

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



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## Polity & Governance

### 74th Constitutional Amendment

The **74th Amendment to the Constitution of India**, enacted in 1992, aimed to empower urban local bodies (ULBs) by granting constitutional recognition and autonomy to municipalities. It mandated the establishment of elected municipal governments and devolved powers related to urban planning, water supply, sanitation, and social welfare. The amendment introduced provisions for reservation of seats for Scheduled Castes, Scheduled Tribes, and women. It also created State Finance Commissions to recommend financial devolution to ULBs. Despite its objectives, many states have implemented it unevenly, limiting the amendment's intended impact on urban governance and local self-government.

#### WHY IN NEWS?

The Union Budget 2025 referenced the 74th Amendment while announcing the Urban Challenge Fund, denoting the ongoing challenges in fulfilling its vision of autonomous urban governance.

### 97th Constitutional Amendment

The **97th Constitutional Amendment**, enacted in 2011, amended the Constitution of India to regulate cooperative societies. It introduced Part IXB, granting the state authority to make laws for cooperative societies, emphasizing democratic management and accountability. The amendment mandates the registration of cooperatives under state laws, protects their autonomy, and promotes cooperative principles. It also aims to improve governance by ensuring transparency and member participation. The amendment was a response to the growing economic importance of cooperatives and the need for uniform regulation across states, impacting cooperative banks, agricultural cooperatives, and other member-based organizations.

#### WHY IN NEWS?

The 2025 amendment aligns cooperative banks' director tenures with the 97th Amendment, increasing maximum tenure from 8 to 10 years.

### Andhra Pradesh 2047 Vision

Andhra Pradesh revealed a long-term development plan targeting the year 2047, aiming to transform into a developed state. Key focuses include boosting agriculture alongside a robust high-tech manufacturing sector. The state plans to become a quantum computing hub, rivaling Hyderabad's tech cluster in Telangana. Policies are aligned with the central government to attract investments. A move includes a Memorandum of Understanding with Google to establish an artificial intelligence data center. The vision emphasizes reforms to create a conducive business environment, infrastructure development, and innovation-led growth.

#### WHY IN NEWS?

Andhra Pradesh's chief minister announced ambitious reforms and partnerships, including with Google, to position the state as a future technology and manufacturing



leader.

### **Article 142 of the Constitution**

Article 142 of the Constitution of India empowers the Supreme Court to pass any decree or order necessary to do “complete justice” in any cause or matter pending before it. This article grants the Court extraordinary powers beyond normal judicial remedies. It can override other laws and procedural requirements for equitable outcomes. Article 142 is often invoked in cases involving public interest or where no adequate legal remedy exists. Its use is discretionary and intended to uphold justice in exceptional situations. The article has been cited in landmark judgments to enforce rights and resolve complex legal disputes.

#### WHY IN NEWS?

The Supreme Court invoked Article 142 to take suo motu cognisance and direct registration of a petition concerning alleged collusive litigation by BDA officials in Bengaluru.

### **Article 164**

Article 164 of the Constitution of India deals with the appointment and tenure of ministers in state governments. It mandates that the Chief Minister is appointed by the Governor, and other ministers are appointed on the Chief Minister’s advice. The article allows the Council of Ministers to aid and advise the Governor. Unlike some constitutional provisions, Article 164 is not listed as an entrenched provision under Article 368, meaning changes to it require only a special majority in Parliament without needing state legislature ratification. This has implications for state autonomy and federal balance.

#### WHY IN NEWS?

The proposed amendment seeks to insert a clause in Article 164 to automatically remove ministers held in custody for 30 days, enabling the Centre to potentially destabilize state governments without state consent.

### **Article 200 of Constitution of India**

Article 200 grants the Governor of a State the power to give assent, withhold assent, return a Bill (except Money Bills) with recommendations, or reserve it for the President’s consideration. This article is part of the legislative process in Indian States. Governors can delay assent indefinitely, which has led to controversies. Unlike Article 356, which allows judicial review of President’s Rule imposition, the discretionary power under Article 200 has been less scrutinized by courts. The Supreme Court recently questioned this disparity, denoting the lack of judicial oversight on Governors sitting on Bills for years.

#### WHY IN NEWS?

The Supreme Court’s Presidential Reference Bench debated judicial review of Governor’s discretion under Article 200 after a Tamil Nadu Governor delayed assent to Bills since 2020, prompting calls for deadlines.

### **Article 21 of Constitution of India**

Article 21 guarantees the right to life and personal liberty to every person, including



foreigners, under the Constitution of India. It states that no person shall be deprived of their life or personal liberty except according to a procedure established by law. The Supreme Court of India has expanded its interpretation to include rights such as privacy, livelihood, and dignity. The term “person” in Article 21 is explicitly inclusive of non-citizens, ensuring legal protection for foreigners within Indian territory. This article is a mainstay for safeguarding human rights and preventing unlawful detention or deprivation of liberty in India.

#### WHY IN NEWS?

The Punjab and Haryana High Court cited Article 21 while granting bail to a Bangladeshi woman, emphasizing that personal liberty protections extend to foreigners, including undocumented migrants.

#### **Article 239AA**

Article 239AA was inserted in the Constitution of India by the 69th Amendment in 1991 to provide special provisions for the governance of the National Capital Territory (NCT) of Delhi. It grants Delhi a legislative assembly and a Council of Ministers, similar to a state government, but with limited powers compared to full states. The Lieutenant Governor (LG) retains authority, including control over police and public order. Delhi’s unique status under Article 239AA has led to frequent jurisdictional conflicts between the elected government and the LG. This article is distinct from other state provisions due to Delhi’s status as a Union Territory with partial statehood.

#### WHY IN NEWS?

The 130th Constitutional Amendment Bill proposes changes to Article 239AA affecting ministerial removal procedures in Delhi’s government, intensifying debates about the balance of power in the NCT.

#### **Article 293(3) of the Constitution of India**

Article 293(3) limits the borrowing powers of states of India by requiring that any debt raised by states or through state-owned entities, backed by state revenues, must be counted within the overall borrowing limit approved by the Centre. This provision ensures fiscal discipline by preventing states from bypassing borrowing caps through indirect methods. Since FY22, stricter enforcement of this article has reduced off-budget borrowings and improved transparency. It plays an important role in maintaining fiscal credibility and controlling public debt at the sub-national level.

#### WHY IN NEWS?

The Centre has tightened rules under Article 293(3) since FY22, counting off-budget debt towards states’ overall borrowing limits to enforce fiscal discipline.

#### **Article 324 of the Constitution of India**

Article 324 vests the Election Commission of India (ECI) with the power to supervise, direct, and control elections to Parliament, State legislatures, and offices of President and Vice President. It provides the ECI with a reservoir of powers to ensure free and fair elections but mandates functioning within constitutional and legal limits. The Supreme Court has



emphasized that these powers are not unlimited or arbitrary. The article underpins the ECI's authority but also imposes obligations to exercise power judiciously. The issuance of ultimatums or engaging in political disputes is not considered part of the lawful exercise of Article 324 powers.

#### WHY IN NEWS?

The Chief Election Commissioner's ultimatum to Rahul Gandhi was criticized as an overreach beyond Article 324 powers, intensifying political tensions.

#### **Article 324(5) of the Constitution**

Article 324(5) of the Constitution of India governs the removal of the Chief Election Commissioner. It states removal can only occur in like manner and on the like grounds as a Judge of the Supreme Court, which means proven misbehavior or incapacity. The process requires a motion in Parliament, an inquiry committee to investigate charges, and a two-thirds majority vote in both houses. The President must order removal once these conditions are met. This high threshold protects the Election Commission from political pressures and ensures its independence in conducting free and fair elections.

#### WHY IN NEWS?

The article is cited in discussions about the potential removal of the CEC following allegations of electoral fraud and concerns over the Election Commission's impartiality.

#### **Article 368**

Article 368 of the Constitution of India governs the procedure for amending the Constitution. It requires a special majority in Parliament for most amendments, but certain 'entrenched' provisions need additional ratification by at least half of the state legislatures. These entrenched provisions include the election of the President, executive powers of the Union and states, and state representation in Parliament. This dual safeguard aims to protect the federal structure by preventing unilateral changes by the Centre. The article was discussed briefly during the Constituent Assembly debates, indicating less initial focus on federal balance in constitutional amendments.

#### WHY IN NEWS?

The 130th Amendment Bill proposes changes to Article 164, which is not entrenched under Article 368, allowing Parliament to alter state ministers' tenure without state ratification, raising federalism concerns.

#### **Articles 75, 164, 239AA**

Articles 75, 164, and 239AA of the Constitution of India govern the appointment and tenure of Ministers at the Union, State, and Delhi levels, respectively. Article 75(1) mandates that Union Ministers hold office at the President's pleasure. Article 164(1) provides the same for State Ministers under the Governor's pleasure. Article 239AA(5) extends this to Delhi's Council of Ministers. Judicial interpretation limits this "pleasure" to constitutional morality and legal propriety, preventing arbitrary dismissal. These articles are foundational to executive accountability and ministerial tenure, balancing political discretion with constitutional safeguards. They are often cited in judicial reviews of



ministerial removals.

#### WHY IN NEWS?

The 130th Constitution Amendment Bill, 2025, invokes these Articles to introduce conditions for automatic removal of Ministers detained for over 30 days, stirring debate on constitutional morality and executive powers.

### **Bangladesh Nationalist Party (BNP) Boycott 2014**

In 2014, the **Bangladesh Nationalist Party (BNP)**, Bangladesh's largest opposition party, boycotted the general elections demanding a neutral caretaker government. This boycott led to 153 out of 300 parliamentary seats being won uncontested by the ruling Awami League and its allies. The boycott resulted in political marginalization of BNP for years, despite observers believing BNP could have won if they had participated. The election was marked by low competition and legitimacy concerns. The boycott was motivated by fears of state capture and political persecution, but it ultimately weakened opposition influence and consolidated ruling party power.

#### WHY IN NEWS?

The article references the 2014 BNP boycott as a historical example warning against election boycotts, denoting consequences relevant to current calls for boycotting elections in Bihar.

### **Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023**

The Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023, is a legal framework that classifies certain offenses as cognizable and non-bailable. Under this code, violations related to online money gaming, including unauthorized transactions and advertisements, are subject to strict enforcement. The BNSS empowers law enforcement agencies to act promptly without prior court approval. This code supports the 2025 Online Gaming Act by enabling swift punitive action against offenders. It also enhances cooperation with international agencies like Interpol to tackle offshore gaming operators. The BNSS is part of India's broader effort to strengthen cyber and financial security laws.

#### WHY IN NEWS?

The BNSS, 2023, underpins enforcement provisions in the newly enacted Online Gaming Act, making offenses related to illegal online gaming cognizable and non-bailable.

### **Bluebird Movement**

The **Bluebird Movement** began in 2024 in Taiwan, named after the street where the initial protests occurred. It mobilized over 100,000 protesters against the Kuomintang (KMT) for allegedly violating constitutional procedures by pushing controversial bills without proper deliberation. The movement aimed to support the Democratic Progressive Party (DPP) in recalling KMT lawmakers accused of undermining national security and legislative norms. It utilized Taiwan's rarely invoked **Public Officials Election and Recall Act** to initiate recall petitions. The movement is notable for sparking one of the largest civic protests in Taiwan's recent history focused on legislative accountability.

#### WHY IN NEWS?

The Bluebird Movement supported the DPP in the 2025 recall vote against 24 KMT



lawmakers accused of constitutional violations and national security threats, though all survived the first recall round.

### **Booth Level Agents (BLA)**

Booth Level Agents (BLAs) are representatives of recognised political parties appointed to assist Booth-level officers during electoral roll revisions. They must be registered voters in the same electoral roll where appointed. BLAs scrutinise draft rolls, helping with corrections like deletions, inclusions, and transpositions. They face strict limits – a maximum of 10 applications daily and no more than 30 during the revision period without cross-verification by the Electoral Registration Officer. BLAs serve as a critical link between voters, parties, and the Election Commission of India (ECI), intended to ensure transparency and prevent electoral roll manipulation.

#### WHY IN NEWS?

BLAs have come under scrutiny following reported irregularities in the Mahadevapura Assembly constituency, raising questions about their influence and the effectiveness of their role in maintaining electoral roll integrity.

### **Border Road Organisation (BRO)**

The Border Road Organisation (BRO) is a government agency under the Ministry of Defence responsible for developing and maintaining road networks in India's border areas. Established in 1960, BRO plays a critical role in strategic connectivity in difficult terrains like Ladakh. It constructs roads, bridges, and tunnels to facilitate military logistics and civilian access. BRO's involvement in environmental initiatives like the Indus River cleanup marks an expansion of its role beyond infrastructure to include ecological conservation. The organisation employs specialized engineering units trained for extreme weather and altitude conditions.

#### WHY IN NEWS?

BRO is participating in the Safai Andolan Day cleanup activities in Ladakh, supporting the conservation efforts of the Indus River alongside other government and civil entities.

### **CEC and Other Election Commissioners Act, 2023**

The **CEC and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023** defines the appointment, tenure, and removal of the Chief Election Commissioner (CEC) and Election Commissioners. It mandates that appointees must have held secretary-level government positions and be persons of integrity with election management experience. The tenure is fixed at six years or until 65 years of age, whichever is earlier. The Act ensures the CEC receives services and benefits equivalent to Supreme Court justices. Removal of the CEC requires a two-thirds parliamentary majority and follows the same grounds as Supreme Court judges under Article 324(5).

#### WHY IN NEWS?

The Act is central to the current political debate as the INDIA bloc considers moving a motion to remove the Chief Election Commissioner, citing alleged failure in managing electoral fraud claims.



## Census Act 1948

The **Census Act 1948** is an Indian law that governs the conduct of the decennial census. It grants the government authority to notify census dates under Section 3 and mandates public announcement of census schedules under Section 8(1). The Act does not define the term census, providing broad powers for enumeration. It includes provisions for house-to-house enumeration and data collection, including sensitive data like citizenship and caste. Rule 5(1)(c) under the Act requires the government to notify schedules for caste data collection. The Act has been the legal foundation for India's uninterrupted census tradition since independence until the recent 2027 delay.

