherapeutics, botany, chemistry, pharmacy, pharmacology, and safety. It supports dynamic updates through dedicated entry software and aims to interlink with the Ayush Grid and other Ministry of Ayush initiatives for drug policy and research harmonization.

WHY IN NEWS?

The DRAVYA portal was revealed on 23rd September 2025 during the 10th Ayurveda Day event in Goa, marking a major step in digital transformation and evidence-based integration of traditional medicine in India.

### Geoffrey Hinton

**Geoffrey Hinton** is a cognitive psychologist and computer scientist known as one of the "godfathers of AI." He developed key algorithms in deep learning and neural networks, which underpin modern machine learning. Hinton's work on backpropagation enabled computers to learn from data efficiently. He co-invented the Boltzmann machine and popularized techniques like dropout for neural networks. Hinton split his time between the University of Toronto and Google Brain. His contributions laid the groundwork for advances in speech recognition, image processing, and natural language understanding. Despite his fame, he has expressed concerns about AI's societal impacts.

WHY IN NEWS?

Hinton was awarded a Nobel Prize for pioneering the physics of machine learning, spotlighting his role in AI's transformative scientific breakthroughs.



## Glycolaldehyde

Glycolaldehyde is a simple sugar-related molecule and a **precursor to ribose**, the sugar backbone of RNA. Its detection in space is because it links to the origins of life's molecular building blocks. While glycolaldehyde has been tentatively observed around protostar ST6, confirmation is pending. It forms under cold, icy conditions on dust grains in star-forming regions. Glycolaldehyde's presence supports theories that complex organic molecules can arise in primitive, metal-poor environments, potentially seeding prebiotic chemistry across the cosmos.

### WHY IN NEWS?

Tentative signs of glycolaldehyde were detected by JWST near ST6, marking a potential breakthrough in understanding the cosmic origins of RNA components.

## GSLV-MkIII-M1 Rocket

The GSLV-MkIII-M1 is India's heavy-lift launch vehicle that carried Chandrayaan-2 into lunar transfer orbit. It is the most powerful rocket developed by ISRO, capable of lifting 4-tonne payloads to geostationary transfer orbit. The MkIII uses two solid strap-on boosters, two liquid core stages, and a cryogenic upper stage. It marked advancement in India's space launch capabilities. The rocket's maiden flight was in 2017, and it is intended for future crewed missions and heavier payloads. The GSLV-MkIII is also known as the LVM3 (Launch Vehicle Mark-3).

### WHY IN NEWS?

GSLV-MkIII-M1 successfully launched Chandrayaan-2 in 2019, enabling India's second lunar mission and subsequent scientific discoveries including CME impact observations.

## IMAP-Lo Instrument

IMAP-Lo is one of the ten instruments aboard NASA's Interstellar Mapping and Acceleration Probe. It specializes in detecting **energetic neutral atoms** (ENAs), particularly interstellar neutral hydrogen and deuterium atoms. These neutral atoms were once charged ions but became neutral by acquiring electrons, allowing them to travel unaffected by magnetic fields. IMAP-Lo can distinguish between primary and secondary populations of these atoms at the heliopause, providing insight into the interaction between solar wind and the interstellar medium. It operates by capturing low-energy ENAs, contributing to detailed mapping of the heliosphere's boundary.

### WHY IN NEWS?

IMAP-Lo's observations are expected to reveal new details about the heliosphere's outer boundary and the nature of interstellar particles entering the solar system.

## India AI Mission

The **India AI Mission** is a government initiative launched by the Ministry of Electronics and Information Technology (MeitY) to accelerate AI research, development, and adoption in India. It focuses on creating AI infrastructure, encouraging talent, and promoting AI startups. The mission supports AI innovation hubs and collaborates with academic institutions and industry to build an AI ecosystem. It emphasizes ethical AI use, data



privacy, and inclusive growth. The mission also facilitates AI policy frameworks and international cooperation. It operates through multiple programs targeting sectors like healthcare, agriculture, education, and governance to enhance public service delivery through AI technologies.

#### WHY IN NEWS?

The India AI Mission is a key organizer of the Uttarakhand AI Impact Summit 2025, denoting its role in promoting AI-led sustainable development and innovation in state of Indias.

#### Kavach 4.0

Kavach 4.0 is India's indigenously developed Automatic Train Protection (ATP) system designed to improve rail safety by preventing collisions and derailments. It consists of three subsystems – stationary, on-board, and a backbone communication network enabling real-time coordination between trains and signals. The system automatically applies brakes if a train overspeeds or crosses signal limits. Kavach 4.0 features a two-out-of-two CPU design and diversified hardware-software architecture to ensure the highest safety integrity. It is currently deployed on 1,600 km of track and planned to expand to 100,000 km, enhancing safety on India's vast railway network.

#### WHY IN NEWS?

Kavach 4.0 was revealed as the next generation ATP system set to cover 100,000 km of Indian Railways, promising enhanced safety and automation.

#### Lanthanides

The **lanthanides** are a series of 15 metallic elements from lanthanum (**La**) to lutetium (**Lu**) in the periodic table, known for their similar chemical properties. They are often found together in mineral deposits and are difficult to separate due to their chemical similarity. Lanthanides are critical in manufacturing strong permanent magnets, phosphors in lighting and displays, and catalysts in petroleum refining. Despite being called rare earths, many lanthanides are more abundant than common metals like lead. Their extraction requires complex chemical processes, and they are often associated with radioactive elements like thorium, complicating mining operations.

#### WHY IN NEWS?

Lanthanides are central to the recent U.S.-China summit deal ensuring continued export of rare earth elements critical for technology and defense industries.

#### Launch Vehicle Mark 3 (LVM3)

The Launch Vehicle Mark 3 (LVM3), also known as GSLV Mk III, is India's heaviest and most powerful launch vehicle. It can carry payloads up to **4 tons to Geosynchronous Transfer Orbit (GTO)** and up to 10 tons to Low Earth Orbit (LEO). LVM3 uses a combination of two solid strap-on boosters, a liquid core stage, and a cryogenic upper stage. It was first launched in 2014 and is the vehicle that launched India's Chandrayaan-3 lunar mission. The rocket has a height of about 43.4 meters and a lift-off mass of roughly 640 tons. It supports both commercial and strategic payload launches.



## WHY IN NEWS?

LVM3 is set to launch the CMS-03 satellite on November 2, 2025, marking its first flight since the Chandrayaan-3 mission in July 2023.

**mRNA Vaccines**

**mRNA vaccines** use messenger RNA to instruct cells to produce a protein that triggers an immune response. They were first developed rapidly during the COVID-19 pandemic. **Katalin Karikó** was a pioneering scientist whose work on mRNA technology enabled these vaccines. Unlike traditional vaccines, mRNA vaccines do not use live virus particles. They can be designed and manufactured faster, allowing rapid response to emerging pathogens. The technology has potential beyond infectious diseases, including cancer treatment. Storage and transport require ultra-cold temperatures, posing logistical challenges. Their success has revolutionized vaccine development and immunotherapy.

## WHY IN NEWS?

The Nobel Prize recognized foundational work on mRNA vaccines, denoting their global impact on public health and accelerating vaccine science.

**Nafithromycin**

Nafithromycin is an antibiotic developed indigenously in India, targeting resistant respiratory infections. It belongs to the ketolide class of antibiotics, effective against bacteria that have developed resistance to macrolides. Nafithromycin shows promise in treating infections in immunocompromised patients, including those with cancer and poorly controlled diabetes. It was developed to address the growing problem of antimicrobial resistance in respiratory pathogens. The drug's development marks a milestone in India's pharmaceutical self-reliance. Nafithromycin is designed to inhibit bacterial protein synthesis by binding to the 50S ribosomal subunit, preventing bacterial growth and proliferation.

## WHY IN NEWS?

India announced the development of Nafithromycin, its first indigenously discovered antibiotic, denoting a major step in combating resistant respiratory infections.

**National Institute of Electronics and Information Technology (NIELIT)**

The **National Institute of Electronics and Information Technology (NIELIT)** is an autonomous scientific society under India's Ministry of Electronics and Information Technology. Established in 1994, it focuses on training, consultancy, product development, and certification in IT, electronics, and communication. NIELIT operates multiple centers across India offering courses from basic computer literacy to advanced electronics and software development. It plays a key role in government digital initiatives and skill development programs. NIELIT also conducts the DOEACC scheme, a recognized certification for IT professionals. Its collaboration with industry and academia supports innovation and capacity building in emerging technologies like AI and IoT.

## WHY IN NEWS?

NIELIT is helping train over 10,000 Indian teachers in AI tools and pedagogy as part of the government's initiative to integrate AI education from class three onwards.



## National Quantum Mission

The **National Quantum Mission** is an Government of India initiative launched to develop quantum technologies over a decade with a budget exceeding \$1 billion. It targets advancements in quantum computing, communication, sensing, and cryptography. The mission aims to establish quantum labs and encourage collaboration between academia, industry, and startups. It supports training programs to build a skilled workforce in quantum science and technology. The mission also promotes indigenous development of quantum hardware and software, positioning India among the global leaders in quantum research and application.

### WHY IN NEWS?

The National Quantum Mission is mentioned as a key government initiative driving India's focus on future technologies like quantum computing and its integration into the innovation ecosystem.

## Organic Molecule Precursors

Organic molecule precursors detected in Enceladus' plumes include compounds that can lead to amino acids, the building blocks of proteins. These molecules are primarily carbon-based and exhibit diverse chemical structures, some newly identified by recent Cassini data reanalysis. They may form abiotically through chemical reactions in the moon's ocean without biological processes. These intermediates are essential for synthesizing more complex biomolecules under favorable conditions. Their presence indicates a chemically rich environment capable of supporting prebiotic chemistry, which is crucial for understanding the potential for life beyond Earth.

### WHY IN NEWS?

Researchers found new classes of organic molecule precursors in Enceladus' plume data, expanding knowledge of the moon's subsurface chemical complexity and habitability potential.

## Polymetallic Sulphides (PMS)

Polymetallic Sulphides are mineral deposits found on the ocean floor, primarily near hydrothermal vents. They contain **copper, zinc, lead, gold, and silver**, along with trace amounts of rare elements. PMS forms when cold seawater seeps through cracks in the seabed, heats up by magma, and then expels mineral-rich fluids that solidify on the ocean floor. These deposits are located at depths of 2,000 to 5,000 meters on rugged, rocky terrain along mid-ocean ridges. PMS is crucial for high-tech and green technologies due to its rich metal content, making it a strategic resource for countries like India.

### WHY IN NEWS?

India signed a new contract with the International Seabed Authority to explore PMS in the Carlsberg Ridge, making it the first country with two such contracts for PMS exploration.

## PUNCH Space Mission

The **PUNCH** (Polarimeter to Unify the Corona and Heliosphere) mission is a NASA project launched in 2025 to study the solar wind and the Sun's corona as a connected system. It



uses four microsatellites flying in formation to capture wide-field images of the solar wind from the Sun's outer atmosphere to Earth's orbit. The mission aims to provide unprecedented visual data to understand how solar particles and magnetic fields propagate through space, which affects space weather. PUNCH's polarimeters measure the polarization of sunlight scattered by electrons in the solar wind, revealing its structure and dynamics.

#### WHY IN NEWS?

PUNCH mission was brought into light during a public lecture in Thiruvananthapuram, emphasizing its role in visualizing the solar wind and studying space weather during the current solar maximum phase.

### QR Code Medicine Verification

**QR code medicine verification** is a technology used in pharmaceutical packaging to authenticate medicines and prevent counterfeiting. Each medicine pack is printed with a unique QR code linked to a secure database containing product details, manufacturing information, and supply chain data. Consumers and pharmacists can scan the QR codes using smartphones to verify the authenticity of the product instantly. This system enhances traceability and transparency and helps regulatory authorities track and recall counterfeit or substandard drugs. QR code verification is part of India's regulatory push to strengthen drug safety and is increasingly mandated for prescription and over-the-counter medicines.

#### WHY IN NEWS?

Referenced as a key technological tool deployed by Indian pharma companies to combat counterfeit medicines and improve patient safety.

### Raman Research Institute

The **Raman Research Institute (RRI)** is a premier research institution located in Bengaluru, founded in 1948 by Nobel laureate C.V. Raman. It focuses on fundamental research in physics and astronomy. The institute has contributed to quantum physics, astrophysics, and condensed matter research. RRI maintains advanced experimental facilities and collaborates internationally. Its quantum physics group, led by Urbasi Sinha, has pioneered work in quantum random number generation and device-independent quantum cryptography. The institute is a key participant in India's National Quantum Mission, promoting cutting-edge quantum technologies with strategic and commercial potential.

#### WHY IN NEWS?

RRI researchers led by Urbasi Sinha achieved a global first by experimentally certifying true quantum randomness using a commercial quantum computer, a milestone in quantum technology development.

### Rotavac Vaccine

Rotavac is an **indigenous oral rotavirus vaccine** developed in India, administered at 6, 10, and 14 weeks of age. It was introduced in India's Universal Immunization Program



(UIP) in 2016 and is provided free to eligible children. The vaccine's **effectiveness is 54%**, matching its phase 3 trial efficacy. It was developed via a public-private partnership involving Bharat Biotech, the Department of Biotechnology, NIH, CDC, Stanford University, PATH, and the Bill & Melinda Gates Foundation. Rotavac targets rotavirus, which causes severe gastroenteritis in children under five, responsible for over 128,000 annual deaths in India alone.

#### WHY IN NEWS?

A multi-centre study published in *The Nature Medicine* in 2025 confirmed Rotavac's sustained effectiveness across nine states of India from 2016 to 2020, showing reductions in rotavirus hospitalizations among children.

### Scandium

Scandium (**Sc**) is a rare earth element often grouped with the lanthanides but technically a transition metal. It is lightweight and has a high melting point, making it valuable in aerospace alloys and sports equipment like bicycle frames. Scandium is not abundant and is usually found in trace amounts within other mineral ores, making its extraction expensive. It enhances aluminum alloys by improving strength and corrosion resistance. Scandium-based solid oxide fuel cells are being researched for their efficiency. Despite its industrial potential, global production remains limited, with most supply coming as a byproduct of other mining operations.

#### WHY IN NEWS?

Scandium is part of the broader rare earth export discussions between the U.S. and China affecting supply chains in aerospace and advanced materials.

### Serum Institute of India

The **Serum Institute of India** is the world's largest vaccine manufacturer by volume, producing over 1.5 billion doses annually. Founded in 1966 by Dr. Cyrus Poonawalla, it played an important role during the COVID-19 pandemic by rapidly scaling production of vaccines like Covishield. It supplies vaccines to over 170 countries and collaborates with global organizations such as GAVI and WHO. The institute focuses on affordable vaccines for diseases including polio, measles, and influenza. It operates multiple facilities in Pune, Maharashtra, and invests heavily in research and development for new vaccine technologies.

#### WHY IN NEWS?

The Serum Institute of India is brought into light for its pandemic response and its status as the world's largest vaccine producer, showcasing India's global leadership in healthcare innovation.

### Silmitasertib (CX-4945)

Silmitasertib (CX-4945) is a small-molecule inhibitor targeting protein kinase CK2, involved in cell growth and survival pathways. It has received orphan drug status from the US FDA for advanced cholangiocarcinoma since 2017. Silmitasertib is currently in clinical trials for multiple myeloma, kidney cancer, medulloblastoma, and advanced solid tumors. The



drug's mechanism enhances immune system recognition of early-stage cancerous tumors. Its repurposing was suggested by AI scanning extensive cancer biology literature, demonstrating potential beyond its original indications. Silmitasertib's development marks the growing role of targeted kinase inhibitors in oncology.

#### WHY IN NEWS?

The AI model C2S-Scale proposed silmitasertib as a drug to improve immune detection of nascent tumors, accelerating drug repurposing efforts in cancer therapy.

### **Synthetic Aperture Radar (SAR)**

Synthetic Aperture Radar (SAR) is a remote sensing technology that uses radar signals to create high-resolution images of Earth's surface. Unlike optical sensors, SAR can penetrate clouds and operate day or night, providing consistent data regardless of weather or lighting. It works by emitting microwave pulses and measuring the reflected signals to build detailed images. SAR is widely used for monitoring terrain deformation, ice movements, and maritime surveillance. Its integration with optical sensors on Mission Drishti allows comprehensive Earth observation by combining radar and visual data for enhanced analysis.

#### WHY IN NEWS?

SAR is a key technology onboard the Mission Drishti satellite, enabling all-weather, round-the-clock Earth observation capabilities.

### **Temporomandibular Jaw Disorders**

Temporomandibular jaw disorders (TMD) affect the jaw joint and muscles controlling jaw movement. Symptoms include jaw pain, clicking sounds, and difficulty chewing. TMD is more prevalent in fibromyalgia patients due to shared muscle tenderness and central sensitization. The disorder can cause headaches, ear pain, and facial discomfort. Causes include trauma, arthritis, and stress-related jaw clenching. Diagnosis involves clinical examination and imaging like MRI or CT scans. Treatment ranges from physical therapy and bite guards to medications and, rarely, surgery. TMD symptoms often worsen during fibromyalgia flare-ups due to increased muscle sensitivity and inflammation.

#### WHY IN NEWS?

TMD is noted as a frequent comorbidity in fibromyalgia, contributing to the overall pain and discomfort experienced by patients.

### **Time Rondeau Crystal**

A **time rondeau crystal (TRC)** is a newly discovered phase of matter exhibiting a unique form of temporal order combining long-term periodicity with short-term randomness. Unlike regular time crystals, which oscillate with perfect periodicity, TRCs display irregular motion between repeating patterns. Created using **carbon-13 nuclear spins in diamond** controlled by microwave pulses, TRCs maintain metastable order lasting seconds, longer than typical microscopic processes. The randomness in pulse timing itself has structure, making the system partly unpredictable short-term but predictable over longer intervals. TRCs expand the concept of temporal order beyond strict periodicity, blending order and



disorder in time.

#### WHY IN NEWS?

Scientists reported the discovery of the time rondeau crystal in October 2025, revealing a new phase of matter that combines temporal order and randomness, challenging previous notions of time-based order in physics.

### Underground Coal Gasification (UCG)

Underground Coal Gasification (UCG) is a process that converts coal into combustible gas while still underground by injecting oxidants such as air or oxygen and steam into coal seams. This method allows access to deep, unmineable coal reserves without traditional mining. The produced gas, known as syngas, contains hydrogen, carbon monoxide, methane, and carbon dioxide, which can be used for power generation or as chemical feedstock. UCG reduces surface disturbance and waste generation compared to conventional mining. It requires careful control to prevent groundwater contamination and subsidence. Countries like Australia, China, and India have ongoing pilot projects and commercial interest in UCG technology.

#### WHY IN NEWS?

India is incorporating UCG-specific provisions in its 14th round of coal mine auctions aiming to gasify 100 million tonnes by 2030, reducing fossil fuel dependence and boosting domestic energy security.

### Viridans Streptococci

Viridans streptococci are a group of **alpha-hemolytic bacteria** commonly found in the human oral cavity. They form biofilms on teeth surfaces and are typically harmless but can cause infective endocarditis if they enter the bloodstream. These bacteria are **resistant to immune clearance** when embedded in biofilms, enabling persistence in hostile environments. Viridans streptococci are implicated in dental plaque formation and have been newly linked to atherosclerotic plaques, where they may contribute to plaque rupture by activating immune receptors like **Toll-like receptor 2 (TLR2)**. They are not easily eradicated by antibiotics due to biofilm protection.

#### WHY IN NEWS?

A new study found viridans streptococci forming biofilms inside coronary artery plaques, potentially triggering heart attacks by contributing to plaque rupture and inflammation.

### Zodiacal Light

Zodiacal light is a faint, diffuse glow visible in the night sky along the ecliptic shortly after sunset or before sunrise. It is caused by sunlight scattering off **interplanetary dust particles** concentrated in the inner Solar System. This phenomenon is best seen from locations with extremely dark skies and minimal light pollution, such as Hanle. The light appears as a triangular, pale white or yellowish band extending upward from the horizon. Zodiacal light is distinct from the Milky Way and is often mistaken for dawn or dusk twilight. Its visibility depends on the observer's latitude, time of year, and atmospheric conditions.



## WHY IN NEWS?

During the Hanle star party, zodiacal light was brought into light as an elusive celestial phenomenon uniquely observable from the reserve's exceptionally dark skies.

**International Relations & Organizations****Abraham Accords**

The **Abraham Accords** are normalization agreements initiated in 2020 between Israel, the UAE, and Bahrain, later joined by Morocco and Sudan. These accords marked shift in Arab-Israeli relations, breaking decades of non-recognition by some Arab states. The accords focus on economic cooperation, security, and diplomatic ties, aiming to counterbalance Iranian influence. Less known is that the accords faced internal opposition within signatory states and did not include the Palestinians, causing regional tensions. The accords also involve covert intelligence sharing and joint military exercises. Their extension to Saudi Arabia has been stalled due to recent Israeli actions in Gaza and Qatar.

## WHY IN NEWS?

The text discusses how Israeli actions in Gaza and the attack on Hamas negotiators in Qatar have set back the Abraham Accords and stalled normalization with Saudi Arabia in 2025.