### WHY IN NEWS?

The government issued the notification for Census 2027 under Section 3 of the Census Act 1948, marking a break in the 150-year uninterrupted census tradition due to delays since 2019.

## Constitution (74th Amendment) Act, 1992

The **74th Amendment** to the Constitution of India formalized urban local governance by recognizing three types of municipalities – Nagar Palikas for transitional areas, municipal councils for smaller urban areas, and municipal corporations for large urban areas. It defined a metropolitan area as one with a population exceeding **10 lakh**. The Amendment mandates direct elections for municipalities, establishing them as the third tier of government after Union and state levels. It assigns responsibilities such as public health, sanitation, waste management, and urban amenities to municipalities, aiming to decentralize governance and increase accountability in urban areas.

### WHY IN NEWS?

Noida crossed the 10 lakh population threshold in 2010 but still lacks a municipal corporation, prompting calls for governance reform under the 74th Amendment framework to establish elected local government.

## Constitution (One Hundred and Thirtieth Amendment) Bill, 2025

The Bill mandates removal of any minister detained in custody for 30 consecutive days on serious criminal charges punishable with imprisonment of five years or more. It amends Article 75 of the Constitution of India, which deals with the Council of Ministers. The minister loses office on the 31st day unless the Chief Minister advises the President for removal earlier. The Bill allows reappointment of the minister after release from custody. It punishes ministers based on arrest, not conviction, raising concerns about presumption of innocence. The Bill was introduced amid controversy and opposition protests citing potential misuse against political rivals.

### WHY IN NEWS?

The Bill was introduced in Lok Sabha on August 20, 2025, sparking protests and was referred to a Joint Parliamentary Committee for detailed scrutiny.

## Cooperative Federalism

Cooperative federalism in India refers to the constitutional framework where the Union



and State governments work collaboratively to govern the country. While the Union controls defense and foreign affairs, States have autonomy over public order, agriculture, education, and health. Mechanisms like fiscal sharing, State legislatures, and the Governor's role were designed to ensure mutual strengthening rather than subordination. The concept was endorsed by B.R. Ambedkar, emphasizing sovereignty of both levels. Cooperative federalism contrasts with competitive or coercive federalism, and its erosion is seen as a threat to democracy and governance balance in India.

#### WHY IN NEWS?

The text addresses the decline of cooperative federalism due to centralization trends, including increased central agency interference and efforts to curb State autonomy in policymaking.

#### **D-Voters (Doubtful Voters)**

**D-voters** or Doubtful Voters is a classification used in Assam for residents, primarily Bengali-speaking Muslims, whose citizenship status is questioned by the Election Commission. This label results in the removal from electoral rolls and often leads to legal battles in foreigners' tribunals. Many D-voters have been declared stateless, facing forced displacement without due process. The phenomenon emerged from Assam's complex ethnic and citizenship issues, affecting thousands and creating a humanitarian crisis. It reflects the consequences of stringent documentation and verification policies on marginalized communities.

#### WHY IN NEWS?

The article draws parallels between Bihar's SIR and Assam's D-voter classification, warning of similar disenfranchisement and statelessness risks in Bihar.

#### **Directorate General of Foreign Trade (DGFT)**

The **Directorate General of Foreign Trade (DGFT)** is an agency under India's Ministry of Commerce and Industry responsible for implementing the Foreign Trade Policy. It regulates imports and exports through notifications, licensing, and trade facilitation. Established in 1991, DGFT issues guidelines to promote exports, control imports, and maintain trade balance. It administers export promotion schemes and enforces trade restrictions based on national interest, quality standards, and international agreements. DGFT also manages the issuance of Importer Exporter Codes (IEC), mandatory for foreign trade. It plays a key role in shaping India's trade policies and ensuring compliance with international trade norms.

#### WHY IN NEWS?

DGFT issued the notification banning imports of certain jute products and ropes from Bangladesh through land routes, allowing entry only via Nhava Sheva Seaport.

#### **e-Dharti Platform**

e-Dharti is a digital land records management system used by several states of India, including Rajasthan. It integrates land ownership, survey data, and revenue records, facilitating transparency and easy access to land information. e-Dharti supports GIS-based



mapping and remote sensing data integration for accurate land use and boundary demarcation. It is used by government departments for updating land records, resolving disputes, and planning developmental projects. The platform helps in maintaining updated digital cadastral maps and supports environmental and urban planning by providing precise land data.

#### WHY IN NEWS?

e-Dharti data was used in the GIS-based remapping exercise of Nahargarh Wildlife Sanctuary boundaries, contributing to the controversial re-delineation submitted in 2025.

### **Electors Photo Identification Card (EPIC)**

The Electors Photo Identification Card (EPIC) is the official voter ID issued by the Election Commission of India to registered voters. It serves as a primary document for voter identification at polling stations. Introduced in the 1990s, EPIC contains the elector's photo, name, address, and a unique identification number. It is mandatory for voting and helps prevent electoral fraud such as impersonation. EPIC is widely accepted as a valid ID for various purposes beyond voting. The Supreme Court has mandated its searchable publication alongside voter roll data to enhance transparency in electoral roll revisions.

#### WHY IN NEWS?

The Supreme Court directed the ECI to publish names of excluded voters along with their EPIC numbers in a searchable format during the Bihar electoral roll revision controversy.

### **Enforcement Directorate (ED)**

The Enforcement Directorate (ED) is a specialized financial investigation agency under India's Ministry of Finance, established in 1956. It enforces laws related to foreign exchange and economic crimes, primarily the Foreign Exchange Management Act (FEMA) and the Prevention of Money Laundering Act (PMLA). The ED investigates money laundering, foreign exchange violations, and economic offenses, often targeting high-profile financial crimes. It has powers to attach assets, arrest suspects, and conduct searches. The ED operates independently but frequently collaborates with other agencies like the CBI. Its actions are often politically sensitive due to involvement in cases against politicians and corporate figures.

#### WHY IN NEWS?

The Bill's critics cite the Enforcement Directorate's alleged selective use of custodial powers against opposition politicians as a risk factor for misuse of the proposed ministerial removal provisions.

### **Fifteenth Finance Commission (XV FC)**

The Fifteenth Finance Commission was constituted by the Government of India in 2020 to define the distribution of tax revenues between the central government and states for 2021-26. It recommends grants and devolution of funds to states and local bodies, focusing on fiscal federalism. The XV FC introduced untied and tied grants for Rural Local Bodies (RLBs), emphasizing decentralized planning. It allocates funds based on population, area, and demographic changes. Untied grants allow local bodies flexibility in



fund usage, while tied grants are earmarked for specific sectors like sanitation and water management. This commission's recommendations impact local governance financing .

#### WHY IN NEWS?

The Union Government released the XV FC Untied Grants for Rural Local Bodies in Mizoram, Odisha, and Tripura for the financial year 2025-26, supporting decentralized rural development.

### **Grid Controller of India (Grid-India)**

Grid-India is a centralized agency responsible for overseeing grid operations and market pilot studies in India. It conducts pilot projects and research to evaluate new market mechanisms, such as market coupling. The agency collects and analyzes real-time grid data, ensuring reliability and efficiency. Its shadow pilot studies simulate proposed market changes without full implementation to assess impact on welfare, volume, and prices. Grid-India's reports influence regulatory decisions but are not always publicly disclosed. The agency collaborates with power exchanges, regulators, and stakeholders to align market reforms with grid stability and policy goals.

#### WHY IN NEWS?

Grid-India conducted a shadow pilot study on market coupling, whose findings showed negligible benefits, sparking debate over CERC's plan for full-scale implementation in 2026.

### **GST Council**

The **GST Council** is a constitutional body in India formed under Article 279A of the Constitution, responsible for making recommendations on goods and services tax (GST) rates, exemptions, thresholds, and other tax-related issues. It consists of the Union Finance Minister as the chairperson and the finance ministers of all states and union territories as members. The council operates on a three-fourths majority vote, ensuring cooperative federalism. It meets periodically to decide on GST policy and reforms. The council was established in 2017 alongside the introduction of GST to harmonize indirect taxation across India and avoid tax disputes between states.

#### WHY IN NEWS?

The GST Council is in focus due to the upcoming September meeting to discuss the Prime Minister's announcement of GST 2.0 reforms, including a proposed two-rate GST structure.

### **Harivansh Narayan Singh**

Harivansh Narayan Singh is an Indian politician and journalist, serving as the Deputy Chairman of the Rajya Sabha since 2018. He belongs to the Janata Dal (United) party and has a background in Hindi journalism. Singh is known for maintaining decorum in the Upper House and overseeing legislative procedures. He often handles contentious debates, ensuring orderly conduct and upholding parliamentary rules. Singh has been involved in several key parliamentary sessions, including the 2025 debate on the Promotion and Regulation of Online Gaming Bill, where he chose not to record opposition



sloganeering to maintain order.

WHY IN NEWS?

Harivansh presided over the Rajya Sabha session that passed the 2025 online gaming bill, managing disruptions and procedural challenges during the debate.

### **Institutional Memory**

**Institutional memory** refers to the collective knowledge and learned experiences retained by an organization over time, including records, procedures, and cultural norms. It helps maintain continuity despite personnel changes. In government, loss of institutional memory leads to repeated mistakes and inefficiencies, as prior discussions and decisions are forgotten. It is preserved through documentation, archives, and standard operating procedures. Digital record-keeping and e-governance tools are increasingly used to safeguard institutional memory. The absence of it in Indian administration has caused difficulties in providing comprehensive reports for the past 11 years, affecting policy consistency and project implementation.

WHY IN NEWS?

The text marks the loss of institutional memory in Government of India departments, leading to poor accountability and inefficiency, emphasizing the need for better record preservation and process standardization.

### **Jan Bhagidari**

**Jan Bhagidari** is a participatory governance concept in India that encourages public involvement in institutional decision-making and policy formulation. It supports transparency and accountability by allowing stakeholders like teachers, students, and citizens to participate in processes such as nominations for awards. The term translates to “people’s participation” and is used in various government schemes to enhance democratic engagement. In the context of NAT, Jan Bhagidari enables self, institutional, and peer nominations, encouraging a collaborative approach to recognizing educational excellence.

WHY IN NEWS?

Jan Bhagidari was invoked in the 2024 NAT nomination process to widen participation and democratize the selection of awardees in higher education and polytechnic sectors.

### **Kalaignar University Bill**

The **Kalaignar University Bill** is legislation passed by the Tamil Nadu State legislature aimed at establishing or regulating Kalaignar University. The Bill became controversial when Governor R.N. Ravi referred it to the President of India instead of granting assent, exercising a de-facto veto. This action was challenged by the Supreme Court, which ruled against Governors having indefinite veto powers over State Bills, including those related to universities. The Bill’s referral marks ongoing tensions between State governments and Governors, especially concerning control over educational institutions. The Bill’s name honors M. Karunanidhi, a prominent Tamil Nadu political leader known as Kalaignar.

WHY IN NEWS?

Governor R.N. Ravi referred the Kalaignar University Bill to the President instead of



assenting, triggering a Supreme Court ruling limiting Governors' veto powers on university-related legislation.

### **Kautilya's Arthashastra**

Kautilya's Arthashastra is an ancient Indian treatise on statecraft, economic policy, and military strategy, written by Chanakya (also known as Kautilya) around the 4th century BCE. It covers topics like governance, taxation, trade regulations, and diplomacy. The text outlines the duties of a king, the role of spies, and principles of war and peace. Arthashastra also discusses financial management, market control, and labor ethics. It is considered one of the earliest comprehensive manuals on political economy and administration. The work has influenced modern Indian economic and political thought and remains relevant in contemporary governance studies.

#### WHY IN NEWS?

The UGC's draft curriculum for commerce education proposes teaching Kautilya's Arthashastra to provide vital information about trade regulations, governance, and financial management, linking ancient knowledge with modern business practices.

### **Kavilumpara Gram Panchayat**

**Kavilumpara Gram Panchayat** is a local self-government institution in Kozhikode district, Kerala. It has actively promoted the Kuttiyadi coconut variety by allocating ₹3 lakh for the GI tag application process. The panchayat collaborates with Kerala Agricultural University and the Central Plantation Crops Research Institute to document and authenticate the unique features of the coconut. This grassroots initiative aims to enhance farmers' income by protecting the geographical identity of the crop. The panchayat's involvement exemplifies local governance supporting agricultural biodiversity and rural development through scientific and administrative partnerships.

#### WHY IN NEWS?

Kavilumpara gram panchayat spearheads efforts to secure the GI tag for Kuttiyadi coconut, funding preliminary work and coordinating with research institutions.

### **Kosha Moolo Danda**

"Kosha moolo danda" translates to "revenue is the backbone of administration," a phrase from the Arthashastra emphasizing the critical role of taxation in statecraft. It asserts that a well-managed revenue system underpins effective governance, military strength, and public welfare. The Arthashastra advocates for a tax system that is **fair, transparent, and proportionate**, with oversight to prevent corruption. Revenues collected were reinvested in public goods like agriculture, infrastructure, education, and culture. This principle reflects an early understanding of fiscal responsibility and the link between economic resources and state stability, influencing Indian governance models for over 1,500 years.

#### WHY IN NEWS?

"Kosha moolo danda" is cited to emphasize the importance of a balanced tax system in India's ongoing fiscal reforms, including GST implementation and efforts to improve tax compliance.



## Legal Metrology Act, 2009

The **Legal Metrology Act, 2009** regulates weights and measures used in trade in India to ensure accuracy and fairness. It replaced older laws and introduced stricter standards for packaged commodities, weights, and measuring instruments. The Act mandates certification and stamping of weights and measures, with penalties for non-compliance. Under the Jan Vishwas Bill, first-time offenders using non-standard weights will receive an improvement notice instead of imprisonment or heavy fines, promoting compliance through warnings.

### WHY IN NEWS?

The Legal Metrology Act is among the 16 Acts amended by the Jan Vishwas Bill 2025, introducing warnings and rationalising penalties for minor offences.

## Mahanadi Water Disputes Tribunal

The **Mahanadi Water Disputes Tribunal** was constituted in March 2018 under the Inter-State River Water Disputes Act, 1956 to resolve the water-sharing conflict between Odisha and Chhattisgarh. It is chaired by Justice Bela M. Trivedi as of 2025, succeeding Justice AM Khanwilkar. The tribunal oversees data submissions, inspections, and hearings related to the dispute. Historically, no inter-state water dispute in India has been fully resolved solely through tribunal proceedings. The tribunal grants extensions for negotiation and encourages political dialogue between states to reach amicable settlements. The tribunal's next hearing was scheduled for September 6, 2025.