**APEC Summit 2025**

The **APEC Summit 2025** is scheduled to be hosted by South Korea in late 2025, gathering leaders from 21 Pacific Rim economies. It focuses on regional economic cooperation, trade liberalization, and sustainable growth. The summit often coincides with geopolitical tensions, as seen with North Korea's missile tests in the Sea of Japan ahead of the event. The 2025 summit is for South Korea's diplomatic positioning amid rising security concerns and its push for greater military autonomy. It is expected to include discussions on security, economic recovery post-pandemic, and technological innovation.

## WHY IN NEWS?

North Korea fired short-range ballistic missiles ahead of the APEC Summit 2025, which is being hosted by South Korea, escalating regional tensions just before the event.

**Ayni Airbase**

The **Ayni Airbase** is located about 10 km west of Dushanbe, Tajikistan's capital. Originally built during the Soviet era, it fell into disrepair after the Soviet Union's collapse. India invested nearly \$100 million over two decades to upgrade the base, including runway extension for combat jets like the Su-30MKI, hardened shelters, fuel depots, and air traffic control facilities. The base hosted up to 200 Indian personnel at its peak. Its strategic location is near Afghanistan's Wakhan Corridor, close to Pakistan-occupied Kashmir, giving India leverage in Central Asia. India vacated the base by 2022 after the bilateral agreement lapsed.

## WHY IN NEWS?

India ended its presence at Ayni Airbase in 2025 after the bilateral agreement with Tajikistan was not renewed, marking the end of a two-decade military and strategic engagement in the region.



## Baghlihar Hydro Project

The **Baghlihar Hydro Electric Project** is a run-of-the-river power station on the Chenab River in Jammu and Kashmir. Commissioned in phases from 2001 to 2008, it has a capacity of 450 MW. The project has been a subject of dispute between India and Pakistan under the Indus Waters Treaty due to concerns over water flow regulation. It consists of a concrete gravity dam, a spillway, and underground powerhouses. The project aims to generate electricity without large-scale water storage, minimizing environmental impact. It has also played a role in regional geopolitics related to water sharing in the Indus basin.

### WHY IN NEWS?

The Baghlihar project's sluices were closed following the suspension of the Indus Water Treaty in April 2025, affecting river flow and escalating tensions between India and Pakistan over water sharing.

## Black Sea Grain Initiative

The **Black Sea Grain Initiative** was brokered by Turkey in 2022 to facilitate safe maritime export of grain from Ukraine amid the Russia-Ukraine war. It helped ease global food supply disruptions caused by the conflict. The deal involved coordination between Moscow, Kyiv, Ankara, and the UN, allowing grain shipments through the Black Sea despite ongoing hostilities. Turkey's intelligence and diplomatic efforts were crucial in maintaining the agreement. The initiative was periodically renewed and helped stabilize grain prices worldwide. It also included monitoring mechanisms to ensure the safety of vessels and prevent military shipments disguised as commercial cargo.

### WHY IN NEWS?

Turkey's role in brokering and managing the Black Sea Grain Initiative is brought into light as part of its rising influence in regional mediation and peace diplomacy during ongoing conflicts.

## Buenos Aires Plan of Action (BAPA)

The **Buenos Aires Plan of Action** was adopted in 1978 during the United Nations Conference on Technical Cooperation among Developing Countries. It established a framework for **South-South Cooperation** emphasizing solidarity, mutual respect, and shared learning between developing nations. BAPA laid the groundwork for technical assistance flows independent of traditional donor-recipient models. It remains a foundational document guiding cooperation aimed at self-reliance and capacity building. The plan encourages countries to share knowledge, technology, and resources directly, bypassing traditional aid mechanisms. BAPA is commemorated annually on **September 12**, recognized as the UN Day for South-South and Triangular Cooperation.

### WHY IN NEWS?

2025 marks the anniversary of BAPA, denoting its ongoing relevance in the evolution of South-South and Triangular Cooperation amid global development challenges and the push for innovative partnership models.



## International North South Corridor (INSTC)

The **International North South Transport Corridor (INSTC)** is a multi-modal network of ship, rail, and road routes connecting India, Iran, Afghanistan, Central Asia, and Russia, facilitating trade between South Asia and Northern Europe. It aims to reduce transit time and costs compared to traditional routes via the Suez Canal. The project involves over 7,200 km of transport routes and includes key nodes like the Chabahar port in Iran and Bandar Abbas. INSTC was first proposed in **2000** and has participants from over 10 countries. It is seen as a strategic alternative to routes dominated by China's Belt and Road Initiative.

### WHY IN NEWS?

India plans to use the INSTC via Chabahar port to connect to northern Europe, but US sanctions on Iran threaten the development and operational viability of this corridor.

## Japan International Cooperation Agency (JICA)

The **Japan International Cooperation Agency (JICA)** is a governmental agency that coordinates official development assistance for the government of Japan. Established in 1974, it provides technical cooperation, loans, and grants to developing countries. JICA has been a key partner in India's bullet train project, funding approximately 81% of the Mumbai-Ahmedabad corridor's Rs. 1,08,000 crore cost. JICA's involvement includes technology transfer, project management, and training Indian personnel. It promotes sustainable development and infrastructure improvement globally, with a focus on economic growth, human security, and environmental conservation.

### WHY IN NEWS?

JICA is funding the majority of the Mumbai-Ahmedabad bullet train project and providing technical assistance, enabling progress toward the 2027 operational target.

## MAHASAGAR Initiative

MAHASAGAR stands for **Mutual and Holistic Advancement for Security and Growth**, an Indian initiative focused on enhancing maritime security and economic growth through regional cooperation. Launched to complement global connectivity efforts, it emphasizes integrated development of maritime infrastructure, including ports, shipping, and coastal surveillance. It promotes sustainable use of marine resources and disaster resilience. MAHASAGAR is aligned with India's broader strategic goals to secure its maritime borders and boost trade. It works closely with international partners like the EU under the EU-India Connectivity Partnership, aiming to encourage cooperation in energy, transport, and digital infrastructure across the Indian Ocean region.

### WHY IN NEWS?

MAHASAGAR is brought into light as part of the EU-India collaboration under the EU-India Connectivity Partnership to strengthen global connectivity and regional trade ahead of the 2026 India-EU summit.

## Quadrilateral Security Dialogue (QUAD)

The **Quadrilateral Security Dialogue**, or QUAD, was first proposed by **Shinzo Abe** in 2007



as a strategic coalition of the United States, Japan, and Australia. It aims to promote a free and open Indo-Pacific region. The initiative initially went dormant after 2007 but was revived in 2017 due to rising Chinese assertiveness, including the Belt and Road Initiative and territorial disputes in the South and East China Seas. QUAD focuses on military, economic, infrastructural, and technological cooperation but is not a formal treaty, relying on consensus among member states. It faces challenges due to recent US trade tensions with its partners.

#### WHY IN NEWS?

The October 2025 QUAD summit was put on hold due to increasing bilateral tensions between the US and member countries, especially India, Australia, and Japan, driven by US trade tariffs and diplomatic strain under Donald Trump's leadership.

#### SAFE Framework of Standards

The **SAFE Framework of Standards** is a global customs security initiative developed by the World Customs Organization (WCO) to secure and facilitate international trade. It establishes guidelines for customs administrations to identify and manage security risks while ensuring smooth trade flows. The framework promotes trusted trader programmes like the AEO, encouraging collaboration between customs and businesses for mutual benefit. It includes standards for cargo security, supply chain integrity, and risk management. The SAFE Framework is periodically updated to address emerging threats and technologies, and it is implemented by over 180 WCO member countries worldwide.

#### WHY IN NEWS?

India's AEO programme aligns with the WCO's SAFE Framework, providing a global model for secure and efficient customs operations praised by the WTO.

#### Thalweg Principle

The Thalweg principle defines a boundary along the **mid-channel of a navigable watercourse**. It is used in international law to demarcate river or creek boundaries between states. The principle applies only if the water body is navigable. India applies this principle to Sir Creek, asserting the boundary lies along the creek's mid-channel. Pakistan disputes this, claiming Sir Creek is non-navigable, thus the principle is inapplicable. The disagreement complicates the border dispute and affects Exclusive Economic Zone (EEZ) delimitation in the Arabian Sea.

#### WHY IN NEWS?

The India-Pakistan boundary dispute over Sir Creek revolves around whether the Thalweg principle applies to the creek's boundary delimitation.

#### Track 1.5 Dialogue

Track 1.5 Dialogue is a hybrid diplomatic format combining official government representatives (Track 1) and non-governmental actors such as industry experts and researchers (Track 2). This approach facilitates informal yet impactful discussions that bridge policy and practical implementation. It enables multi-stakeholder engagement to solve complex issues like renewable energy supply chains and climate cooperation. The



India-Australia REP incorporates Track 1.5 Dialogue to enhance collaboration on clean energy, allowing flexible, multi-sector input while maintaining strategic alignment between governments and industries.

#### WHY IN NEWS?

The Track 1.5 Dialogue is part of the REP framework discussed during the Australia-India talks on strengthening renewable energy cooperation and supply chain resilience.

### UNSC Consolidated Sanctions List

The United Nations Security Council Consolidated Sanctions List includes individuals and entities subject to sanctions such as asset freezes, travel bans, and arms embargoes. Established under various UNSC resolutions, it targets those involved in terrorism, proliferation of weapons, and violations of international peace. Amir Khan Muttaqi has been on the list since January 2001 due to his association with the Taliban. Inclusion in the list requires member states to restrict the listed individuals' international movements and financial transactions. Waivers can be granted for diplomatic travel, as happened in 2025 when the UN allowed Muttaqi's visit to India despite initial refusals.

#### WHY IN NEWS?

Amir Khan Muttaqi's visit to India in October 2025 required a waiver from the UNSC Sanctions Committee, denoting the diplomatic complexities of engaging with Taliban officials.

### Wassenaar Arrangement

The **Wassenaar Arrangement** is a multilateral export control regime established in 1996 to promote transparency and responsibility in the trade of conventional arms and dual-use goods and technologies. It includes over 40 participating states who voluntarily exchange information and commit to control lists. In 2013, it expanded to cover intrusion software, targeting cyber-surveillance tools. The Arrangement retains government discretion on licensing and enforcement. It was originally designed for physical exports, leading to gaps in addressing modern cloud services and software-as-a-service (SaaS) models. It operates by consensus, allowing any member to block changes, limiting adaptability.

#### WHY IN NEWS?

The Wassenaar Arrangement is under scrutiny for its inability to effectively regulate cloud-based surveillance technologies, following concerns about Microsoft's infrastructure being used to support Israeli repression of Palestinians.

### WHO Western Pacific Region

The WHO Western Pacific Region covers 38 countries and areas in Asia and the Pacific, including island nations like Fiji, Vanuatu, and Papua New Guinea. It supports member states in health promotion, disease prevention, and control of communicable and non-communicable diseases. Since 2016, 13 member states have been validated for eliminating at least one NTD. The Regional Office focuses on health equity, sustainable development, and strengthening health systems. It collaborates with governments and



partners to address regional health challenges, including neglected tropical diseases, maternal and child health, and emergency response.