### WHY IN NEWS?

The tribunal has granted additional time to Odisha and Chhattisgarh for amicable negotiations in their decade-long Mahanadi river water-sharing dispute, reflecting progress towards a political resolution.

## National Unity Government (NUG)

The **National Unity Government (NUG)** is a parallel government formed by Myanmar's pro-democracy groups after the 2021 military coup. It comprises elected lawmakers ousted by the junta, ethnic revolutionary groups, and civil society leaders. The NUG aims to replace the military-drafted 2008 constitution with a federal democratic constitution. It operates both political and military wings and seeks international recognition as the legitimate government of Myanmar. The NUG has established diplomatic missions abroad and calls for coordinated resistance against the military regime. It also actively promotes federalism as a solution to Myanmar's ethnic conflicts.

### WHY IN NEWS?

The NUG is central to the ongoing resistance against Myanmar's military junta, with India urged to support it instead of the military regime to promote democracy and federalism.

## NITI Aayog Urban Framework

NITI Aayog piloted a new urban classification framework based on economic activity and land use in four Indian city-regions – Mumbai Metropolitan Region, Varanasi, Surat, and Visakhapatnam. This framework goes beyond traditional Census criteria by considering



functional urban areas and their economic profiles. It aims to better capture the scale of urbanization and urban creep, where rural areas gradually become urbanized. This approach supports more accurate urban planning and resource allocation. It reflects recognition that conventional definitions of urban areas underestimate the true extent of urban growth in India.

#### WHY IN NEWS?

NITI Aayog's new urban framework is being trialed to improve urban area classification ahead of the 2027 Census, addressing underestimated urbanization trends.

### **North Cachar Hills Autonomous Council (NCHAC)**

The **North Cachar Hills Autonomous Council (NCHAC)** is a self-governing administrative body in Assam, established under the Sixth Schedule of the Constitution of India. It administers the Dima Hasao district, primarily inhabited by the Dimasa tribe. The council has powers over land, forest management, and local governance, aiming to preserve tribal customs and culture. It was created in 1951 and has legislative, executive, and judicial authority on specific local matters. NCHAC plays a critical role in peace processes involving insurgent groups like the Dimasa National Liberation Army (DNLA) and Dimasa People's Supreme Council (DPSC).

#### WHY IN NEWS?

NCHAC is receiving ₹500 crore under the new Central Sector Scheme to boost infrastructure and socio-economic development in the region as part of a 2023 Memorandum of Settlement with local ethnic groups.

### **Numbeo Safety Index**

The **Numbeo Safety Index** is a crowd-sourced database measuring perceived safety in cities and countries worldwide. It evaluates factors such as crime rates, threats of mugging, robbery, car theft, physical attacks, harassment, and discrimination. The index incorporates public perceptions during both day and night, alongside concerns about property crimes like vandalism and burglary, and violent crimes including assault and homicide. Numbeo updates its rankings biannually, reflecting evolving urban safety conditions. It is widely used for comparative urban safety analysis by researchers, travelers, and policymakers but relies heavily on voluntary data submission, which can affect accuracy and representation.

#### WHY IN NEWS?

Numbeo's mid-2025 Safety Index ranked India 67th globally, denoting Mangalore as the safest Indian city and Abu Dhabi as the world's safest city for the ninth consecutive year.

### **One Nation One Election**

One Nation One Election is an initiative aimed at synchronizing the elections of the central and state legislatures in India to occur simultaneously, reducing election frequency and costs. It was first proposed by the Election Commission of India and various political leaders to minimize governance disruptions caused by staggered elections. The idea traces back to the 1950s when simultaneous elections were held but discontinued due to



premature dissolutions of some state assemblies. The proposal faces constitutional challenges, requiring amendments to Articles 83, 172, and others. It aims to improve policy continuity and reduce electoral expenditure while enhancing administrative efficiency.

#### WHY IN NEWS?

The proposal to extend electoral cycles to 25 years in India aligns with the One Nation One Election initiative to reduce election frequency and focus on long-term governance and cultural preservation.

### **One Nation, One Agriculture, One Team**

The One Nation, One Agriculture, One Team vision is a policy framework designed to unify agricultural research and extension services across India. It involves coordination among ICAR nodal officers, state governments, and agricultural bodies to create cohesive state-level action plans. The initiative seeks to streamline research dissemination, improve farmer outreach, and enhance the adoption of innovations. It supports demand-driven agricultural research, better resource management, and strengthens Krishi Vigyan Kendras and extension systems. This approach aims to increase productivity, resilience, and sustainability in Indian agriculture by aligning research priorities with farmer needs.

#### WHY IN NEWS?

This vision is driving state-level agricultural reforms and research coordination efforts in 2024-25, linking farmers more closely with scientific advancements.

### **One Nation, One Application Initiative**

The **One Nation, One Application** initiative is a government program aimed at unifying digital platforms across state of Indias for legislative and administrative processes. It promotes the development of scalable, interoperable applications like NeVA to enhance governance efficiency and transparency. The initiative encourages adoption of smart technologies such as RFID/NFC access, multilingual support, and real-time data sharing. It supports sustainable governance by reducing paper use and enabling secure digital workflows. The program aligns with India's broader digital transformation goals and e-governance policies.

#### WHY IN NEWS?

NeVA, launched by the Delhi Legislative Assembly, was developed under the One Nation, One Application initiative, denoting the government's push for unified digital governance platforms.

### **Overseas Citizen of India (OCI)**

The **Overseas Citizen of India (OCI)** scheme, launched in 2005, allows foreign nationals of Indian origin to hold a lifelong visa to India. OCI cardholders enjoy benefits such as multiple entry, multipurpose lifelong visas, exemption from registration with police for any length of stay, and parity with Non-Resident Indians (NRIs) in financial and economic matters. OCI status is not equivalent to Indian citizenship and excludes those with Pakistani or Bangladeshi citizenship or their descendants. The scheme enables easier



travel and residence but does not confer political rights like voting or holding public office.

#### WHY IN NEWS?

New rules announced by the Ministry of Home Affairs in August 2025 allow cancellation of OCI cards if holders face certain criminal charges or convictions, tightening the regulations governing OCI registrations.

### PM GatiShakti Initiative

The **PM GatiShakti** initiative, launched in 2021, is a national master plan aimed at improving multimodal connectivity and infrastructure across India. It integrates 16 ministries to coordinate infrastructure projects, reducing delays and costs. The initiative focuses on roads, railways, ports, airports, and logistics hubs to boost economic growth and streamline supply chains. It uses Geographic Information System (GIS)-based digital platforms to track project progress and facilitate decision-making. The Delhi-Agra Expressway, part of this initiative, is India's first 14-lane expressway, cutting travel time between the two cities.

#### WHY IN NEWS?

Students on the 'Aarohan - Dweep to Delhi' tour traveled via the Delhi-Agra Expressway, denoting infrastructure developed under the PM GatiShakti initiative.

### Prasar Bharati

Prasar Bharati is India's **public service broadcaster**, established in 1997 as an autonomous body under the Prasar Bharati Act. It oversees **Doordarshan (TV) and All India Radio (AIR)**, providing diverse programming in multiple languages. It operates under the Ministry of Information & Broadcasting but functions independently to ensure unbiased public broadcasting. Prasar Bharati has played a key role in representing India in international broadcasting forums like AIBD. Its CEO, Shri Gaurav Dwivedi, also serves as President of the AIBD General Conference. Prasar Bharati's mission includes promoting media literacy, cultural diversity, and public awareness.

#### WHY IN NEWS?

Shri Gaurav Dwivedi, CEO of Prasar Bharati, presided over the 23rd AIBD General Conference and acknowledged India's leadership role within AIBD in August 2025.

### Press Registrar General of India (PRGI)

The **Press Registrar General of India (PRGI)** is an official position under the Ministry of Information and Broadcasting responsible for overseeing the registration of newspapers and periodicals in India. The PRGI maintains the registry of publications under the Press and Registration of Books Act, 1867. The office ensures compliance with legal requirements, monitors publication circulation data, and supports transparency in the media sector. The PRGI also facilitates reforms like the introduction of digital portals for registration. The role involves coordination with publishers, government bodies, and other stakeholders to streamline publication processes and enforce statutory norms.

#### WHY IN NEWS?

PRGI Yogesh Baweja announced the launch of the Press Sewa portal to simplify and speed up newspaper and periodical registrations, enhancing transparency and ease of doing



business for publishers.

### **Press Sewa Portal**

The **Press Sewa Portal** was developed under the Press and Registration of Periodicals Act (PRP Act), 2023. It is a **single-window digital platform** designed to facilitate registration and compliance for periodicals in India. The portal streamlines application processing, ensuring faster approvals and improved transparency. It integrates with state and union territory systems to enable smooth publication processes. The portal supports digitization of records and aims to reduce paperwork, enhancing efficiency in media regulation. It also helps in maintaining updated databases of registered periodicals, encouraging better governance and oversight of print media across India.

#### WHY IN NEWS?

The portal was a key focus at the August 2025 Ministry of Information and Broadcasting conference, where state and UT officers were sensitized and onboarded to improve media registration and compliance processes nationwide.

### **Right to Information (RTI) Act, 2005**

The Right to Information (RTI) Act, 2005 empowers Indian citizens to request information from public authorities to promote transparency. Public Information Officers (PIOs) are designated to respond within 30 days. The Act covers all government bodies, including ministries and statutory organizations like CZA. However, some information may be unavailable if managed by state governments or protected by confidentiality clauses. The RTI application filed by Down To Earth in 2022 sought details on funds spent on musk deer conservation but was informed that such data was not maintained centrally by the Ministry of Environment, Forest and Climate Change.

#### WHY IN NEWS?

An RTI request revealed gaps in financial data transparency regarding musk deer conservation funding by the Government of India.

### **Select Committee of Lok Sabha**

The **Select Committee of the Lok Sabha** is a parliamentary committee constituted to examine specific bills in detail. It reviews draft legislation, hears stakeholders, and suggests amendments to improve clarity and effectiveness. The committee's reports often run into thousands of pages; for instance, the Select Committee on the Income Tax Bill, 2025 submitted a **4,500-page report with over 285 recommendations**. Its recommendations aim to simplify legal language, reduce litigation, and align laws with current realities. The committee is composed of members from various political parties and works confidentially before reporting to the Parliament.

#### WHY IN NEWS?

The Select Committee's recommendations were incorporated into the revised Income Tax Bill, 2025, which was reintroduced and passed in the Lok Sabha, replacing the 1961 Act.

### **Select Committee on Income Tax Bill**

The Select Committee on the Income Tax Bill 2025 was a parliamentary panel tasked with



reviewing the proposed tax law changes. It was chaired by **Baijayant Panda** and included members from multiple political parties. The committee submitted a comprehensive report in July 2025 recommending various amendments to simplify and clarify the Bill. Its recommendations led to the withdrawal of the original Bill and the introduction of a revised version in August 2025. The committee supported enhanced powers for tax officials regarding electronic data access but also included dissent notes calling for moderation in these provisions.

#### WHY IN NEWS?

The Select Committee report prompted the government to withdraw and revise the Income Tax Bill 2025 before reintroducing it in Parliament.

#### **Shiromani Gurdwara Parbandhak Committee (SGPC)**

The SGPC is a prominent Sikh organization established in 1925 responsible for managing gurdwaras (Sikh places of worship) primarily in Punjab, Haryana, Himachal Pradesh, and Chandigarh. It oversees the administration of historic Sikh shrines like the Golden Temple in Amritsar. The SGPC also plays a key role in Sikh religious education, publishing Sikh literature, and preserving Sikh heritage. It functions as a quasi-governmental body with elected representatives from the Sikh community. The committee has historically influenced Sikh religious and political matters and acts as a custodian of Sikh traditions and religious law.

#### WHY IN NEWS?

The SGPC has urged the Government of India and AI companies to curb misinformation related to Gurbani and Sikh history spread through artificial intelligence platforms, emphasizing the need for accurate representation of Sikh teachings.

#### **Single-Window Clearance for Mining**

Single-window clearance is a regulatory mechanism that consolidates multiple approvals required for mining operations into a single, streamlined process. It integrates permissions related to **forest, environmental, land, and other statutory clearances** under one authority or portal. This reduces delays, which typically span 2-3 years post mining lease award. The system aims to fast-track project execution, improve transparency, and attract investment in mineral exploration and production. Single-window clearance supports expanding mining activities by easing bureaucratic hurdles, especially for joint ventures and private sector participation in sectors like iron ore and coal mining.

#### WHY IN NEWS?

Single-window clearance is brought into light as a necessary reform to accelerate mining operations and boost domestic production following recent supply chain concerns.

#### **South West Africa People's Organization (SWAPO)**

SWAPO is the liberation movement and ruling political party of Namibia, founded in 1960 to advocate for independence from South African rule. It operated in exile during the Namibian War of Independence (1966-1989) and gained international recognition as the



legitimate representative of Namibians. SWAPO maintained a diplomatic office in New Delhi during Namibia's liberation struggle, reflecting close ties with India. After Namibia's independence in 1990, SWAPO transitioned from a liberation movement to a governing party, dominating the political landscape. Its early diplomatic efforts helped secure international support and contributed to Namibia's eventual independence.

#### WHY IN NEWS?

India's historical support for SWAPO, including hosting its first diplomatic office, was brought into light by Modi to tell the long-term solidarity and partnership between India and Namibia.

### Special Intensive Review (SIR)

The **Special Intensive Review (SIR)** is an electoral exercise conducted by the Election Commission of India aimed at verifying the accuracy of voter rolls. It involves re-examining voter lists to identify duplicates, fake entries, and outdated records. Introduced as a measure to improve electoral integrity, SIR requires citizens to submit specific documents to prove identity and citizenship. The process has been criticized for creating bureaucratic hurdles and risking disenfranchisement, especially among marginalized populations. The SIR has led to deletions from electoral rolls, with concerns about transparency and fairness in the verification and deletion procedures.

#### WHY IN NEWS?

The SIR is under scrutiny in Bihar for causing widespread confusion and potential disenfranchisement of voters due to stringent document requirements and lack of transparency in the deletion of names from voter rolls.

### Special Intensive Revision of Voters List

The **Special Intensive Revision of Voters List** is a periodic exercise conducted by the Election Commission of India to update and verify the electoral rolls. It involves adding new eligible voters, removing duplicates, and correcting entries to ensure accuracy. This revision enhances the integrity of elections and is usually carried out before major elections. The process includes door-to-door verification, public awareness campaigns, and grievance redressal mechanisms. It is a routine administrative function and is independent of the central government, managed solely by the Election Commission to maintain democratic transparency.

#### WHY IN NEWS?

The Minister of State clarified that the Special Intensive Revision of voters lists in Bihar is being conducted by the Election Commission and is a routine activity with no central government involvement.

### Standing Committee on Finance

The **Standing Committee on Finance** is a parliamentary committee responsible for examining matters related to the Ministry of Finance and allied departments. It reviews government schemes, budgets, and policies, providing recommendations to improve transparency, efficiency, and inclusivity. The Committee's report on the PM Internship



Scheme brought into light issues like gender imbalance, fund under-utilisation, and eligibility criteria problems. It recommended dynamic reassessment of funding, alignment of internships with industry needs, and better monitoring of internship-to-employment conversion rates. The Committee also suggested relaxing norms for marginalized candidates and improving stakeholder participation.

#### WHY IN NEWS?

The Committee tabled a report in Lok Sabha flagging key challenges in the PM Internship Scheme, urging swift government action and recommending reforms to ensure better outcomes and inclusivity.

### State Electricity Regulatory Commissions (SERCs)

SERCs are state-level regulatory bodies overseeing electricity generation, distribution, and tariff setting. Under the draft Energy Conservation (Compliance Enforcement) Rules, 2025, SERCs are designated as adjudicating authorities for fuel efficiency and carbon trading non-compliance cases. The specific SERC involved depends on the state where the automaker's registered head office is located. They have authority to levy penalties based on BEE's verification reports. SERCs also regulate penalties distribution, transferring 10% to the Central Energy Conservation Fund and 90% to the respective state government.

#### WHY IN NEWS?

The draft rules give SERCs the role of adjudicating penalties against automakers violating fuel efficiency and carbon credit norms.

### State Medical Councils (SMCs)

**State Medical Councils (SMCs)** are statutory bodies responsible for regulating medical practitioners within their respective states in India. They verify medical qualifications and credentials during the NMR registration process. SMCs act as the first verification layer before forwarding applications to the National Medical Commission. They maintain their own registers, which are integrated with the NMR portal for dynamic updates. SMCs also handle disciplinary actions and maintain standards of medical education and practice locally. The NMC has urged SMCs to enhance their efforts to clear pending applications and improve registration rates.

#### WHY IN NEWS?

SMCs have been urged by the NMC to expedite verification processes amid low NMR registration figures and rising protests from medical professionals.

### State of Emergency Against Gangs

El Salvador declared a **state of emergency** in 2022 to combat powerful street gangs. This emergency suspended certain constitutional rights, enabling mass arrests and detentions of tens of thousands suspected gang members. The crackdown reduced violent crime rates temporarily but raised concerns about human rights violations. The government justified these measures as necessary for public security. Evidence surfaced that the administration initially negotiated with gangs before imposing the emergency. This approach has been controversial internationally but remains popular domestically. The



state of emergency remains a central element of President Bukele's security strategy.

WHY IN NEWS?

The state of emergency underpins President Bukele's popularity and political strength, influencing constitutional reforms that extend his term and allow indefinite reelection.

### State of Exception

The **state of exception** is a concept developed by Italian philosopher Giorgio Agamben describing a situation where normal laws are suspended by the state to preserve itself, often justified by emergency or crisis. In this state, legal protections are hollowed out, and rights are applied selectively. Achille Mbembe expands this to describe permanent exceptions where populations live outside the rule of law, governed by logistics rather than justice, deciding who receives care or punishment. This creates zones where legality is suspended, enabling systemic violence and abandonment of marginalized groups.

WHY IN NEWS?

The state of exception is relevant to understanding how governments justify expanded policing, emergency laws, and selective rights enforcement, particularly in contexts of conflict and social exclusion.

### States Reorganisation Commission (SRC)

The **States Reorganisation Commission** was established in 1953 under Justice Fazl Ali to examine and recommend the reorganisation of state of India's mainly on linguistic and administrative criteria. Its 1955 report proposed redrawing state boundaries to create 14 states and 6 Union Territories, balancing language, culture, administration, and national unity. The SRC rejected the idea of states solely based on language, emphasizing other factors like economic viability and security. It suggested bilingual states and rejected some linguistic demands initially, such as dividing Punjab and Bombay State, though these divisions occurred later. The SRC's recommendations shaped India's political map and governance structure post-1956.

WHY IN NEWS?

Tamil Nadu Governor R N Ravi's remarks on linguistic states relate to the SRC's 1956 reorganisation, which remains a foundational event in India's state formation and language politics.

### Swarajya and Surajya

Swarajya is a Sanskrit term meaning self-rule or self-governance, popularized during India's independence movement to signify freedom from colonial rule. **Surajya** means good governance or well-being of the people, emphasizing effective administration post-independence. The transition from Swarajya to Surajya represents the shift from achieving political freedom to ensuring quality governance and development. This concept underlines the importance of not just independence but also responsible leadership, transparency, and citizen welfare in a democratic society. It is often cited in modern Indian political discourse to show governance goals.

WHY IN NEWS?

Gadkari emphasized transforming Lokmanya Tilak's vision of Swarajya into Surajya during



his speech at the Lokmanya Tilak National Award ceremony.

## Economy & Banking/Finance

### 7 Sutras of AI

The **7 Sutras** are foundational principles guiding AI adoption in the financial sector, formulated by the RBI committee. They are – **Trust is the Foundation, People First, Innovation over Restraint, Fairness and Equity, Accountability, Understandable by Design, and Safety, Resilience and Sustainability**. These sutras emphasize ethical AI use, prioritizing human-centric values, transparency, fairness, and resilience. They underpin the framework's recommendations, ensuring AI deployment balances innovation with societal and consumer protection goals.

#### WHY IN NEWS?

The RBI committee's AI framework released in August 2025 is structured around these 7 Sutras to promote responsible and ethical AI use in finance.

### Aatmanirbhar Bharat

**Aatmanirbhar Bharat** translates to self-reliant India, a policy framework launched in 2020 aimed at reducing dependence on foreign imports by boosting domestic manufacturing and innovation. It targets sectors including defense, technology, infrastructure, and agriculture. The initiative encourages public-private partnerships, indigenous research, and development to build a sustainable economy. It emphasizes innovation, local supply chains, and export promotion. The policy was accelerated due to geopolitical tensions and supply chain disruptions during the COVID-19 pandemic. It includes financial stimulus packages and reforms to enhance ease of doing business and improve infrastructure.

#### WHY IN NEWS?

Mission Sudarshan Chakra is aligned with the Aatmanirbhar Bharat vision, focusing on indigenous technology and reduced foreign dependency in national defense systems.

### Agriculture Infrastructure and Development Cess (AIDC)

The **Agriculture Infrastructure and Development Cess (AIDC)** is a tax imposed on certain imported agricultural products in India to fund the development of agricultural infrastructure. Introduced as part of the Union Budget 2021-22, it aims to improve cold storage, warehousing, and logistics facilities for farmers. The cess is collected alongside basic customs duty and other tariffs. Revenues from AIDC are allocated for enhancing rural infrastructure, boosting farmers' income, and reducing post-harvest losses. It applies to commodities like cotton, sugar, and pulses. The cess can be temporarily waived or adjusted based on market conditions or trade negotiations.

#### WHY IN NEWS?

The Government of India temporarily eliminated the AIDC on cotton imports from August 19 to September 30, 2025, to mitigate the impact of steep US tariffs on the textile sector.

### Atmanirbhar Bharat

Atmanirbhar Bharat, meaning "Self-Reliant India," is a government initiative launched in



2020 aimed at making India a globally competitive and self-sustaining economy. It focuses on boosting domestic manufacturing, reducing import dependence, and promoting innovation in sectors like solar power, semiconductor manufacturing, and organic agriculture. The program emphasizes building local value chains, enhancing infrastructure, and supporting MSMEs (Micro, Small, and Medium Enterprises). It also encourages sustainable practices and digital compliance frameworks. This initiative aligns with India's long-term economic reforms to increase resilience against global market shocks and geopolitical challenges.

#### WHY IN NEWS?

Atmanirbhar Bharat is brought into light as a key factor in India's ability to withstand the impact of a new 25% US tariff on Indian imports by strengthening domestic production and reducing reliance on foreign markets.

### **Bretton Woods Conference**

The **1944 Bretton Woods Conference** established the post-World War II international monetary system. Delegates from 44 Allied nations created fixed exchange rates anchored to the US dollar, which was convertible to gold at \$35 per ounce. The conference led to the formation of the International Monetary Fund (IMF) and the World Bank. It marked the US dollar's rise as the global reserve currency. The system collapsed in 1971 when President Nixon ended dollar-gold convertibility. Despite this, the dollar remained dominant in international finance. Bretton Woods shaped global economic cooperation and currency stability for decades.

#### WHY IN NEWS?

The text references Bretton Woods to explain the historical foundation of US dollar hegemony and its role in shaping global economic dominance post-World War II.

### **BYD Electric Vehicles**

BYD is a Chinese multinational known for producing electric vehicles (EVs) and batteries. It employs aggressive pricing strategies, leveraging China's manufacturing overcapacity to flood global markets with competitively priced EVs. BYD's approach has helped it capture market share worldwide, contributing to China's dominance in the electric vehicle sector. The company also invests heavily in battery technology and renewable energy solutions. BYD's success exemplifies China's economic statecraft, using production scale and pricing to stifle competition and maintain leadership in emerging technology markets.

#### WHY IN NEWS?

BYD's aggressive market strategies illustrate China's broader economic tactics to suppress competition and solidify global dominance in electric vehicles amid India's manufacturing rise.

### **Captive Power Generation**

**Captive power generation** refers to electricity produced by industrial or commercial consumers primarily for their own use. In Tamil Nadu, it accounts for over **28% of industrial electricity consumption**. These units often rely on **in-house solar power**



**capacity** to reduce dependence on public utilities. The trend enables large consumers to eventually supply power to their suppliers, subtly weakening the public sector monopoly. Captive generation bypasses traditional transmission and distribution utilities, promoting decentralized renewable energy use. This model reduces fiscal burdens on governments and attracts private investment by bypassing inefficient public systems.

#### WHY IN NEWS?

The rise of captive power generation is brought into light as a “reforms by stealth” strategy undermining public monopoly and boosting renewable energy adoption in India’s industrial sector.

### **Cheque Truncation System (CTS)**

The **Cheque Truncation System** is an electronic cheque clearing system introduced by the Reserve Bank of India in 2010. It replaces the physical movement of cheques with electronic images, reducing clearing time and fraud. CTS uses image-based cheque processing where cheque images and related data are transmitted electronically. The system supports faster clearing cycles and improved efficiency in cheque processing. CTS is compliant with international standards such as the Check 21 Act in the US. It has multiple versions, with CTS2010 being the most widely adopted standard in India. The system enhances security by minimizing physical cheque handling.

#### WHY IN NEWS?

The RBI announced transitioning CTS from batch processing to continuous clearing with settlement on realisation, to be implemented in two phases starting October 4, 2025.

### **Clean Slate Principle**

The clean slate principle in insolvency law ensures that once a resolution plan is approved, it binds all stakeholders, extinguishing unpreserved claims against the corporate debtor. It protects existing licences and permits for their remaining term, preventing post-approval demands or litigation that could disrupt business continuity. This principle aims to provide certainty and finality to the insolvency resolution process, reducing delays caused by new claims after plan approval. It is a safeguard to maintain operational stability during restructuring by legally barring reopening of settled claims or challenges to licenses tied to the corporate debtor.

#### WHY IN NEWS?

The IBC Amendment Bill of 2025 clarifies and reinforces the clean slate principle, ensuring resolution plans extinguish unpreserved claims and protect licenses for their remaining term.

### **Cluster-Based Development Model**

The **cluster-based development model** focuses on grouping related industries geographically to improve efficiency and innovation. In Uttar Pradesh, this model targets industrial hubs like Agra, Kanpur, and Unnao, known for footwear and leather manufacturing. It integrates **production, design, research, and training** on a single platform to attract investment and generate employment. This approach supports a



localized ecosystem, facilitating collaboration among artisans, manufacturers, and ancillary units. Clusters enhance resource sharing, streamline supply chains, and improve skill development, driving sectoral growth and competitiveness on a global scale.

#### WHY IN NEWS?

The cluster-based model is a core strategy in the draft Uttar Pradesh Footwear, Leather and Non-Leather Sector Development Policy 2025 reviewed by CM Yogi Adityanath.

### Coastal Shipping Modal Share

India's **Coastal Shipping Modal Share** currently stands at approximately 6 percent of total freight transport. The Coastal Shipping Bill 2025 targets increasing this share to reduce logistics costs and environmental impact. Modal share refers to the percentage distribution of freight moved by different transport modes. Increasing coastal shipping reduces road congestion and pollution by shifting cargo movement from trucks to ships along the coastline. This shift is estimated to save around Rs 10,000 crore annually in logistics costs. Coastal shipping also promotes regional economic development by improving connectivity between smaller ports and hinterlands.

#### WHY IN NEWS?

The Coastal Shipping Bill 2025, passed in August 2025, aims to revive and increase India's coastal shipping modal share for economic and environmental benefits.

### Continuous Clearing

Continuous clearing is a cheque clearing method where cheque images are scanned and sent to the clearing house immediately and continuously during the presentation session. Unlike batch processing, this method allows real-time or near real-time settlement of cheques. It improves liquidity for banks and customers by reducing the time between cheque deposit and fund availability. Continuous clearing involves a single presentation session and extended confirmation sessions for positive or negative confirmation. It is a recent innovation in cheque clearing systems aimed at increasing operational efficiency and customer convenience.

#### WHY IN NEWS?

The RBI is implementing continuous clearing in CTS, replacing the current batch processing system, to start from October 4, 2025.