#### WHY IN NEWS?

The WHO Western Pacific Region is brought into light for its role in supporting Fiji and other countries in eliminating trachoma and advancing health equity across Pacific island nations.

### Zaranj-Delaram Highway

The Zaranj-Delaram Highway is a 217-kilometer road in Afghanistan connecting the southwestern city of Zaranj near the Iran border to Delaram, linking to the Afghan ring road. Constructed by India between 2009 and 2010, it provides Afghanistan with direct access to the Iranian port of Chabahar, bypassing Pakistan. The highway is strategically important for Afghanistan's trade and economic independence. It enhances regional connectivity and reduces reliance on Pakistani transit routes. The project faced challenges including Taliban attacks during construction. The highway is a symbol of India-Afghanistan cooperation and plays an important role in regional geopolitics involving India, Pakistan, and Iran.

#### WHY IN NEWS?

The Zaranj-Delaram Highway represents India's infrastructural investment in Afghanistan, impacting regional trade and strategic dynamics amid Taliban rule and shifting alliances in 2025.

## Social Development & Government Schemes

### ALIMCO

ALIMCO (Artificial Limbs Manufacturing Corporation of India) is a public sector enterprise under the Ministry of Social Justice and Empowerment. It manufactures and supplies **assistive devices** like artificial limbs, calipers, and rehabilitation aids for persons with disabilities. Established in 1972, ALIMCO operates a network of over 500 centers across India for distribution and fitting. It collaborates with government schemes and NGOs to enhance accessibility and rehabilitation. The company also focuses on innovation in low-cost assistive technology and works closely with DEPwD to promote inclusive development in India.

#### WHY IN NEWS?

The launch of the revamped Sugamya Bharat App took place at the ALIMCO stall during the Purple Fest, denoting ALIMCO's role in disability empowerment.

### B-MAAN Scheme

The **Building and Management of Aviation Assets and Network (B-MAAN)** scheme is a ₹14,182 crore initiative by the Odisha government aimed at transforming the state into an aviation hub in eastern India. It integrates infrastructure development, air connectivity, maintenance, repair and overhaul (MRO) ecosystems, cargo logistics, capacity building, and institutional strengthening under one framework. The scheme also focuses on emerging aviation technologies like drones, seaplanes, e-VTOL aircraft, and aerospace



manufacturing. **Viable Gap Funding (VGF)** is included to support unprofitable but essential air routes. It promotes sustainable and green mobility solutions in aviation.

#### WHY IN NEWS?

The Odisha government recently approved the B-MAAN scheme to boost the state's aviation sector and position it as a key aviation hub in eastern India by 2030.

### **Beijing Declaration and Platform for Action**

The **Beijing Declaration and Platform for Action** was adopted in 1995 at the Fourth World Conference on Women. It outlines strategic objectives and actions for achieving gender equality, including full participation of women in education, employment, and decision-making. The declaration emphasizes eliminating discrimination and violence against women. It has been a foundational framework for international gender policies and remains a reference point for governments and organizations worldwide. It called for transformative changes beyond access, focusing on systemic barriers and cultural norms that hinder women's empowerment and equal participation. The declaration is reviewed periodically to assess progress and challenges in gender equality.

#### WHY IN NEWS?

The Beijing Declaration is referenced as a landmark framework in UNESCO's 2025 report assessing global progress and ongoing challenges in achieving gender parity in education worldwide.

### **BHASHINI Platform**

BHASHINI is a government AI-enabled platform providing **multilingual, voice-first access** to government services, designed to overcome language and literacy barriers in rural India. It supports voice-assisted interaction in multiple Indian languages, enabling users with low digital literacy to engage with digital services effectively. BHASHINI integrates natural language processing and speech recognition tailored for diverse dialects. It is part of India's broader digital inclusion strategy, helping rural women farmers access financial schemes, market information, and advisory services. The platform is a key tool in bridging the digital divide in agriculture.

#### WHY IN NEWS?

BHASHINI is noted for empowering women farmers through digital literacy and access to government services, supporting their inclusion in modern agricultural markets and financial systems.

### **Civil Registration System (CRS)**

The **Civil Registration System (CRS)** in India is a government mechanism for recording vital events such as births and deaths. It operates at the local level through registrars in municipalities and rural areas. The CRS aims for universal and timely registration, which is essential for legal identity, demographic statistics, and public health monitoring. Despite improvements, registration completeness varies widely across states, with some achieving over 90% timely registration and others lagging below 80%. The system excludes some data from regions like Sikkim in certain reports, affecting national completeness



estimates.

#### WHY IN NEWS?

The 2023 Vital Statistics report, based on CRS data, showed 98.4% overall birth registration but noted variation in timely registration across states.

### **Commonwealth Women Parliamentarians (CWP)**

The **Commonwealth Women Parliamentarians** network was launched in **1989** to increase female representation and influence in Commonwealth legislatures. It promotes gender-sensitive policies and supports women parliamentarians through mentoring, advocacy, and capacity-building programs. The CWP organizes biennial conferences and workshops focusing on gender equality, legislative reforms, and women's empowerment. It works closely with the CPA and other Commonwealth bodies to mainstream gender issues in parliamentary work. The network has contributed to measurable increases in women's political participation in several member states.

#### WHY IN NEWS?

Dr. D. Purandeswari will attend the CWP Steering Committee meeting and participate as a panellist on gender-sensitive parliaments during the 68th CPC in Barbados.

### **Distributed Renewable Energy (DRE)**

Distributed Renewable Energy (DRE) refers to decentralized energy systems that generate power close to the point of use, often from renewable sources like solar. DRE technologies include solar cold storage, solar-powered looms, and irrigation pumps, which reduce drudgery and increase productivity in rural areas. In India, DRE supports women entrepreneurs by enabling clean, affordable energy access, improving enterprise efficiency. Barriers to adoption include lack of awareness, socio-cultural norms, fragmented supply chains, and a ₹20-25 trillion credit gap for women-owned MSMEs. Programs like DEWEE promote DRE adoption to empower women economically and support energy transition in rural India.

#### WHY IN NEWS?

DRE is in focus for its transformative impact on women-led rural enterprises and its integration into government schemes like NRLM to encourage sustainable economic growth.

### **Dogri Language**

Dogri is an Indo-Aryan language spoken primarily in the Jammu region of Jammu & Kashmir. It received constitutional recognition in India only in 2003 and was declared one of the Union Territory's official languages in 2020. Dogri has a rich oral tradition but lacks widespread institutional support, especially in education. The language shows a steep generational decline in literacy and usage, with zero proficiency in reading and writing among those under 20. Rural areas maintain stronger spoken use and cultural transmission compared to urban centers. Dogri uses the Takri script historically, though Devanagari is more common.

#### WHY IN NEWS?

Dogri is in decline despite official recognition, with surveys denoting generational and



rural-urban divides in proficiency and usage, emphasizing the urgent need for policy support and educational inclusion.

### **Dongoria Kondh Tribe**

The **Dongoria Kondh** are an indigenous tribe inhabiting the Niyamgiri Hills in Odisha. They practice traditional animist beliefs centered around the sacred mountain Niyam Raja. Their economy is based on shifting cultivation and forest produce. The tribe fiercely opposed bauxite mining by Orissa Mining Corporation, citing threats to their culture, religion, and environment. In 2013, the Supreme Court of India upheld their right to a referendum under the Forest Rights Act, affirming the gram sabha's authority to protect tribal customs and resources. The Dongoria Kondh maintain community-based dispute resolution and sustainable forest management practices.

#### WHY IN NEWS?

The Supreme Court judgment involving the Dongoria Kondh serves as a precedent in opposing forest land diversion for the Great Nicobar Island project, emphasizing tribal rights under the Forest Rights Act.

### **e-SHRAM Portal**

The **e-SHRAM Portal** is a national database launched in 2021 to register unorganized sector workers in India. It collects biometric and demographic data to provide social security benefits and improve welfare delivery. It aims to unify fragmented labor information across sectors and enhance targeted policy interventions. The portal faces challenges like data coordination, privacy concerns, and the digital divide. It connects with other schemes such as Employees' Provident Fund and State Insurance systems but has struggled with integration due to weak inter-agency coordination. e-SHRAM plays a critical role in formalizing India's informal workforce.

#### WHY IN NEWS?

e-SHRAM's integration challenges with other labor platforms are mentioned as a hurdle in the draft Shram Shakti Niti 2025's goal to unify worker databases and improve employment facilitation.

### **Employment-Linked Incentive (ELI) Scheme**

The **Employment-Linked Incentive (ELI) scheme** is a government initiative aimed at boosting formal employment by providing financial incentives to employers for creating new jobs. It targets sectors with high employment potential and focuses on increasing female workforce participation. Employers receive direct monetary benefits linked to the number of jobs generated, particularly for women and marginalized groups. The scheme also encourages formalization of informal jobs by linking incentives to social security contributions. ELI is part of India's broader strategy to improve job quality, reduce unemployment, and promote inclusive growth through targeted fiscal support.

#### WHY IN NEWS?

The ELI scheme is brought into light as a key policy tool to enhance female labor participation and formalize informal employment under India's new employment strategy.



## Fodder Banks

Fodder banks are community-managed reserves of stored fodder, including hay, silage, and concentrated feed, to be used during fodder scarcity periods. They stabilize supply, reduce distress sales of livestock, and support smallholder farmers. Fodder banks are often organized by cooperatives or local groups, providing seeds, advisory services, and feed distribution. They improve resilience against seasonal and climatic fodder shortages. Establishing fodder banks involves coordinated planning, storage infrastructure, and community participation. This system has proven effective in sustaining dairy production during droughts and feed crises, especially in states like Uttar Pradesh and Rajasthan.

### WHY IN NEWS?

Fodder banks are being brought into light as a critical intervention by dairy cooperatives and policymakers to address India's growing fodder deficit and protect rural dairy livelihoods.

## Jal Jeevan Mission

The **Jal Jeevan Mission** is an Government of India initiative launched in 2019 aiming to provide tap water connections to every rural household by 2024. It covers over 15.71 crore rural households, reaching more than **80 percent** of rural homes. The mission emphasizes long-term sustainability, **functionality**, and reliable service delivery rather than just initial coverage. It involves community participation, local institutions, and district administrations to maintain water supply systems. The mission integrates water quality monitoring and promotes water conservation practices. It is funded jointly by the central and state governments.

### WHY IN NEWS?

The Jal Jeevan Mission has achieved over 80 percent rural household coverage and entered a new phase focusing on sustainability and service delivery, with the first District Collectors Peyjal Samvad organized to strengthen district governance.

## Jan Samarth Portal

The **Jan Samarth Portal** is a centralized digital platform launched by the Government of India to facilitate seamless access to various government schemes, especially financial products. It integrates multiple schemes under one roof, enabling applicants to apply online, track status, and receive approvals digitally. The portal supports collateral-free loans and simplifies documentation processes. It uses data analytics for decision-making and enhances transparency. The platform is linked with other national portals, such as the PM Surya Ghar Muft Bijli Yojana portal, to streamline credit delivery and monitoring. It is managed by the Department of Financial Services and aims to boost financial inclusion.

### WHY IN NEWS?

The Jan Samarth Portal is key in processing over 5.79 lakh loans worth ₹10,907 crore for rooftop solar installations under the PM Surya Ghar Muft Bijli Yojana as of September 2025.



## Kailash-Mansarovar Yatra

The Kailash-Mansarovar Yatra is an annual pilgrimage to Mount Kailash and Lake Mansarovar in Tibet, sacred to Hindus, Buddhists, Jains, and Bon followers. It covers roughly 300 km on foot or by vehicle, often taking 20-30 days. The route crosses the high-altitude Tibetan plateau, with pilgrims facing harsh weather and altitude sickness risks. The Government of India facilitates the yatra through the Ministry of External Affairs, issuing special permits. The pilgrimage was suspended during the COVID-19 pandemic and resumed in 2025 after a five-year hiatus. It symbolizes spiritual purification and is linked to Lord Shiva in Hinduism.

### WHY IN NEWS?

The yatra resumed in 2025 after a five-year break, coinciding with improving India-China relations and easing of cross-border travel restrictions.

## Kapas Kisan App

The Kapas Kisan App is a mobile application developed by the Cotton Corporation of India under the Ministry of Textiles. It facilitates cotton farmers' registration, slot booking for cotton sale, real-time quality assessment updates, payment processing, and quantity acceptance under MSP procurement. The app supports multiple languages and reduces paperwork, waiting times, and distress sales by ensuring transparent and timely payments. It integrates digital technology into cotton procurement to enhance efficiency and farmer convenience.

### WHY IN NEWS?

Kapas Kisan App is brought into light as part of digital reforms improving MSP procurement transparency and efficiency for cotton farmers in 2025.

## Kolam Tribe

The **Kolam** are a **Particularly Vulnerable Tribal Group (PVTG)** primarily found in Telangana and Maharashtra. Traditionally, they rely on forest resources for sustenance, including bamboo for tools and crafts. The tribe faces challenges due to restricted access to natural bamboo, impacting their livelihood. They have a distinct language belonging to the Dravidian family and maintain unique customs related to nature worship. The Kolam practice shifting cultivation and are known for their intricate bamboo craft skills, which are at risk due to environmental degradation and resource scarcity.

### WHY IN NEWS?

The Kolam tribe is central to a new bamboo plantation project in Adilabad district aimed at restoring their traditional livelihoods and combating environmental degradation.

## Ministry of Cooperation

The **Ministry of Cooperation** was established in India in 2021 to streamline the cooperative movement and promote cooperative societies across states. It coordinates with state governments to develop multi-state cooperative societies and supports sectors like dairy, agriculture, and rural development. The ministry aims to empower farmers by facilitating low-interest loans, seed and fertilizer supply, insurance, and welfare schemes



through cooperatives. It operates under the mantra Sahkar Se Samridhhi (Prosperity through Cooperation) and has played a key role in registering over 33,000 cooperatives in the past year alone.

#### WHY IN NEWS?

The Ministry of Cooperation was mentioned by Amit Shah and Haryana CM Nayab Singh Saini as a catalyst for the growth of dairy cooperatives and rural economy revitalization.

### **Mission for Integrated Development of Horticulture (MIDH)**

The Mission for Integrated Development of Horticulture (MIDH) is a centrally sponsored scheme launched by the Government of India to promote holistic growth of the horticulture sector. It aims to increase horticultural production, improve post-harvest management, and enhance marketing infrastructure. MIDH supports activities like planting material production, protected cultivation, organic farming, and technology dissemination. It also provides financial assistance for infrastructure development such as cold storage and pack houses. The scheme benefits small and marginal farmers, horticulturists, and entrepreneurs by improving productivity and profitability. MIDH plays a key role in diversifying agriculture and boosting farmers' incomes through horticulture.

#### WHY IN NEWS?

MIDH funds were announced to support farmers affected in Punjab's horticulture sector during the recent visit of the Union Minister for Agriculture.

### **Namo Drone Didis**

Namo Drone Didis are rural women trained to operate drones for agricultural purposes, such as spraying fertilizers and pesticides. This initiative integrates modern drone technology with women's empowerment, creating new income sources and improving farm efficiency. The program supports precision agriculture by reducing chemical use and labor costs. It also encourages technology adoption in remote villages where traditional methods prevail. The term Nammo links to Prime Minister Narendra Modi's popular nickname, symbolizing government-backed rural innovation. These drone operators contribute to sustainable farming and digital literacy among women in agriculture.

#### WHY IN NEWS?

PM Modi brought into light the rise of Nammo Drone Didis during the October 2025 Krishi programme as part of efforts to promote agricultural innovation and women's economic participation.

### **National Curriculum Framework**

The National Curriculum Framework (NCF) is a guideline for curriculum development in Indian schools, developed by the National Council of Educational Research and Training (NCERT). The latest NCF aligns with NEP 2020 and emphasizes competency-based learning, integration of vocational education, and reduction of rote memorization. It encourages art-based and toy-based learning methods and supports multilingualism. States can adapt the NCF to create their own State Curriculum Frameworks, provided they align with NEP principles. The NCF also guides assessment reforms focusing on student competencies



rather than marks.

#### WHY IN NEWS?

PM-SHRI schools are required to follow either the National Curriculum Framework or a State Curriculum Framework developed based on NEP 2020, making NCF central to the scheme's educational reforms.

### **National Rural Livelihood Mission (NRLM)**

The **National Rural Livelihood Mission (NRLM)** is an Government of India initiative launched in 2011 to reduce rural poverty by promoting self-employment and organization of rural poor into Self-Help Groups (SHGs). It has mobilized over 100 million rural households into **9.09 million SHGs**, making it one of the largest women's collectives globally. NRLM focuses on enhancing livelihoods through skill development, credit access, and market linkages. It integrates with other government schemes and private sector initiatives to create sustainable rural enterprises. The mission targets women as primary beneficiaries to promote social equity and economic development.

#### WHY IN NEWS?

NRLM is brought into light for its role in empowering rural women entrepreneurs and integrating distributed renewable energy solutions to boost productivity and sustainability in women-led enterprises.

### **Paramparagat Krishi Vikas Yojana (PKVY)**

Launched in 2015, PKVY is a flagship Government of India scheme promoting organic farming through cluster-based approaches. It mobilizes farmers into groups managing 20 hectares each to adopt organic methods collectively. The scheme provides ₹31,500 per hectare over three years, covering organic inputs, marketing, certification, and training. PKVY integrates third-party certification (NPOP) and Participatory Guarantee System (PGS-India) to ensure credibility. It supports over 25 lakh farmers and 52,000 clusters, covering 15 lakh hectares. PKVY also introduced Large Area Certification (LAC) to fast-track organic certification in chemical-free regions, including tribal belts and islands.

#### WHY IN NEWS?

PKVY has completed a decade, marking expansion in organic farming, with key milestones like 15 lakh hectares under cultivation and enhanced market linkages through digital platforms like Jaivik Kheti portal.

### **Participatory Guarantee System (PGS-India)**

PGS-India is a community-based organic certification system managed by the Ministry of Agriculture & Farmers Welfare. It involves farmer collectives in peer inspections and mutual verification, ensuring transparency and trust in organic claims. Primarily targeting small and marginal farmers, PGS-India offers an affordable alternative to third-party certification, focusing on the domestic market. This system democratizes certification, reduces costs, and strengthens local organic markets. It complements the National Programme for Organic Production (NPOP), enabling greater inclusivity in India's organic sector.



## WHY IN NEWS?

PGS-India remains key to expanding organic certification access for millions of smallholder farmers under PKVY, facilitating organic market growth and consumer confidence.

**Producer Organisations**

Producer Organisations (POs) are farmer collectives that aggregate agricultural produce to enhance bargaining power and market access. In India's cotton sector, POs enable smallholder farmers to negotiate directly with ginners, textile units, and brands, bypassing intermediaries. This leads to better prices, improved product quality, and increased income stability. POs also facilitate access to training, technology, and financial services. Despite their benefits, POs currently represent only a fraction of India's cotton farmers. Expanding POs is critical for scaling sustainable cotton production and ensuring equitable value distribution among farmers, especially in rural areas where cotton cultivation sustains millions of livelihoods.

## WHY IN NEWS?

The article discusses the emerging role of Producer Organisations in empowering Indian cotton farmers through better market integration and collective action for sustainability.

**RAMP Program**

RAMP (Raising and Accelerating MSME Performance) is a central government initiative launched by the Ministry of Micro, Small and Medium Enterprises (MSME) to enhance the competitiveness of MSMEs. The program focuses on technology upgradation, skill development, market access, and innovation promotion. It is implemented in partnership with state governments, providing financial assistance and capacity-building support. RAMP aims to create sustainable employment and improve MSME productivity. The program includes a state share of funding, typically around 30%, with the rest provided by the central government. It supports clusters and individual enterprises across various sectors.

## WHY IN NEWS?

Madhya Pradesh Cabinet approved the implementation of the RAMP program with a total budget of Rs 105.36 crore, including a Rs 31.60 crore state share, to boost MSME performance in the state.

**Safai Mitra**

The term **Safai Mitra** translates to "friend of cleanliness" and refers to citizens actively participating in the Swachh Bharat Mission by engaging in cleanliness activities. Safai Mitras include school children, homemakers, shopkeepers, farm and factory workers, representing a grassroots approach to sanitation. The concept emphasizes personal responsibility for hygiene and community cleanliness beyond government efforts. Safai Mitras often organize local clean-up drives, promote waste segregation, and encourage sustainable practices. This citizen-driven participation is critical for sustaining open-defecation-free status and advancing waste management in urban and rural areas across



India.

#### WHY IN NEWS?

Safai Mitras are central to the ongoing Swachhata Hi Seva 2025 campaign, where citizens dedicate time daily to cleanliness, reinforcing the mission's shift from government-led programs to a people's movement.

#### **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989**

The Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989, is a landmark Indian law aimed at preventing atrocities and hate crimes against SCs and STs. It defines specific offenses such as forced labor, social exclusion, and violence targeting these groups. The Act provides for special courts and stringent punishments. However, enforcement has been inconsistent, with many cases pending in courts and low conviction rates. Amendments in 2015 sought to strengthen protections, but dilution of provisions has faced protests. The Act remains a critical legal tool to combat caste-based violence and uphold constitutional safeguards for marginalized communities.