### Core Inflation

Core inflation measures the change in prices of goods and services excluding volatile components such as food and fuel. This exclusion helps provide a clearer view of long-term inflation trends by filtering out short-term volatility caused by supply shocks or seasonal factors. Central banks use core inflation to guide monetary policy decisions, as it reflects underlying inflationary pressures more accurately. In India, core inflation is closely monitored alongside headline CPI inflation to balance policy responses. It is often lower and more stable than headline inflation, which includes all consumer prices.

#### WHY IN NEWS?

The RBI governor brought into light the importance of core inflation in assessing monetary policy, noting its role in distinguishing transient from persistent inflation during



the FIT framework review.

### **Countervailing Tariff**

A **countervailing tariff** is a protectionist tariff imposed on imported goods to offset subsidies made to producers or exporters in the exporting country. It aims to level the playing field for domestic producers by neutralizing the unfair price advantage. The U.S. imposed a 10% countervailing tariff on Indian shrimp before increasing it to a combined 60%. These tariffs are governed by international trade laws under the World Trade Organization (WTO) agreements. They are distinct from anti-dumping duties, which target pricing below market value rather than subsidies. Countervailing tariffs require detailed investigations to prove subsidy existence and impact.

#### WHY IN NEWS?

The U.S. increased tariffs on Indian shrimp imports from 10% to a total of 60%, affecting shrimp exporters in Andhra Pradesh and the sector's pricing dynamics.

### **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)**

The **CGTMSE** was established in 2000 to provide credit guarantees to banks and financial institutions lending to micro and small enterprises without collateral. It covers term loans and working capital up to ₹2 crore. The scheme promotes easier access to financing for small businesses by reducing risk for lenders. The trust is managed by the Small Industries Development Bank of India (SIDBI) and the Ministry of MSME. It has helped thousands of entrepreneurs, particularly in underserved sectors, by encouraging banks to extend credit to startups and micro-enterprises.

#### WHY IN NEWS?

CGTMSE is one of the key financial schemes featured on the Udyam Sakhi Portal, enabling women entrepreneurs to access credit with reduced collateral requirements.

### **Delhi-Mumbai Industrial Corridor**

The **Delhi-Mumbai Industrial Corridor (DMIC)** is a mega infrastructure project launched in 2006 aiming to develop an industrial zone spanning six states in India. It covers approximately 1,500 km and is designed to create smart cities, improve logistics, and boost manufacturing. Japan is a key financier and technology partner, providing funding and expertise for transport, energy, and urban infrastructure. The corridor aims to increase India's GDP by 2%, create 15 million jobs, and attract foreign investment. Rarely noted is its integration of sustainable energy solutions and smart city technologies inspired by Japanese urban planning principles.

#### WHY IN NEWS?

Japan's financial involvement in the Delhi-Mumbai Industrial Corridor is a major example of strategic cooperation discussed during Modi's 2025 visit to Japan.

### **Domestic Tourism Expenditure Survey (DTES)**

The **Domestic Tourism Expenditure Survey (DTES)** was initiated in July 2025 to capture detailed data on domestic tourism spending in India. It records trip purposes, modes of transport, accommodation types, final destinations, and use of tourism-specific products



and services. DTES helps quantify the economic impact of domestic tourism by providing granular expenditure patterns. The survey supports policy formulation, tourism infrastructure development, and marketing strategies by identifying consumer behavior and preferences within the country. It complements other tourism statistics by focusing on expenditure rather than just visitor numbers.

#### WHY IN NEWS?

DTES was launched alongside NHTS in July 2025 to provide detailed data on domestic tourism spending patterns and support tourism sector planning and policy.

### **Double Taxation Avoidance Agreement (DTAA)**

The **Double Taxation Avoidance Agreement (DTAA)** is a treaty between two or more countries to avoid taxing the same income twice. India has signed DTAAs with about 85 countries. These agreements facilitate the exchange of financial and tax-related information between tax authorities, improving transparency and cooperation. They help prevent tax evasion and money laundering by enabling authorities to track cross-border financial flows. DTAA also promote foreign investment by providing clarity on tax liabilities. However, despite their existence, challenges remain in fully utilizing DTAA to curb illicit financial activities.

#### WHY IN NEWS?

The report mentioned DTAA as a tool India uses to check money laundering and tax evasion, though challenges persist in effective implementation.

### **Economic Offences Wing (EOW)**

The **Economic Offences Wing (EOW)** is a specialized unit within Indian police forces tasked with investigating financial crimes such as fraud, embezzlement, money laundering, and corruption. It operates at both state and central levels. The EOW uses forensic accounting, cyber investigations, and legal expertise to track and prosecute economic offenders. It often coordinates with other agencies like the Enforcement Directorate and Income Tax Department. The EOW's jurisdiction includes crimes involving government contracts, corporate fraud, and financial irregularities. It plays a key role in safeguarding public funds and ensuring transparency in economic transactions.

#### WHY IN NEWS?

The EOW of Mumbai Police arrested contractor Sher Singh Rathod in connection with the ₹65 crore Mithi river desilting fraud, exposing a large-scale financial scam involving forged documents and fake billing.

### **Enhanced Surveillance Mechanism (ESM)**

The **Enhanced Surveillance Mechanism (ESM)** is a regulatory framework introduced by SEBI in June 2023 to monitor and control price volatility in micro and small-cap companies with market capitalizations below ₹500 crore initially. It imposes tight price bands (2-5%), 100% margin requirements, and trade-for-trade settlement on stocks showing abnormal price movements. ESM has two stages – Stage 1 applies these restrictions, while Stage 2 restricts trading to weekly call auctions for stocks with persistent volatility. The threshold



was raised to ₹1,000 crore in August 2024, and rules were updated in 2025 to focus on positive price variations and apply fundamental filters like PE ratio.

#### WHY IN NEWS?

SEBI recently revised ESM rules to improve regulation of volatile micro and small-cap stocks, adjusting thresholds and criteria to better balance investor protection and market liquidity.

### Evergreening in Patents

Evergreening is a patent strategy used primarily in pharmaceuticals where minor changes to an existing drug extend patent protection beyond the original term. This practice delays generic competition and keeps drug prices high. India's patent laws currently restrict evergreening to prevent monopolistic practices and ensure affordable medicines. The Indian Patent Act, Section 3(d), specifically limits patents on new forms of known substances unless they show enhanced efficacy. This law has been a model for other developing countries seeking to balance innovation incentives with public health needs. Pharmaceutical companies often challenge this law domestically and internationally.

#### WHY IN NEWS?

The US demands India change its patent laws to allow evergreening, which India resists to protect affordable generic drug production.

### Exchange Coupling

Exchange coupling refers to the integration of multiple trading platforms into a single operational framework where trades across exchanges are coordinated but not fully merged. Unlike market coupling, which optimizes cross-border electricity flows, exchange coupling focuses on operational and settlement alignment between exchanges. It can involve shared infrastructure, data protocols, and settlement systems but retains distinct market identities. Exchange coupling is uncommon globally and often seen as a step toward full market integration. It may lead to duplication of functions and added complexity if not carefully designed. The concept is more prevalent in financial markets but less explored in power markets.

#### WHY IN NEWS?

Industry officials argue that CERC's proposed market coupling design resembles exchange coupling, lacking global precedence and raising concerns about complexity and efficacy in India's power markets.

### Export Credit Guarantee Corporation (ECGC)

The **Export Credit Guarantee Corporation (ECGC)** is a government-owned company established in 1957 to provide export credit insurance support to Indian exporters. It protects exporters against payment risks arising from commercial and political uncertainties. ECGC offers various schemes including pre-shipment and post-shipment credit insurance, and export credit risk insurance. It plays a key role in enhancing exporters' confidence by mitigating risks related to foreign buyers' defaults. ECGC also supports banks by providing guarantees for export loans. It operates under the Ministry



of Commerce and Industry and has been very important in promoting Indian exports globally through risk coverage.

#### WHY IN NEWS?

ECGC is mentioned as a key stakeholder in the new Export Promotion Mission aimed at supporting exporters with credit and insurance mechanisms amid rising US tariffs on Indian goods.

### **Fair and Remunerative Pricing (FRP)**

The Fair and Remunerative Pricing (FRP) system sets the minimum price sugarcane farmers receive for their crop in India. It is fixed annually by the government and aims to ensure farmers a stable income. FRP is a key factor influencing farmers' preference for sugarcane cultivation, even as ethanol production increases. The pricing mechanism considers factors like production costs, market trends, and sugar prices. It has helped maintain sugarcane acreage stability despite fluctuations in sugar demand. FRP payments have amounted to over ₹1.20 lakh crore to farmers since FY15, supporting the ethanol industry's growth.

#### WHY IN NEWS?

FRP is central to sugarcane farmers' decisions amid rising ethanol production from sugarcane, which has implications for agricultural sustainability and ethanol supply in India.

### **Financial Stability Board (FSB)**

The **Financial Stability Board (FSB)** was established in 2009 by the G20 to coordinate national financial authorities and international standard-setting bodies. Its mission is to promote global financial stability by monitoring and making recommendations about the global financial system. The FSB addresses vulnerabilities, implements regulatory reforms, and enhances transparency. It includes representatives from major economies, international financial institutions, and standard-setting bodies. The FSB played a key role in post-2008 financial crisis reforms and continues to oversee emerging risks such as fintech and cyber threats.

#### WHY IN NEWS?

Dr. Rajiv Ranjan's experience includes work with the FSB, which puts stress on his expertise in global financial regulation relevant to his new role at the NDB.

### **Fiscal Consolidation in India**

Fiscal consolidation in India refers to policies aimed at reducing fiscal deficits and stabilizing government debt relative to GDP. It involves prudent government spending, improved tax collection, and rationalizing subsidies. India's fiscal consolidation efforts intensified post-COVID-19 pandemic to manage rising debt and inflation. The government targets reducing the fiscal deficit below 4% of GDP and general government debt below 60% of GDP structurally. These measures improve investor confidence and credit ratings. Fiscal consolidation also includes enhancing transparency in fiscal accounts and prioritizing capital expenditure over revenue expenditure to promote sustainable growth.



## WHY IN NEWS?

India's commitment to fiscal consolidation was cited by S&P Global as a key factor in upgrading the country's sovereign credit rating.

**Fiscal Responsibility and Budget Management Act**

The **Fiscal Responsibility and Budget Management Act (FRBM Act)** was enacted in India in 2003 to institutionalize fiscal discipline by setting targets for the government's fiscal deficit and debt. It mandates the reduction of the fiscal deficit to below 3% of GDP. Since its enactment, the target has been met only once, in 2007-08, due to accounting adjustments. The Act requires the government to lay down a medium-term fiscal policy statement and fiscal policy strategy statement annually. It aims to ensure prudent fiscal management and sustainability of public finances, but compliance has been inconsistent over the years.

## WHY IN NEWS?

The FRBM Act is relevant as India's fiscal deficit reduction, targeted under this law, was a key factor in S&P Global Ratings upgrading India's sovereign credit rating in August 2025.

**Flexible Inflation Targeting**

Flexible inflation targeting (FIT) is a monetary policy framework where central banks aim to keep inflation near a target rate but allow for some short-term flexibility to support economic growth. India adopted FIT in the 2010s, leading to reduced inflation volatility and smaller nominal policy rate adjustments. FIT balances inflation control with output stabilization by permitting temporary deviations from the inflation target in response to economic shocks. This approach helps maintain low and steady inflation, enabling better predictability in interest rate changes and encouraging an environment conducive to investment and growth.

## WHY IN NEWS?

The text discusses how India's FIT regime has lowered inflation volatility and aided smoother monetary policy adjustments, influencing current and future RBI decisions.

**Foreign Currency Assets (FCA)**

Foreign Currency Assets are the foreign currency-denominated assets held by a country's central bank, primarily in the form of government securities, treasury bills, and deposits with foreign banks. These assets are a key component of a nation's foreign exchange reserves and serve as a buffer to stabilize the currency and meet external obligations. The Reserve Bank of India manages FCA to maintain liquidity and safeguard the rupee's value. FCA values fluctuate with currency exchange rates and global market conditions. They represent the largest portion of India's foreign exchange reserves.

## WHY IN NEWS?

India's foreign currency assets increased by over 1.9 billion dollars to 585.9 billion dollars in the week ending 15th August 2025, driving the overall rise in foreign exchange reserves.

**Forward Linkages**

**Forward linkages** refer to the process by which urban development adopts and



integrates **advanced infrastructure, technologies, and facilities** from more developed countries. This adoption enhances the global outlook of cities, improving economic opportunities and competitiveness. Forward linkages facilitate the transfer of knowledge, innovation, and capital investment, which accelerates urban growth. They play important role in shaping modern urban economies by connecting local industries to global value chains. These linkages help cities leapfrog traditional development stages, encouraging sustainable and technologically advanced urban environments. They are essential in transforming cities into hubs of innovation and economic dynamism.

#### WHY IN NEWS?

The World Bank report marks forward linkages as a key factor for India's urban transformation and economic growth, emphasizing their role in adopting global best practices to create prosperous cities.

### **Global Capability Centers (GCCs)**

Global Capability Centers (GCCs) are **offshore units** set up by multinational companies to handle IT, R&D, and business operations. Karnataka aims to add 500 more GCCs by 2029, creating 350,000 jobs and generating \$50 billion in economic output. GCCs contribute to Karnataka's status as India's largest software-exporting state, accounting for 44% of the country's software exports. These centers focus on innovation, product development, and business process management. Karnataka's GCC Policy 2024-29 encourages the decentralization of tech clusters outside Bengaluru to promote inclusive growth and leverage regional talent pools.

#### WHY IN NEWS?

Karnataka's government announced ambitious targets for GCC expansion and job creation as part of its GCC Policy 2024-29 at an industry meet before Bengaluru Tech Summit 2025.

### **Grants-in-Aid**

Grants-in-aid are funds transferred by the central government to state governments for specific purposes or general support. They include funds for centrally sponsored schemes, local bodies, and disaster relief. These grants supplement states' revenues and are crucial for schemes like health, education, and infrastructure. The amount and conditions are decided by the Finance Commission and central ministries. Grants-in-aid can fluctuate based on fiscal policies and economic conditions. After a contraction of about 10% in the previous fiscal year, grants-in-aid are projected to grow 3-4% in FY26 due to increased outlays in the Union and state budgets.