#### WHY IN NEWS?

The Act is in focus due to recent Supreme Court rulings diluting its provisions and subsequent protests by Dalit and Adivasi groups demanding stronger enforcement and protection.

#### **Second World Summit for Social Development**

The **Second World Summit for Social Development** took place in **Doha from November 4-6, 2025**. It marks the 30th anniversary of the 1995 Copenhagen Summit on Social Development. The summit focuses on advancing social justice, reducing inequality, and promoting inclusive growth worldwide. It brings together governments, international organizations, and civil society. Key themes include human rights, equal opportunities, fair distribution, and just transitions amid environmental and digital changes. The summit aims to renew global commitments to social justice and strengthen cooperation on social policies. It marks challenges such as persistent poverty, informality, and declining trust in institutions.

#### WHY IN NEWS?

The summit is held in 2025 to review progress since 1995 and set new goals for social justice and development globally.

#### **Self-Help Groups (SHGs)**

Self-Help Groups (SHGs) are informal associations of 10-20 members, primarily women, who pool savings and provide mutual financial support. Originating in India during the 1980s, SHGs promote microfinance, credit access, and social empowerment in rural areas. They often receive government and NGO support for capacity building and livelihood development. SHGs play a critical role in rural development by enhancing women's participation in economic activities, improving household incomes, and encouraging community solidarity. Many SHGs engage in activities like agriculture, handicrafts, and small-scale enterprises. They also facilitate the implementation of government welfare



schemes and financial inclusion initiatives.

WHY IN NEWS?

Women Self-Help Groups were present during the ICAR-IIMR event, reflecting their involvement in agricultural and rural development programs in Punjab.

### **Seven Chakras of AI**

The **Seven Chakras** represent seven focus areas for AI development and communication at the India-AI Impact Summit – skilling, inclusion, safety, sustainability, scientific innovation, access, and social good. These chakras symbolize a holistic approach rooted in Indian cultural concepts, aiming to balance technological progress with ethical and social responsibilities. Each chakra addresses critical aspects of AI's impact, from ensuring equitable access and safety to promoting innovation and environmental sustainability. The framework encourages integrating AI into society in a way that supports broad-based development and aligns with India's diverse socio-economic realities.

WHY IN NEWS?

The Seven Chakras framework is central to the India-AI Impact Summit's agenda, guiding thematic discussions and policy focus for AI's future in India and beyond.

### **Sex Ratio at Birth**

The **sex ratio at birth** is defined as the number of females born per 1,000 males. In India, this ratio varies by state due to socio-cultural factors and access to healthcare. States like Jharkhand (899) and Bihar (900) report some of the lowest ratios, indicating fewer female births compared to males. Conversely, Arunachal Pradesh (1,085) and Nagaland (1,007) have ratios exceeding 1,000, meaning more females are born than males. The sex ratio at birth is a critical demographic indicator used to monitor gender biases, prenatal sex selection, and the effectiveness of gender equity policies.

WHY IN NEWS?

The 2023 report brought into light Jharkhand and Bihar as states with the lowest sex ratio at birth, while Arunachal Pradesh and Nagaland had the highest, reflecting ongoing regional demographic disparities.

### **Siddi Community**

The **Siddi community** in India descends from East African Bantu peoples brought as slaves, soldiers, or merchants between the 12th and 19th centuries. They primarily inhabit Gujarat, Karnataka, and Maharashtra. The community is recognized as a **Particularly Vulnerable Tribal Group (PVTG)** by the Government of India. Their language and cultural practices retain African influences, including traditional music and dance forms like **Goma**. Despite historical marginalization, the Siddis have integrated into Indian society while maintaining unique customs. Their literacy rate recently surpassed **72%**, reflecting improved access to education and welfare schemes.

WHY IN NEWS?

President Droupadi Murmu met the Siddi community in Gujarat's Junagadh district to encourage education and tribal welfare during her October 2025 visit.



## Tele MANAS Helpline

Tele MANAS is a 24×7 national mental health helpline in India, launched to provide tele-counseling and crisis support. It operates through 53 centers across the country and has facilitated over **20,05,000 tele-counseling sessions**. The service aims to improve mental health access in underserved and rural areas by offering immediate psychological support and referrals. Tele MANAS is part of India's digital mental health initiatives to bridge workforce shortages and stigma-related barriers. Despite its reach, deeper penetration and integration with local health systems remain necessary for maximizing its impact.

### WHY IN NEWS?

Tele MANAS is brought into light for its role in expanding mental health support during ongoing efforts to address India's large treatment gap and improve mental health service accessibility.

## Tikhir Tribe

The **Tikhir tribe** is an indigenous Naga community primarily located in the Noklak, Shamator, and Kiphire districts of Nagaland. Recognized officially as a distinct tribe, the Tikhir have their own language, customs, and traditional governance systems. Historically, they were often grouped under the larger Yimkhiung tribe in official records until recent formal recognition. The tribe practices shifting cultivation and maintains rich oral traditions, including folk songs and festivals unique to their culture. Their population distribution across three districts complicates administrative and recruitment processes, necessitating specific representation in government schemes and employment opportunities.

### WHY IN NEWS?

The Tikhir Tribal Council has demanded inclusion of Tikhir aspirants in Nagaland Police recruitment and the establishment of a common recruitment centre to ensure fair access for candidates from Noklak, Shamator, and Kiphire districts.

## Total Fertility Rate (TFR) in Delhi

Total Fertility Rate (TFR) measures the average number of children a woman is expected to have during her lifetime. Delhi recorded a **TFR of 1.2 in 2023**, the lowest in India and well below the replacement level of 2.1. This decline reflects urbanization, higher education, and increased female workforce participation. Low TFR can intensify son preference as families attempt to have at least one male child. Fertility decline can also impact population structure, leading to an aging demographic. Policymakers monitor TFR to address social and economic implications and to design targeted family planning and gender equity programs.

### WHY IN NEWS?

Delhi's falling TFR is linked to the worsening sex ratio, as fewer children per family increase pressure for male offspring, exacerbating gender imbalance concerns.

## UDAN Scheme

The **UDAN (Ude Desh ka Aam Naagrik)** scheme is an Government of India initiative



launched in 2017 to enhance regional air connectivity by making air travel affordable and widespread. It subsidizes flights to underserved and unserved airports, promoting short-haul routes. The scheme aims to develop **70 new airports** and increase the number of operational airports from **78 to over 100**. It targets boosting tourism, business, and economic development in remote areas. UDAN uses a market-based mechanism to allocate routes and provides financial incentives to airlines to operate on these routes. The SJ-100 is expected to support this scheme's objectives.

#### WHY IN NEWS?

The SJ-100 aircraft is expected to be a game changer for short-haul connectivity under the UDAN Scheme, supporting regional aviation growth in India.

### **Udan Yatri Cafes**

**Udan Yatri Cafes** are government-initiated food and beverage outlets established at Indian airports under the UDAN scheme. They offer affordable refreshments, including tea for ₹10, coffee for ₹20, and snacks for ₹20. The cafes aim to enhance the passenger experience by providing budget-friendly options, especially benefiting middle and lower-middle-class travelers. These cafes support the broader UDAN vision of making regional air travel more accessible and passenger-centric. Their presence at airports encourages greater footfall and comfort for travelers, particularly those from smaller towns and cities, complementing other affordability initiatives in the aviation sector.

#### WHY IN NEWS?

Mentioned by the Civil Aviation Minister during the launch of the Fare Se Fursat scheme as an example of government efforts to improve passenger-centric services at airports.

### **Universal Immunization Program (UIP)**

India's Universal Immunization Program (UIP), launched in 1985, is one of the world's largest public health initiatives, providing free vaccines to children against preventable diseases. It covers vaccines for tuberculosis, polio, diphtheria, pertussis, tetanus, measles, hepatitis B, and rotavirus, among others. UIP operates through a network of over 26,000 cold chain points and 9,000 vaccine stores nationwide. It has been instrumental in reducing infant and child mortality rates. The program integrates immunization with other maternal and child health services to improve coverage and health outcomes in rural and urban areas.

#### WHY IN NEWS?

Rotavac was introduced into India's UIP in 2016, and the recent study assessed its impact under routine programmatic conditions, confirming the vaccine's real-world effectiveness.

### **Veer Naris**

Veer Naris are the widows of Indian soldiers who died in combat, especially recognized for their sacrifices in wars and military operations. In the context of the IPKF and Operation Pawan, Veer Naris represent the families left behind after the loss of 1,171 soldiers. They are often felicitated for their courage and resilience in the face of personal tragedy. The term emphasizes the social and emotional impact of military conflicts on families and



marks the role of women as custodians of the legacy of fallen soldiers in Indian society.

#### WHY IN NEWS?

Swami Vivekanand Subharti University's 2025 event included the felicitation of Veer Naris associated with the IPKF, acknowledging their sacrifices alongside the veterans of Operation Pawan.

### Water Exercises

Water exercises, or aquatic therapy, involve physical activity performed in a pool environment. The buoyancy of water reduces joint and muscle stress, making it easier for fibromyalgia patients to exercise without increased pain. Water's resistance helps strengthen muscles gently and improves cardiovascular fitness. Warm water can relax muscles and improve circulation. Studies show aquatic therapy can reduce fibromyalgia pain, fatigue, and improve sleep quality. Typical exercises include walking, stretching, and aerobic movements in water. Sessions are often supervised by trained therapists to ensure safety and effectiveness. Water exercises are recommended as part of a multidisciplinary approach to managing fibromyalgia symptoms.

#### WHY IN NEWS?

Water exercises are emphasized as an effective non-pharmacological treatment option for managing fibromyalgia symptoms and improving patient well-being.

### White Revolution 2.0

The **White Revolution 2.0** is a government initiative aimed at further expanding India's dairy sector through cooperative development and technological innovation. It involves setting up over 75,000 new dairy cooperatives and strengthening 46,000 existing ones. The program focuses on increasing milk production, improving indigenous cattle breeds, and enhancing milk processing capacity from 660 lakh litres per day to 100 million litres by 2028-29. It also promotes sustainable practices like circular use of dead cattle remains and cow dung management. The initiative builds on the original White Revolution that made India the world's largest milk producer.

#### WHY IN NEWS?

Union Home Minister Amit Shah brought into light White Revolution 2.0 while inaugurating the Sabar Dairy Plant, emphasizing cooperative growth and milk production targets for 2029.

### Women Entrepreneurship Platform (WEP)

The **Women Entrepreneurship Platform (WEP)** was incubated within NITI Aayog in 2018 and transitioned into a public-private partnership in 2022. It acts as a national aggregator to strengthen India's women entrepreneurship ecosystem by addressing six key needs – access to finance, market linkages, training and skilling, mentoring and networking, compliance and legal assistance, and business development services. WEP has over 47 partners from both public and private sectors and engages more than 90,000 women entrepreneurs. It aims to make women-led development a reality through collaborative and scalable interventions.