#### WHY IN NEWS?

Grants-in-aid from the Centre are expected to recover with 3-4% growth in FY26, supporting state revenues after a 10% contraction in FY25, as reported by CRISIL.

### **GST Composition Scheme**

The **GST Composition Scheme** is a simplified tax scheme under India's Goods and Services Tax regime designed for small taxpayers with an annual turnover of less than ₹1.5 crore. It allows payment of tax at a fixed rate on turnover with minimal compliance,



without the need to maintain detailed records or avail input tax credit. The scheme covers manufacturers, traders, and service providers but excludes inter-state supplies and e-commerce operators. Composition taxpayers cannot claim input tax credit, but benefit from reduced paperwork and lower tax rates. This scheme encourages small businesses to register under GST by reducing compliance burdens.

#### WHY IN NEWS?

Small vendors in Karnataka facing GST notices could benefit from the composition scheme, which offers a legal way to pay taxes with less compliance, potentially reducing conflicts with tax authorities.

### Haat on Wheels

Haat on Wheels is a mobile retail initiative launched to create a direct marketplace for handloom products, bringing authentic textiles from artisans to urban consumers. It operates through a specially designed vehicle traveling across markets, residential areas, and cultural hotspots, primarily in the Delhi NCR region. The project aims to bridge the gap between rural weavers and urban buyers, enhancing economic empowerment for artisans. It supports sustainable consumption by promoting locally made, handcrafted textiles. The initiative is part of the government's broader efforts to modernize traditional crafts and increase market access while preserving cultural heritage.

#### WHY IN NEWS?

The Haat on Wheels was launched during the 11th National Handloom Day celebrations as a pioneering step in mobile retail for Indian handlooms.

### Homestay Market Growth

India's homestay market is projected to grow at a **Compound Annual Growth Rate (CAGR) of 11% from 2024 to 2031**, the highest globally. This growth follows a post-pandemic domestic tourism boom, with domestic tourist spending rising 28% from 2019 to Rs 16 lakh crore in 2023-24. International tourist spending also surpassed pre-pandemic levels, reaching Rs 2.85 lakh crore in 2023-24. By 2033-34, domestic spending is expected to reach Rs 28.7 lakh crore, and international spending Rs 4.07 lakh crore. The sector's expansion is driven by increasing traveler preference for personalized experiences and sustainable tourism options.

#### WHY IN NEWS?

The NITI Aayog report cites this rapid market growth to justify the urgent need for a simplified, inclusive regulatory framework for homestays in India.

### Import Elasticity

Import elasticity measures the responsiveness of the quantity of imports to changes in import tariffs or prices. An elasticity of (-)1 means a 1% increase in tariffs leads to a 1% decrease in imports. India's import elasticity exceeding (-)1 indicates imports are highly sensitive to tariff changes, affecting export growth due to increased import content in exports. This concept is crucial in trade policy analysis to predict the impact of tariff adjustments on trade volumes and economic growth. It varies by sector and commodity,



influenced by availability of substitutes and trade agreements.

WHY IN NEWS?

Import elasticity is used here to estimate the impact of U.S. reciprocal tariffs on India's export volume and overall trade balance for 2025-26.

### India Brand Equity Foundation

The **India Brand Equity Foundation (IBEF)** is a trust established by the Ministry of Commerce and Industry to promote and create global awareness of Indian products and businesses. It provides market research, branding support, and promotional activities to enhance the reputation of Indian brands worldwide. IBEF collaborates with government bodies and industry stakeholders to facilitate exports and attract investments. It plays an advisory role in schemes like the Made in India Label and supports campaigns to position India as a prominent manufacturing and export hub. IBEF also publishes reports and organizes events to showcase Indian industry capabilities.

WHY IN NEWS?

IBEF is involved in the advisory and promotional activities linked to the Made in India Label Scheme, aiding in branding and global outreach for Indian products.

### India Stack

India Stack is a set of APIs and digital infrastructure developed by the Government of India to enable paperless, cashless, and presence-less service delivery. Key components include Aadhaar for identity verification, Unified Payments Interface (UPI) for instant payments, and DigiLocker for digital document storage. India Stack facilitates seamless integration of government and private services, promoting financial inclusion and digital governance. It supports innovations like biometric authentication and digital signatures, enabling millions of Indians to access banking, healthcare, and other essential services digitally.

WHY IN NEWS?

IPPB's operating model relies on India Stack technologies to deliver accessible and secure banking services, including the new Aadhaar-based face authentication feature.

### India's Ethanol Import Ban

India prohibits **importing ethanol for fuel purposes** as part of its trade stance. This policy aims to protect domestic sugarcane farmers and the local ethanol industry. India produces ethanol mainly from sugarcane molasses and restricts imports to avoid market disruption. The ban is linked to broader agricultural and trade policies, including opposition to genetically modified crops and limited access to certain agricultural imports. Ethanol fuel blending targets in India rely on domestic production, making import restrictions critical to safeguard rural livelihoods and the sugar sector's economic stability.

WHY IN NEWS?

India's refusal to import ethanol is a key point in trade tensions with the US, which seeks market access as part of broader trade negotiations.

### Indian Capitalism's Arbitrage Culture

Indian capitalism is characterized by a focus on **arbitrage**, which means exploiting price



or regulatory differences for quick financial gains rather than investing in long-term productive capacity. This culture prioritizes stock market speculation, financial engineering, and rapid returns over innovation or manufacturing world-class products. Indian business elites often prefer short-term profits through acquisitions or brand purchases rather than building indigenous global brands. This speculative mindset limits technological spillover and industrial upgrading. Unlike American firms, Indian capital has historically underinvested in research, development, and human capital, contributing to a lack of sustained economic dynamism and global competitiveness.

#### WHY IN NEWS?

The arbitrage culture is brought into light as a key reason for the stagnation of private investment and the failure of Indian capitalism to rise to global challenges.

### **Interest Elasticity of Demand**

Interest elasticity of demand measures how sensitive the quantity of demand for credit is to changes in real interest rates. In emerging markets like India, it is particularly high due to a large youth population setting up homes and a shift from informal to formal finance. This means small changes in interest rates can influence borrowing behavior. High elasticity supports monetary policy effectiveness in stimulating growth. It also implies that lower real interest rates can boost demand without causing inflation if managed properly. This concept is crucial for designing monetary policies targeted at growth and financial inclusion.

#### WHY IN NEWS?

The text marks the high interest elasticity of demand in India, emphasizing its role in monetary policy decisions aimed at supporting growth through low real interest rates.

### **New Development Bank (NDB)**

The **New Development Bank** was established in 2014 by the BRICS nations (Brazil, Russia, China, South Africa) to finance infrastructure and sustainable development projects. It aims to complement existing international financial institutions and focuses on projects in emerging economies. The NDB's authorized capital is \$100 billion, with equal voting rights for all members. It supports sectors like transport, clean energy, water, sanitation, and digital infrastructure. The bank emphasizes mobilizing private capital for development and has a growing portfolio in India, currently worth \$7.5 billion, second only to China's \$8.1 billion.

#### WHY IN NEWS?

The NDB appointed Dr. Rajiv Ranjan as vice president and chief risk officer, denoting India's increasing influence in the bank and its expanding project portfolio.

### **New International Economic Order (NIEO)**

The **New International Economic Order (NIEO)** was a 1974 UN General Assembly initiative aimed at restructuring global economic relations to favor developing countries. It emphasized technology transfer on "favorable terms" from developed to developing nations to accelerate industrialization and reduce economic disparities. Despite broad



support, the NIEO's goals were largely unmet due to resistance from advanced economies and structural challenges in global trade and intellectual property regimes. The NIEO remains a reference point in international negotiations on technology transfer and development aid, including India's ongoing demands for climate-friendly technology access.

#### WHY IN NEWS?

India's weakened stance on technology transfer under the India-UK trade agreement contrasts with the NIEO's original call for facilitated technology transfer to developing countries.

### Next-Generation GST Reforms

The **Next-Generation GST Reforms** refer to a set of upcoming changes in India's Goods and Services Tax system aimed at reducing the tax burden on daily-use items. These reforms are designed to simplify tax compliance, lower costs for consumers, and stimulate economic activity. Scheduled for implementation by Diwali 2025, the reforms focus on making GST more efficient and citizen-friendly, particularly benefiting low and middle-income groups. The initiative also includes technological upgrades to GST infrastructure for faster processing and better transparency.

#### WHY IN NEWS?

PM Modi announced the Next-Generation GST reforms as a Diwali gift to reduce taxes on essential goods, enhancing affordability and economic growth.

### Offshore Foreign Direct Investment (FDI)

Offshore Foreign Direct Investment (FDI) refers to investments made by companies in foreign countries to establish or acquire business operations. Unlike traditional FDI, which is inbound to a country, offshore FDI involves domestic companies investing abroad to access new markets or circumvent trade barriers. In the seafood industry, offshore FDI allows companies to operate in countries with favorable trade agreements and infrastructure. This strategy helps bypass tariffs, reduce production costs, and gain logistical advantages. Indian seafood exporters are increasingly considering offshore FDI in countries like Ecuador to maintain access to the US market amid rising tariffs. Offshore FDI requires navigating legal, cultural, and operational challenges.

#### WHY IN NEWS?

Indian seafood exporters are exploring offshore FDI in Ecuador to bypass US tariffs and sustain their export market presence.

### Oilseeds Mission

India's **Oilseeds Mission** is a government initiative aiming to achieve self-sufficiency in oilseed production and reduce import dependence. It focuses on crops like groundnut, sunflower, soybean, and others. In the 2025-26 kharif season, oilseed cultivation area declined by nearly **7 lakh hectares**, partly due to maize expansion driven by ethanol demand. Soybean yields and prices have been disappointing in states like Madhya Pradesh, impacting farmers' income. This decline poses risks to nutritional security and



the country's vegetable oil supply, which is critical given India's status as a major edible oil importer.

#### WHY IN NEWS?

Oilseed area reduction in 2025-26 is linked to farmers shifting to maize cultivation, influenced by ethanol-blending incentives.

### **Palm Jaggery**

**Palm jaggery** is an unrefined sweetener made from the sap of various palm species, notably the date palm and palmyra palm. It is produced by boiling the extracted sap until it solidifies into blocks or cakes. Palm jaggery is rich in minerals like iron, calcium, and magnesium, and is considered healthier than refined sugar. It has a distinct caramel-like flavor and is used in traditional Indian sweets, beverages, and Ayurvedic remedies. Production is labor-intensive, often carried out by small rural communities using age-old methods. Palm jaggery is also valued for its lower glycemic index compared to cane sugar.

#### WHY IN NEWS?

Palm jaggery is cited as one of the niche, traditional products now widely available across India through ecommerce, reflecting changing consumption patterns.

### **Passive Investing**

Passive investing is an investment strategy that aims to replicate the performance of a market index rather than outperform it. It typically involves buying and holding a diversified portfolio of securities with minimal trading. Passive funds have lower expense ratios compared to active funds due to less frequent management. The approach emphasizes transparency, cost efficiency, and alignment with market benchmarks. Globally, index funds and exchange-traded funds (ETFs) are common passive investment vehicles. In India, passive investing has grown, now accounting for about **17%** of total mutual fund AUM as of mid-2025, reflecting a structural shift in investor preferences.

#### WHY IN NEWS?

Passive investing's share in India's mutual fund industry AUM reached 17% in June 2025, marking a notable increase in adoption alongside active funds.

### **Phased Manufacturing Programme**

The **Phased Manufacturing Programme (PMP)** under the PM E-DRIVE scheme aims to increase domestic production of electric vehicles and components gradually. It involves staged localization of parts, reducing import dependence and encouraging local industries. PMP targets cost reduction, technology transfer, and supply chain development by mandating higher local content in EV manufacturing over time. This approach supports the Make in India mission and helps scale up manufacturing capacity for electric 2-wheelers, 3-wheelers, buses, and trucks. PMP also aligns with government policies to boost employment and innovation in the EV sector.

#### WHY IN NEWS?

The PMP is integral to the PM E-DRIVE scheme's goal of enhancing India's EV manufacturing ecosystem and is brought into light during the scheme's extension announcement.



## Power Purchase Agreements (PPAs)

**Power Purchase Agreements (PPAs)** are contracts between electricity producers and buyers, specifying terms for the sale and purchase of power. They define pricing, duration, delivery schedules, and penalties. PPAs reduce risks for project developers by ensuring a guaranteed buyer and revenue stream. They are crucial for financing renewable energy projects, providing stability for investors and lenders. Delays in project commissioning can affect PPA terms and financial viability. In India, PPAs are commonly signed between renewable energy producers and distribution companies or large consumers.

### WHY IN NEWS?

Approximately 26 GW of renewable projects with signed PPAs may face cash flow challenges due to the end of the ISTS charge exemption, impacting project economics.

## Pre-filled GST Returns

are a technological innovation designed to ease tax compliance by auto-populating tax returns with data already available to tax authorities, such as invoices and payments. This reduces manual entry errors, speeds up filing processes, and minimizes mismatches between taxpayer submissions and government records. Pre-filled returns are part of India's broader effort to digitize tax administration, improve transparency, and reduce taxpayer burden, especially for small businesses and startups. The system also facilitates faster refunds and better detection of discrepancies, contributing to a more efficient and taxpayer-friendly GST ecosystem.

### WHY IN NEWS?

As part of GST reforms, India plans to implement pre-filled returns to automate tax filing, reduce manual intervention, and expedite refund processing.

## Price Loss Coverage (PLC)

Price Loss Coverage (PLC) is a US agricultural subsidy program that provides direct payments to farmers when market prices for certain crops fall below a predetermined Effective Reference Price (ERP). It covers 22 major crops, including wheat, corn, soybean, and cotton. PLC payments are designed to protect farmers from severe price drops without the government procuring crops directly. PLC operates alongside Agriculture Risk Coverage (ARC), which offers revenue-based payments, and Dairy Margin Coverage (DMC), which supports the dairy sector. PLC is part of the US Farm Bill framework and plays a key role in stabilizing farm incomes.