## WHY IN NEWS?

WEP has partnered with DP World under the 'We Rise' initiative to support women-led MSMEs in India by enhancing export readiness and facilitating global market access.

**Defence****Adamyia-class Fast Patrol Vessels**

The Adamyia-class FPVs are a series of eight indigenously designed and built vessels by Goa Shipyard Limited for the Indian Coast Guard. Each vessel is approximately 51 meters long and displaces around 320 tons. They feature over **60% indigenous content** and are powered by two 3,000 KW diesel engines enabling speeds up to 27 knots. These ships are equipped with **Controllable Pitch Propellers (CPP)** and advanced gearboxes for enhanced maneuverability. Their armament includes a 30 mm CRN 91 gun and two 12.7 mm Stabilized Remote-Controlled Guns (SRCG), integrated with fire-control systems for precision targeting.

## WHY IN NEWS?

The second vessel in this class, ICGS Akshar, was commissioned at Karaikal, Puducherry, marking a milestone in India's indigenous shipbuilding under the 'Make in India' initiative.

**Anant Shastra**

The **Anant Shastra** is an indigenously developed surface-to-air missile system by DRDO, earlier known as Quick Reaction Surface-to-Air Missile (QRSAM). It has a firing range of about 30 km and is mobile, capable of searching, tracking, and engaging targets on the move. Designed to strengthen India's air defense, it complements existing systems like MRSAM and Akash. The system underwent rigorous day and night trials and is intended for deployment along borders with Pakistan and China. Its procurement is estimated at Rs 30,000 crore, marking indigenous leap in missile defense technology.

## WHY IN NEWS?

The Indian Army issued a tender to Bharat Electronics Limited for procuring five to six regiments of the Anant Shastra missile system to enhance border air defense capabilities.

**Anti-Submarine Warfare Shallow Water Craft (ASW-SWC)**

The ASW-SWC is a specialized naval vessel designed for anti-submarine operations in shallow coastal waters. Measuring approximately **77 meters** in length and displacing around **1500 tonnes**, it is equipped with advanced sonar, weapons, and communication systems to detect and neutralize underwater threats. Powered by **three waterjet propulsion systems** driven by marine diesel engines, it offers high agility and maneuverability. Besides anti-submarine warfare, it supports **maritime surveillance, search and rescue, coastal defense, and low intensity maritime operations (LIMO)**. The platform emphasizes indigenous technology with over 80% local content, enhancing self-reliance in naval defense.

## WHY IN NEWS?

INS Androth, the second ASW-SWC, was commissioned by the Indian Navy on 06 Oct 2025, marking boost to India's coastal anti-submarine capabilities and indigenous naval shipbuilding efforts.



## Astra Mark 2

The **Astra Mark 2** is an advanced Indian air-to-air missile developed by DRDO, designed for beyond visual range (BVR) combat with a range exceeding **200 kilometres**. It improves on the Astra Mark 1, which had a range of over **100 kilometres**. The missile features an advanced guidance and navigation system and is intended for integration with Indian Sukhoi and Light Combat Aircraft fleets. DRDO collaborated with over **50 public and private organizations**, including Hindustan Aeronautics Limited, for its development. The Astra Mark 2 enhances India's strategic air combat capabilities against regional threats.

### WHY IN NEWS?

DRDO announced plans to extend Astra Mark 2's range beyond 200 km, aiming to acquire 700 units to strengthen India's air combat capabilities after the recent India-Pakistan conflict.

## Exercise Konkan

Exercise Konkan is a biennial maritime exercise conducted between the Indian Navy and the Royal Navy of the United Kingdom. It is named after the Konkan region on India's western coast, a strategically important maritime area. The exercise focuses on enhancing joint maritime and air capabilities, particularly carrier strike group operations. It involves complex maneuvers including air defense, anti-submarine warfare, and interoperability drills. The 2025 edition marked the first time the Indian Navy's INS Vikrant and the UK's HMS Prince of Wales operated together as two Blue Water Carrier navies, showcasing enhanced integration and cooperation.

### WHY IN NEWS?

Exercise Konkan 2025 was brought into light as the first joint operation involving both navies' aircraft carriers, underscoring growing maritime cooperation between India and the UK in the Indo-Pacific region.

## Exercise Ocean Sky

Exercise Ocean Sky is a multinational air combat exercise hosted by the Spanish Air Force, designed to improve interoperability, mutual learning, and air combat proficiency among participating nations. It typically involves advanced fighter jets, transport aircraft, and surveillance platforms conducting coordinated missions over maritime and land environments. The exercise enhances joint operational capabilities in air defense, maritime patrol, and tactical air operations. It encourages defense cooperation and strategic partnerships among NATO members and allied countries. The 2025 edition includes participation by the Indian Air Force, reflecting growing defense ties between India and Spain. The exercise is conducted biennially at Gando Air Base.

### WHY IN NEWS?

Exercise Ocean Sky 2025 is currently underway at Gando Air Base, Spain, with the Indian Air Force participating from October 20 to 31 to enhance combat skills and defense cooperation.



## Exercise Pacific Reach

Exercise Pacific Reach is a multinational submarine rescue exercise hosted by the Republic of Singapore Navy. It aims to enhance cooperation, interoperability, and professional exchange among participating navies in submarine rescue operations. The exercise features both shore phases, including medical symposiums and knowledge sharing, and sea phases with live rescue drills. It has grown to include over 40 nations by 2025. The 2025 edition introduced the first-ever multinational three-asset rescue drill (R3), involving coordinated deployment of multiple rescue vehicles. The exercise promotes global submarine safety and readiness for complex underwater emergencies.

### WHY IN NEWS?

Exercise Pacific Reach 2025 saw record participation and the first multinational three-asset rescue drill, denoting advancements in international submarine rescue collaboration.

## Fast Patrol Vessels (FPVs)

Fast Patrol Vessels (FPVs) are small, high-speed naval ships designed for coastal surveillance, maritime law enforcement, and search and rescue operations. Typically measuring between 40 to 60 meters, FPVs are equipped for multi-mission roles including fisheries protection, anti-smuggling, anti-piracy, and patrolling Exclusive Economic Zones (EEZ). They combine speed, agility, and endurance to operate effectively near shorelines and island territories. The Indian Coast Guard's FPVs, like ICG Ship Ajit and ICGS Aparajit, are indigenously built and feature modern propulsion and navigation systems. FPVs play a critical role in maintaining maritime security and sovereignty.

### WHY IN NEWS?

The Indian Coast Guard inducted two new indigenously built FPVs, enhancing its coastal surveillance and response capabilities, particularly around island territories and the EEZ.

## Himveers

The term Himveers translates to "Himalayan Warriors" and refers specifically to the personnel of the ITBP. These soldiers are trained to operate in some of the world's most challenging and inhospitable high-altitude terrains, including areas above **18,000 feet**. The Himveers are distinguished by their endurance and expertise in mountain warfare, acclimatization, and survival in merciless weather conditions. Their duties extend beyond border guarding to include disaster relief and internal security, showcasing versatility. The term embodies their commitment and valor in protecting India's mountainous frontiers.

### WHY IN NEWS?

The Raising Day celebrations of the ITBP honor the "Himveers" for their dedication and sacrifice along the India-China border and other high-altitude regions.

## Hindon Air Base

**Hindon Air Base**, located near Ghaziabad in Uttar Pradesh, is one of the largest and most strategically important airbases of the Indian Air Force. Established during World War II, it has evolved into a key hub for transport and fighter operations. The base hosts the IAF's premier transport squadrons and is equipped with advanced maintenance and training



facilities. Hindon played a critical role during the 2016 surgical strikes and has been upgraded to support rapid deployment and logistics. It regularly hosts major air shows and ceremonial events, reflecting its operational significance within India's defense infrastructure.

#### WHY IN NEWS?

Hindon Air Base is the venue for the 2025 Air Force Day parade, emphasizing its importance in IAF operations and celebrations.

#### INS Baaz

INS Baaz is a naval air station located on Great Nicobar Island. It supports maritime surveillance operations in the eastern Indian Ocean region. The base enhances India's maritime domain awareness and contributes to the country's deterrence posture. INS Baaz operates independently of commercial port facilities and is primarily a military installation. It plays a role in monitoring sea lanes and securing India's strategic interests in a region where naval presence is crucial. The naval base predates the proposed commercial port and is not dependent on it for operational effectiveness.

#### WHY IN NEWS?

INS Baaz is mentioned as the existing military facility on Great Nicobar, relevant to debates on the strategic necessity of the new commercial port project at Galathea Bay.

#### INS Gomati (F-21)

The **INS Gomati** is an indigenous Godavari-class missile frigate of the Indian Navy, commissioned in 1988 and decommissioned after 34 years of service. It participated in key operations like **Operation Cactus** (Maldives intervention, 1988) and **Operation Parakram** (2001-2002 military standoff). The ship was equipped with surface-to-air and surface-to-surface missiles, anti-submarine warfare weapons, and advanced radar systems. It was the second ship of the Godavari class, named after the Gomati River. The vessel's preservation as a museum piece marks one of the few Indian naval ships converted into a public heritage exhibit.

#### WHY IN NEWS?

INS Gomati (F-21) will be preserved and displayed at the new Navy Shaurya Museum in Lucknow as part of the museum's effort to showcase Indian naval history and valor.

#### INS Kavaratti

The **INS Kavaratti** is an Anti-Submarine Warfare Corvette of the Indian Navy's **Kamorta-class**. Commissioned in 2020, it is part of the Eastern Fleet under the Eastern Naval Command. It features advanced stealth design, indigenous sensors, and weapons systems, including torpedoes and anti-submarine rockets. The ship is equipped with an integrated platform management system for efficient operation. It is named after the Kavaratti Island in Lakshadweep. The vessel plays a critical role in submarine hunting and coastal defense, enhancing India's maritime security in the strategically important eastern seaboard.

#### WHY IN NEWS?

INS Kavaratti is participating in the Indo-Indonesian Joint Bilateral Maritime Exercise



'Samudra Shakti – 2025' hosted at Visakhapatnam, emphasizing anti-submarine warfare capabilities.

### INS Sahyadri

INS Sahyadri is the **third ship** of the Shivalik Class Guided Missile Stealth Frigates, **indigenously designed and constructed in India**. Commissioned in **2012**, it incorporates stealth features to reduce radar cross-section. The ship is equipped with advanced sensors, missile systems, and anti-submarine warfare capabilities. It is based at **Visakhapatnam** under the Eastern Naval Command and has participated in multiple bilateral and multilateral exercises, enhancing India's maritime operational reach. INS Sahyadri represents the 'Aatmanirbhar Bharat' initiative, emphasizing self-reliance in defense manufacturing. Its deployments include the South China Sea and Indo-Pacific regions, projecting India's naval presence.