### WHY IN NEWS?

PLC is mentioned to compare US farm subsidy mechanisms with India's Minimum Support Price system, denoting differences in subsidy transparency and impact on small farmers.

## Primary Deficit

The **primary deficit** is the fiscal deficit excluding interest payments on past government debt. It reflects the current year's borrowing needs for government operations. India's primary deficit was projected to decline from 3% of GDP in 2022-23 to 0.8% in 2025-26. A high primary deficit indicates reliance on borrowing beyond interest servicing, potentially



crowding out private investment by raising interest rates. While a falling primary deficit signals fiscal discipline, India's overall fiscal deficit and public debt remain high, with a government debt-to-GDP ratio of about 81% in 2022-23, above the 60% target. This constrains public spending and fiscal flexibility.

#### WHY IN NEWS?

India's fiscal position, including its primary deficit trajectory, is central to debates about sustainable economic growth amid large government borrowing and debt levels.

### **Production Linked Incentive (PLI)**

The **Production Linked Incentive (PLI)** scheme was launched by the Government of India in 2020 to boost domestic manufacturing and reduce import dependence by providing financial incentives based on incremental sales. It covers multiple sectors including electronics, pharmaceuticals, and automobiles. Despite a budget allocation of Rs. 2.96 lakh crore, PLI has largely encouraged local assembly rather than full-scale manufacturing, especially in the smartphone sector. The scheme aims to increase exports and value addition but has faced criticism for limited job creation and dependency on imported components. PLI is a key part of India's industrial policy to achieve self-reliance.

#### WHY IN NEWS?

PLI's fourth review revealed it promotes assembly of imported smartphone parts with limited value addition, questioning its effectiveness in boosting manufacturing and employment as part of India's Make in India initiative.

### **Protectionism**

Protectionism is an economic policy where governments impose tariffs, quotas, or regulations to restrict imports and protect domestic industries. It aims to shield local businesses from foreign competition. Protectionist measures can include tariffs on imported goods, subsidies to domestic producers, and non-tariff barriers such as licensing or standards. While protectionism can preserve jobs in certain sectors, it often leads to higher prices for consumers and can provoke retaliatory trade measures. Countries labeled as highly protectionist typically have complex regulations and high barriers to foreign market entry, which can affect international trade balances.

#### WHY IN NEWS?

US President Trump cited India's protectionist policies as a reason for imposing high tariffs, accusing India of making it difficult for US producers to sell products there.

### **Rare Earth Elements (REEs)**

Rare Earth Elements (REEs) are a group of 17 chemically similar metals critical for electronics, automotive, and renewable energy technologies. China controls over 60% of global REE production and processing capacity. REEs are essential for magnets, batteries, and catalysts. Their extraction and refining are environmentally challenging and capital-intensive, limiting global supply diversity. Countries dependent on REEs face strategic vulnerabilities. Efforts to develop alternative sources and recycling are ongoing but limited. China's export restrictions on REEs can disrupt global manufacturing supply



chains, particularly impacting industries reliant on advanced electronics and clean energy technologies.

#### WHY IN NEWS?

China's curbs on rare earth exports to India are part of economic pressure tactics affecting India's electronics and automotive manufacturing sectors.

### **Rupee Stablecoin**

A **rupee stablecoin** is a digital token pegged 1:1 to the Indian rupee, designed to facilitate faster, cheaper, and 24/7 cross-border payments and remittances. Unlike volatile cryptocurrencies, it is fully backed by fiat currency reserves regulated by the Reserve Bank of India (RBI). Rupee stablecoins could strengthen the rupee's role in digital finance and reduce reliance on USD-backed stablecoins. Despite its potential, India has yet to authorize or regulate any rupee stablecoin for domestic use, citing concerns over monetary sovereignty and dollarisation. Globally, rupee stablecoins could compete with traditional payment systems like SWIFT or Visa.

#### WHY IN NEWS?

India is debating the introduction of a rupee stablecoin, which could transform remittances and digital payments, but regulatory hesitation persists amid concerns about monetary control.

### **Shadow Banks**

Shadow banks in India are non-banking financial companies (NBFCs) that provide credit outside the traditional banking system. They play a role in microfinance and unsecured retail lending but are vulnerable to credit risk due to limited regulation compared to banks. Recently, rising slippages in shadow banks contributed to a 26% year-on-year increase in loan defaults, with fresh slippages reaching about ₹49,000 crore. They are critical for financial inclusion but also pose systemic risks, as seen in past crises like the IL&FS default in 2018, which brought into light their fragility and interconnectedness with the formal banking sector.

#### WHY IN NEWS?

Recently, shadow banks in India showed rising credit stress, contributing to increased non-performing assets and financial sector vulnerabilities amid economic slowdown.

### **Shubh-labh Philosophy**

Shubh-labh is a traditional Indian concept combining shubh (auspiciousness) and labh (profit or gain). It reflects the balance between ethical conduct and material success in commerce and daily life. Rooted in dharmic thought, it encourages prosperity achieved through righteous means, emphasizing moral responsibility in financial dealings. The philosophy influences rituals, business practices, and social ethics in Indian culture, promoting harmony between wealth accumulation and spiritual values. Shubh-labh is invoked during festivals and business openings to ensure success aligned with ethical principles. It integrates with modern frameworks like corporate social responsibility (CSR) and environmental, social, and governance (ESG) practices.



## WHY IN NEWS?

The UGC draft commerce curriculum incorporates the Shubh-labh philosophy to teach students the balance between profit-making and ethical responsibility, linking traditional wisdom with contemporary business ethics.

**Sovereign Credit Rating BBB Category**

A **BBB credit rating** by S&P Global Ratings indicates an entity has an adequate capacity to meet financial commitments but is more vulnerable to adverse economic conditions than higher-rated entities. The BBB category is the lowest tier of investment grade ratings, above speculative grades. It is subdivided into BBB-, BBB, and BBB+, with BBB- being the lowest and BBB+ closer to an upgrade. Countries like India, Greece, Mexico, and Indonesia are rated BBB. An upgrade from BBB- to BBB reflects improved economic fundamentals but still requires caution. Ratings influence borrowing costs and investor perception globally.

## WHY IN NEWS?

India's upgrade from BBB- to BBB by S&P Global Ratings in August 2025 marked the first improvement in nearly two decades, signaling stronger economic stability and creditworthiness.

**Special Assistance to States for Capital Investment (SASCI)**

SASCI is a financial framework by the Indian Ministry of Finance designed to provide capital investment assistance to states for infrastructure projects. It operates under specific guidelines, including the requirement for states to submit Detailed Project Reports (DPRs) and allocations being made on a first-come, first-served basis. SASCI supports schemes like PM Ekta Malls by earmarking funds (₹5,000 crore for this scheme) to boost economic development and infrastructure. States must provide land or cover acquisition costs. SASCI emphasizes transparency and prioritizes projects that enhance local economies and employment.

## WHY IN NEWS?

The PM Ekta Mall scheme is implemented under SASCI guidelines, with detailed project reports approved for 27 states to receive central funding for mall construction.

**Stabilisation Fund**

A stabilisation fund is a government reserve created from windfall revenues, such as those from commodity exports or unexpected fiscal surpluses, to cushion the economy against shocks. It is used to manage volatility in revenues, stabilize currency fluctuations, and support fiscal spending during downturns. Countries like Norway have sovereign wealth funds serving this purpose. Stabilisation funds help maintain macroeconomic stability by providing fiscal space during crises without resorting to excessive borrowing. They require strict governance and transparency to avoid misuse and ensure long-term sustainability of public finances.

## WHY IN NEWS?

India is advised to create a stabilisation fund from windfall revenues as part of building macroeconomic resilience against commodity shocks and currency swings.



### State Level Bank Committees (SLBCs)

**State Level Bank Committees (SLBCs)** are apex banking coordination forums at the state level in India, comprising representatives from public sector banks, private banks, cooperative banks, and government agencies. Established under the Reserve Bank of India's guidelines, SLBCs facilitate implementation of government schemes, monitor banking development, and address regional financial issues. They play important role in coordinating efforts to achieve targets under schemes like APY. Some SLBCs, such as those of Jharkhand, Bihar, and Tripura, recorded over **150% achievement** in APY enrolments in FY 2024-25, denoting their effectiveness in regional outreach.

#### WHY IN NEWS?

SLBCs of Jharkhand, Bihar, and Tripura led state-level achievements in APY enrolments during FY 2024-25, surpassing targets and driving pension scheme penetration.

### Supply Chain Resilience Initiative (SCRI)

The **Supply Chain Resilience Initiative (SCRI)** is a trilateral cooperation framework between India, Japan, and Australia launched in 2021. It aims to diversify and secure supply chains in the Indo-Pacific by reducing dependency on single sources, enhancing transparency, and promoting alternative manufacturing hubs. SCRI focuses on critical sectors such as pharmaceuticals, semiconductors, and raw materials. It complements broader economic security strategies of member countries and supports regional stability. The initiative facilitates information sharing, joint risk assessment, and capacity-building measures to strengthen supply chain robustness against disruptions like pandemics or geopolitical tensions.

#### WHY IN NEWS?

SCRI is part of the strategic discussions during the India-Japan Annual Summit, reflecting their joint efforts with Australia to ensure resilient and secure supply chains amid global uncertainties.

### Wholesale Price Index (WPI)

The **Wholesale Price Index (WPI)** measures the average change in prices of goods at the wholesale level before they reach consumers. It covers three major groups – primary articles, fuel and power, and manufactured products. India's WPI uses a base year of 2011-12 and includes over 697 commodities. Unlike the Consumer Price Index (CPI), WPI does not account for services or taxes like VAT. It is published monthly by the Ministry of Commerce and Industry. WPI is considered a leading indicator of inflation trends, as changes in wholesale prices often precede retail price changes.

#### WHY IN NEWS?

India's WPI inflation rate fell to a two-year low of -0.58% in July 2025, reflecting declines in food and fuel prices, impacting overall inflation trends and economic policy considerations.

### Worker Population Ratio (WPR)

The **Worker Population Ratio (WPR)** is a labour market indicator representing the



proportion of employed persons in the total population aged 15 years and above. It measures the percentage of the population that is actually working, regardless of whether they are actively seeking employment. WPR is used alongside Labour Force Participation Rate (LFPR) and Unemployment Rate (UR) to assess the employment situation. In India, WPR varies between rural and urban areas and by gender, reflecting differences in economic activities and labour market participation. It is a key output of the PLFS under the Current Weekly Status.

#### WHY IN NEWS?

The April–June 2025 PLFS Quarterly Bulletin reported WPR for the first time with rural and urban disaggregation, showing 54.4% in rural and 47.1% in urban areas.

### World Economic Outlook (WEO)

The **World Economic Outlook (WEO)** is a biannual report published by the International Monetary Fund (IMF) that provides analysis and projections of the global economy. It covers GDP growth, inflation, trade, and fiscal policies across countries. The WEO uses data from over 190 countries and is a key reference for policymakers and economists worldwide. It marks risks such as geopolitical tensions and financial market volatility. The report also assesses emerging markets and developing economies separately. The WEO was first published in 1980 and has evolved to include detailed sectoral and regional analyses.

#### WHY IN NEWS?

The IMF's August 2025 WEO report revised India's GDP growth forecast upward to 6.4% for FY26 and FY27, reflecting improved global economic conditions and lower tariff risks.

## Geography (Indian & Physical)

### Chempakathozukudy Settlement

Chempakathozukudy is a tribal settlement near **Suryanelli** in the Munnar region of Kerala, serving as a cultural and social hub for the Muthuvan tribe. It is located within the biodiverse Western Ghats, known for its rich flora and fauna. The settlement hosts community gatherings and traditional events, acting as a center for tribal decision-making. Its location near tea plantations contrasts with the indigenous lifestyle of the Muthuvan people. The name Chempakathozukudy reflects local linguistic roots, with "Chempaka" referring to a type of fragrant flower common to the area.

#### WHY IN NEWS?

Chempakathozukudy hosted the three-day Muthuvan Adivasi Samudaya Sangam convention aimed at cultural preservation and community discussions on education and farming.

### Dandakaranya

Dandakaranya is a forested region spanning parts of **Chhattisgarh, Odisha, Andhra Pradesh, and Maharashtra**. It served as the de facto capital for the Maoist insurgents for over two decades. The area is characterized by dense forests, tribal populations, and difficult terrain, providing natural cover for guerrilla warfare. Maoists focused on military



preparedness and ideological indoctrination here but neglected socio-economic development. The region's strategic importance lies in its location and natural resources. Declining Maoist influence in Dandakaranya is attributed to leadership crises, internal rifts, and effective counterinsurgency operations.

#### WHY IN NEWS?

Dandakaranya remains central to Maoist operations; recent security force actions in this region, including the killing of key Maoist leader Basava Raju, have weakened the insurgency.

### **Geographical Indication (GI) Act, 1999**

The **Geographical Indications of Goods (Registration and Protection) Act, 1999** is an Indian law that protects products originating from specific regions with unique qualities linked to their geographical origin. It grants legal rights to producers to prevent unauthorized use of GI tags. Registered GI products can seek police intervention against counterfeit products. The Act covers goods including handloom, handicrafts, agricultural goods, and manufactured items. It encourages preservation of traditional knowledge and cultural heritage. GI registration involves financial assistance for design registration, training, legal enforcement, and promotional activities. Over 300 handloom and handicraft products have been registered under this Act in India.

#### WHY IN NEWS?

The Ministry of Textiles announced new financial assistance schemes and promotional activities under the GI Act, denoting recent efforts to protect and market GI-tagged handloom and handicraft products across India.

### **Great Bend of Yarlung Zangbo**

The Great Bend is a unique geographical feature where the Yarlung Zangbo River sharply turns nearly 180 degrees from west-east to southward, entering India as the Brahmaputra. This bend lies in Medog County, Tibet Autonomous Region, at an elevation of approximately 3,000 meters. It is one of the deepest river gorges globally, with depths exceeding 6,000 meters in places. The bend creates hydrological and ecological diversity, influencing local climate and biodiversity. The river's unusual course at the Great Bend has been described historically as a rogue river in Chinese literature, a rare deviation from typical eastward flowing rivers in China.

#### WHY IN NEWS?

China approved a 60 GW mega-hydropower dam project at the Great Bend in December 2024, raising geopolitical and environmental concerns for downstream countries India, Bhutan, and Bangladesh.