#### WHY IN NEWS?

INS Sahyadri made a port call at Busan Naval Harbour, South Korea, to participate in the maiden Indian Navy – Republic of Korea Navy Bilateral Exercise in October 2025.

### INS Sutlej

INS Sutlej is a **specialised hydrographic survey vessel** of the Indian Navy, commissioned in 2010. It is equipped with advanced sonar systems, multi-beam echo sounders, and oceanographic sensors for detailed seabed mapping. The ship supports maritime navigation safety, underwater topography studies, and resource exploration. It has a displacement of around 1,800 tons and a length of approximately 70 meters. INS Sutlej also plays a role in training naval personnel and international cooperation missions. It is one of the few Indian Navy ships dedicated solely to hydrographic surveying, contributing to India's maritime domain awareness.

#### WHY IN NEWS?

INS Sutlej arrived at Port Louis on 29 September 2025 to conduct the 18th Joint Hydrographic Survey with Mauritius, under a bilateral MoU to enhance maritime safety and scientific collaboration.

### INS Vikrant

INS Vikrant is India's first indigenously built aircraft carrier, commissioned in 2022. It displaces around 45,000 tons and is equipped with a STOBAR (Short Take-Off But Arrested Recovery) system for launching fighter jets. The carrier supports MiG-29K fighter jets and various helicopters, enhancing India's naval power projection. Constructed at Cochin Shipyard, it symbolizes India's push for self-reliance in defense manufacturing ("Aatmanirbhar Bharat"). INS Vikrant has a complement of approximately 1,500 personnel and serves as a platform for power projection in the Indian Ocean Region. It also participates in humanitarian and disaster relief operations.

#### WHY IN NEWS?

PM Modi addressed Navy personnel aboard INS Vikrant during Diwali 2025, praising its symbolic and operational significance after Operation Sindoor.



## Khonsa Battalion

The Khonsa Battalion is a unit of the **Assam Rifles**, a paramilitary force under the Indian Ministry of Home Affairs, operating primarily in the Northeast. Named after Khonsa town in Arunachal Pradesh, the battalion specializes in counter-insurgency, border security, and community engagement. It plays an important role in maintaining peace in insurgency-affected districts like Tirap. Besides security operations, the Khonsa Battalion actively participates in civic actions, including education drives, medical camps, and skill development programs, strengthening civil-military relations. The unit's efforts contribute to regional stability and socio-economic development in remote tribal areas.

### WHY IN NEWS?

The Khonsa Battalion is in the news for initiating a skill-based empowerment program for women of the Olo tribe under Operation Sadbhavana to encourage inclusive growth and peace in Arunachal Pradesh.

## Malabar Exercise

The **Malabar Exercise** is a naval exercise initially started in 1992 between India and the United States. Japan joined in 2015, and Australia became a permanent participant in 2020, making it a key multilateral maritime drill involving QUAD members. The exercise enhances interoperability among navies, focusing on anti-submarine warfare, maritime security, and humanitarian assistance. It is conducted annually in the Indian Ocean and Western Pacific regions. The 2007 Malabar Exercise marked the first time QUAD countries participated jointly, symbolizing the initial strategic alignment against Chinese maritime expansion.

### WHY IN NEWS?

The Malabar Exercise is a core military component of QUAD, and its significance grows amid rising Indo-Pacific tensions, particularly as the QUAD coalition faces internal diplomatic challenges in 2025.

## Military Combat Parachute System (MCPS)

The **Military Combat Parachute System (MCPS)** is an indigenous parachute system developed by DRDO for the Indian Armed Forces. It supports combat freefall jumps from altitudes up to **32,000 feet**, the highest operational altitude for parachutes in India. MCPS features include a **lower rate of descent**, enhanced steering capabilities, and compatibility with Navigation with Indian Constellation (NavIC), ensuring resistance to external interference. Developed by Aerial Delivery Research and Development Establishment (Agra) and Defence Bioengineering and Electromedical Laboratory (Bengaluru), it reduces maintenance turnaround time and limits foreign dependency for operational readiness and repair.

### WHY IN NEWS?

MCPS recently completed a successful combat freefall jump from 32,000 feet by Indian Air Force test jumpers, marking a milestone in indigenous defence technology and operational capability.



## Missile Supply Deal

The £350 million missile supply deal between India and the U.K. involves the procurement of advanced missile systems to enhance India's defence capabilities. The deal includes technology transfer and joint development components, aimed at encouraging long-term defence cooperation. It is part of India's broader strategy to modernize its armed forces amid regional security challenges. The agreement supports India's Make in India initiative by incorporating local manufacturing. This deal marks step in U.K.-India defence relations, reflecting mutual strategic interests and increased collaboration in defence technology and exports.

### WHY IN NEWS?

The missile supply deal was finalized during Keir Starmer's visit, signaling strengthened defence ties amid India's need to fund defence acquisitions.

## Operation MEGHDOOT

Operation MEGHDOOT was launched in April 1984 by the Indian Army to capture the Siachen Glacier in the disputed Kashmir region. It is the highest altitude military operation in the world, taking place at altitudes above 20,000 feet. Subedar Major & Honorary Captain Kunwar Singh, a Vir Chakra awardee, participated in this operation. The operation established Indian control over the glacier, which remains strategically vital. The harsh terrain and extreme weather conditions posed severe challenges, making logistics and survival difficult for troops. It marked strategic advantage in the Kashmir conflict.

### WHY IN NEWS?

Subedar Major & Honorary Captain Kunwar Singh, a veteran of Operation MEGHDOOT, was honored during the Infantry Day wreath laying ceremony.

## Operation Pawan

Operation Pawan was the codename for the military action initiated by the IPKF on October 10-11, 1987 against the LTTE in Sri Lanka. It began with a heliborne assault by **10 PARA COMMANDO and 13 SIKH LI** units aimed at capturing LTTE headquarters at Jaffna University. The operation met fierce resistance, resulting in approximately **50 Indian soldiers killed** in the initial assault. It lasted for 32 months, involving multiple infantry and mountain divisions, and became India's largest overseas joint military campaign. The operation's tactical challenges and high casualties marked it as chapter in India's military history.

### WHY IN NEWS?

The 38th anniversary of Operation Pawan's commencement was commemorated in 2025, with veterans and families recalling the heavy losses and valor during the campaign against the LTTE.

## Project Himank

Project Himank is an initiative by the Border Roads Organisation (BRO) focused on constructing roads and infrastructure in the challenging terrain of Ladakh. It is responsible for building some of the world's highest motorable roads, including the



Umling La and Mig La passes. The project faces extreme weather, low oxygen, and difficult terrain, requiring specialized engineering and logistics. It supports both military and civilian needs by improving access to remote border areas. Project Himank also emphasizes environmental sustainability and local community support during construction activities in ecologically sensitive zones.

#### WHY IN NEWS?

Project Himank was brought into light for successfully completing the world's highest motorable road at Mig La Pass, furthering strategic and civilian infrastructure in Ladakh.

### Rampur and Mudhol Hounds

Rampur Hounds and Mudhol Hounds are indigenous Indian breeds used by the Border Security Force (BSF) for security operations. Rampur Hounds originated in northern India and are known for endurance and speed, while Mudhol Hounds come from Karnataka, prized for agility and tracking ability. Recently, these breeds participated in the Rashtriya Ekta Diwas parade, showcasing their role as force multipliers. The Mudhol Hound named "Riya" led the squad after winning first place in the All India Police Dog Competition. Their inclusion marks India's native canine heritage and contribution to national security.

#### WHY IN NEWS?

They featured prominently in the 2025 Rashtriya Ekta Diwas parade at Ekta Nagar, symbolizing indigenous strength and unity in diversity during Sardar Patel's 150th birth anniversary celebrations.

### Trinetra Operation

Trinetra is a military operation focusing on **full-cycle electromagnetic spectrum warfare** and counter-unmanned aerial system (UAS) kill-chains. It involves detecting, tracking, and neutralizing hostile drones using integrated electronic warfare, radar, and missile systems. The operation is conducted by the Indian Army's 21 Sudarshan Chakra strike corps, specializing in desert warfare. Trinetra enhances battlefield situational awareness and force protection by disrupting enemy UAV reconnaissance and attack capabilities. It represents a modern approach to multi-domain warfare, combining cyber, electronic, and kinetic methods to counter emerging aerial threats.

#### WHY IN NEWS?

Trinetra drills are part of the ongoing Trishul 2025 exercise, emphasizing advanced defensive and offensive operations in the desert sector.

### Zorawar Light Tank

The Zorawar light tank is an indigenous armored vehicle being developed for the Indian Army, designed for high-altitude warfare. It is named after the 19th-century Dogra general Zorawar Singh. The tank is lighter and more maneuverable than traditional main battle tanks, optimized for mountainous terrain such as the Himalayas. It features modern weaponry, advanced communication, and surveillance systems suitable for rapid deployment. The tank aims to enhance operational capabilities in difficult terrains where heavier tanks face mobility issues. The project aligns with India's push for indigenization



of defense equipment.

#### WHY IN NEWS?

Army Chief General Upendra Dwivedi emphasized the induction of the Zorawar light tank alongside other indigenous air defense platforms to boost India's self-reliance in defense.

### **Awards, Honours, Personalities, Books, Sports etc.**

#### **Centenary Commonwealth Games**

The **Centenary Commonwealth Games** marks the 100th anniversary of the Commonwealth Games, first held in 1930 as the British Empire Games. The 2030 edition will be the 24th occurrence of the event, celebrating a century of sporting competition among Commonwealth nations. The Games encourage unity and cultural exchange among 72 member countries. The 2030 Games are as they coincide with the centenary milestone and will be hosted in Ahmedabad, for the first time. The event includes a wide range of sports, emphasizing inclusivity and sustainability aligned with modern Commonwealth Sport values.

#### WHY IN NEWS?

Ahmedabad has been recommended as the host city for the 2030 Centenary Commonwealth Games, marking a potential return of the event to India after 20 years.

#### **Vir Chakra**

The Vir Chakra is India's third-highest wartime gallantry award, established on 26 January 1950. It is awarded for acts of bravery on the battlefield, recognizing exceptional courage and valor in the presence of the enemy. Recipients include members from the Army, Navy, and Air Force. The medal is a circular bronze decoration featuring the Indian national emblem and the inscription "Vir Chakra" in Hindi and English. It ranks below the Param Vir Chakra and Maha Vir Chakra. The award can be given posthumously and is accompanied by a monetary stipend in some states.

#### WHY IN NEWS?

The Vir Chakra was awarded to multiple defense personnel, including Colonel Koshank Lamba and Group Captain Ranjeet Singh Sidhu, as announced in the recent gallantry awards gazette notification.