### **Kakrahwa Border**

The **Kakrahwa border** is a lesser-known international crossing point between India's Siddharthnagar district in Uttar Pradesh and Nepal. It serves as a gateway for Buddhist pilgrims traveling between Piprahwa in India and Lumbini, the birthplace of Lord Buddha, in Nepal. The border is less crowded compared to major crossings and is being considered



for establishing a dedicated immigration office to facilitate smoother pilgrim movement. This development aims to boost religious tourism and enhance cross-border cultural exchange between India and Nepal, particularly for visitors to Buddhist heritage sites.

#### WHY IN NEWS?

Uttar Pradesh plans to set up an immigration office at the Kakrahwa border to ease entry for Buddhist pilgrims visiting Piprahwa from Nepal's Lumbini region.

### Kamchatka Peninsula

The Kamchatka Peninsula is a volcanic region in Russia, home to nearly **300 volcanoes, 29 of which are active**. It spans about **1,250 kilometers** and lies on the Pacific Ring of Fire. Known as the "land of fire and ice," Kamchatka features diverse landscapes, including glaciers, hot springs, and volcanic calderas. It is sparsely populated, with Petropavlovsk-Kamchatsky as its largest city. The peninsula experiences frequent seismic activity due to tectonic plate subduction. Kamchatka's volcanoes contribute to unique ecosystems and are a UNESCO World Heritage site for their geological significance.

#### WHY IN NEWS?

The Kamchatka Peninsula was the epicenter of a powerful 8.8 magnitude earthquake on July 30, 2025, which triggered the eruption of Klyuchevskoy volcano and tsunami warnings across the Pacific.

### Nhava Sheva Seaport

**Nhava Sheva Seaport**, also known as Jawaharlal Nehru Port Trust (JNPT), is the largest container port in India, located in Maharashtra near Mumbai. It handles over 50% of India's containerized cargo. Operational since 1989, it has modern container handling facilities and is connected to major rail and road networks. Nhava Sheva is a critical hub for international trade, especially for imports and exports involving Maharashtra and western India. It is equipped with advanced customs and cargo inspection facilities, enhancing security and efficiency. The port has consistently ranked among the top container ports in South Asia for throughput capacity and technological adoption.

#### WHY IN NEWS?

India has restricted imports of jute products from Bangladesh to only enter through Nhava Sheva Seaport, Maharashtra, to enforce quality control and protect domestic industry.

### Pampa River

The **Pampa River** is the third-longest river in Kerala, spanning **176 km**. It originates from the **Pulachimalai hill** in the Peermade plateau of the Western Ghats at an altitude of **5,410 feet**. The river basin covers an area of **2,235 sq km** and flows through **Pathanamthitta, Idukki, and Alappuzha districts**. It passes through **30 panchayats and one municipality, Chengannur**. The river has **14 tributaries**. It is closely linked to the **Sabarimala shrine** and hosts major religious gatherings like the **Maramon** and **Cherukolpuzha conventions**.

#### WHY IN NEWS?

The central government is considering including the Pampa River in the National River



Conservation Plan to address pollution, riverbank erosion, and waste management issues.

### **Rann of Kutch**

The **Rann of Kutch** is a vast salt marsh located in the Thar Desert in the Kutch district of Gujarat. It is divided into the Great Rann and the Little Rann, covering around 7,500 square kilometers. The area is known for its seasonal salt marsh flooding during monsoon and is home to the endangered Indian wild ass. The Rann of Kutch hosts the annual Rann Utsav, a cultural festival showcasing local crafts and traditions. It is one of the largest salt deserts in the world and plays an important role in salt production and migratory bird habitats.

#### WHY IN NEWS?

A new railway line approved by the Union Cabinet will connect the remote Rann of Kutch region with the Harappan site Dholavira, enhancing transport and tourism infrastructure in Gujarat.

### **Severo-Kurilsk**

**Severo-Kurilsk** is a town located on Paramushir Island in the Kuril Islands, Russia. It is the administrative center of the Severo-Kurilsky District. The town was originally established as a Japanese settlement before World War II and was renamed after Soviet annexation. Severo-Kurilsk is known for its vulnerability to natural disasters, especially tsunamis, due to its location in a seismically active zone. The town was devastated by a tsunami in 1952, leading to extensive reconstruction and the establishment of tsunami warning systems. It has a population of around 2,000 residents, mainly involved in fishing and maritime industries.

#### WHY IN NEWS?

Severo-Kurilsk experienced flooding and evacuations following a massive 8.8-magnitude earthquake near Kamchatka, Russia, triggering tsunami waves.

### **Subsea Cable Protection Zones**

Subsea cable protection zones are geofenced maritime areas established to safeguard critical submarine cables from damage or sabotage. Australia pioneered this concept through Schedule 3A of the Telecommunications Act 1997, imposing criminal penalties for willful cable damage. These zones enable monitoring and warning systems to detect intrusions near cable routes. Protection zones help maintain the integrity of vital digital infrastructure by preventing accidental damage from shipping or fishing activities and deterring deliberate attacks. Other countries are encouraged to adopt similar legal and technical frameworks to enhance subsea cable security and resilience.

#### WHY IN NEWS?

Protection zones are discussed as a necessary legal and technical measure to secure submarine cables, with Australia's model cited and calls for India to implement similar protections.

### **Vadhavan Port**

Vadhavan Port is a planned deep-draft greenfield port located in Palghar district,



Maharashtra. Designed to handle 250 million tonnes of cargo annually, it will be capable of berthing the world's largest container vessels. The port aims to integrate advanced logistics technologies, including hyperloop connectivity, from inception. It is intended to become one of Asia's most advanced maritime hubs, addressing congestion and capacity challenges faced by existing ports. Vadhavan Port is part of India's broader strategy to expand maritime infrastructure and enhance cargo handling efficiency on the western coastline.

#### WHY IN NEWS?

Vadhavan Port is included in Maharashtra's hyperloop project, linking it with JNPT to create a high-speed cargo corridor, enhancing the port's future-ready capabilities.

### Vembanad Lake

Vembanad Lake is the longest lake in India and the largest in the state of Kerala, spanning approximately **2033 square kilometers**. It is a **Ramsar-recognized wetland** of international importance, supporting diverse aquatic ecosystems and livelihoods for lakhs of people. The lake is integral to Kerala's backwater tourism and traditional fishing communities. It connects to the Arabian Sea via several channels and is fed by multiple rivers, including the Meenachil and Pamba. The lake's ecosystem is threatened by invasive species like water hyacinth and pollution. Vembanad is also known for its unique **Kettuvallam** houseboats used in tourism.

#### WHY IN NEWS?

Vembanad Lake faces ecological threats from invasive water hyacinth, impacting tourism, fishing, and local livelihoods in Kerala's backwaters.

### Visiri Madippu Sari

The Visiri Madippu sari is a **Geographical Indication (GI)-tagged** handwoven silk product made by the Thirubuvanam Silk Handloom Weavers Cooperative Society, which is over 70 years old. It is named after its distinctive **concertina fan-like folds**, resembling a "visiri" or fan. Around 1,001 men and 780 women weavers produce this sari, which is considered a living heritage of Tamil Nadu's handloom tradition. The sari combines traditional weaving with specific folding techniques, making it unique among Indian handwoven textiles.

#### WHY IN NEWS?

Visiri Madippu saris continue to be produced by cooperative societies but face economic challenges, prompting initiatives to sustain and promote this living heritage.

### Wallacea

Wallacea is a biogeographical region in eastern Indonesia, comprising islands such as Sulawesi, Lombok, Flores, Timor, and Sumbawa. It lies between the Asian continental shelf (Sunda) and the Australian continental shelf (Sahul). The region is characterized by a unique mix of Asian and Australasian flora and fauna due to its position as a natural boundary known as Wallace's Line. Named after naturalist Alfred Russel Wallace, Wallacea is a zone for studying species evolution and migration. It contains deep-water channels that historically limited animal and human dispersal, making it a key area for understanding



prehistoric migrations.

#### WHY IN NEWS?

New archaeological findings on Sulawesi island in Wallacea suggest humans lived there 1.5 million years ago, earlier than previously thought, challenging theories of early human migration in the region.

## Environment & Ecology

### Abscondita perplexa

*Abscondita perplexa* is a species of firefly identified in the Anamalai Tiger Reserve. It exhibits **phototactic behavior**, preferring darkness and actively avoiding blue, green, yellow, orange, pink, and red light wavelengths. White light neither attracts nor repels it. This species' larvae and adults were studied using DNA barcoding, with sequences submitted to GenBank, confirming its distinct genetic identity. It is part of a group of bioluminescent insects contributing to the rare synchronous lighting phenomenon. Its habitat is threatened by pesticide use and water pollution, factors linked to the decline in firefly populations.

#### WHY IN NEWS?

*Abscondita perplexa* was studied extensively to understand its light preferences and behavior under different light pollution conditions in ATR during a 2024-25 research project.

### Agariyas

The **Agariyas** are a traditional salt-harvesting community primarily found in Gujarat's Little Rann of Kutch and Surendranagar regions. They belong to the Kodi Thakur caste and have been extracting salt for generations from the salt flats. Their livelihood depends heavily on natural climatic variables such as sun, wind, and rain for salt brine evaporation. The land they work on is owned by the Forest Department and leased to them, often without formal land titles or crop insurance. The community coexists with local biodiversity, including wild asses and migratory birds. Climate change poses risks to their salt production and income stability.

#### WHY IN NEWS?

The Agariyas are brought into light due to their vulnerability to climate change, threatening salt production and their precarious livelihoods in Gujarat's Little Rann of Kutch and Surendranagar districts.

### Algal Hypoxia

Algal hypoxia is a condition where oxygen levels in water bodies drop due to the decomposition of excessive algae blooms. When algae die, bacteria consume oxygen to break down organic matter, leading to **oxygen depletion**. This phenomenon harms aquatic life dependent on dissolved oxygen, causing fish kills and ecosystem imbalances. It is commonly linked to nutrient pollution (phosphorus and nitrogen) and warming temperatures that promote algal growth. Hypoxia zones, or "dead zones," have been documented worldwide in freshwater and marine environments. It disrupts food chains



and reduces biodiversity in affected waters.

#### WHY IN NEWS?

Concerns about algal hypoxia arose with the Sea of Galilee's red algae bloom in August 2025, as officials monitor potential ecological damage.

### **Anamalai Tiger Reserve (ATR)**

Anamalai Tiger Reserve, located in Tamil Nadu, covers over **958 square kilometers** of tropical forests and is part of the Western Ghats biodiversity hotspot. It is home to tigers, elephants, and many endemic species. The reserve includes multiple forest ranges such as Ulandy, where the Kozhikamuthi elephant camp is situated. ATR was declared a tiger reserve in 2008 and plays a critical role in wildlife conservation and habitat connectivity. It supports tribal communities including the Malasar, who have coexisted with the forest ecosystem for generations, contributing to traditional forest management practices.

#### WHY IN NEWS?

The Anamalai Tiger Reserve is the location of the new Mahout Village at Kozhikamuthi elephant camp, denoting ongoing conservation and community welfare efforts in the region.

### **Antimicrobial Resistance Crisis**

Antimicrobial resistance (AMR) occurs when bacteria evolve mechanisms to survive antibiotic treatments. Overuse and misuse of antibiotics accelerate this process. AMR causes over one million deaths annually worldwide and threatens global health security. Resistant strains like MRSA and drug-resistant gonorrhoea are increasingly difficult to treat. Lack of new antibiotics for decades has worsened the crisis. AMR reduces the effectiveness of standard treatments, complicates surgeries, and increases healthcare costs. Global efforts include antibiotic stewardship, new drug development, and surveillance programs to contain the spread of resistance and safeguard existing antibiotics.

#### WHY IN NEWS?

The discovery of AI-designed antibiotics offers promise against AMR, a critical global health issue causing millions of deaths and undermining current treatment efficacy.

### **Aravalli Ridge**

The **Aravalli Ridge** is one of the oldest mountain ranges in India, spanning Haryana, Rajasthan, and Delhi. It is ecologically sensitive, hosting dry deciduous forests, thorn scrub, and unique biodiversity adapted to low rainfall (300-600 mm annually) and rocky terrain. The ridge acts as a natural barrier against desertification and supports groundwater recharge. Despite its ecological importance, parts of it lack formal forest classification, making them vulnerable to mining and development. The ridge's vegetation has evolved over millions of years to survive harsh conditions, with stunted and thorny species predominant.

#### WHY IN NEWS?

Haryana's new forest definition excludes much of the Aravalli ridge due to strict canopy density and area thresholds, raising environmental concerns.



## Arthrobacter Bacteria

Arthrobacter is a genus of soil bacteria capable of degrading various environmental pollutants, including polystyrene plastics. These bacteria are resilient, surviving in harsh conditions by switching between cocci and rod shapes. Arthrobacter species produce enzymes that break down polystyrene's polymer chains into smaller molecules, facilitating biodegradation. They have been isolated from compost and peat bogs, environments rich in natural polymers. Their ability to degrade polystyrene by nearly 19.5% in 28 days without plastic pretreatment is notable. Arthrobacter also participates in nitrogen cycling and can metabolize pesticides and hydrocarbons, making them important in environmental cleanup.

### WHY IN NEWS?

Arthrobacter bacteria were discovered to degrade polystyrene effectively in natural, unpolluted environments, offering new avenues for microbial plastic waste management without chemical pretreatment.

## Article 51A(g) of the Constitution of India

Article 51A(g) is a fundamental duty imposed on Indian citizens to have compassion for living creatures. Introduced by the 42nd Amendment in 1976, it forms part of the Directive Principles of State Policy, emphasizing ethical responsibilities alongside legal rights. This article guides laws and policies related to animal welfare and environmental protection. It has been cited in legal cases to uphold animal rights and prevent cruelty, reflecting India's cultural and constitutional commitment to humane treatment of animals.

### WHY IN NEWS?

The Supreme Court's initial order to incarcerate street dogs was challenged based on Article 51A(g), which mandates compassion toward living beings, denoting the legal and moral conflict in the directive.

## Bhakra Beas Management Board (BBMB)

The **Bhakra Beas Management Board (BBMB)** is a statutory body responsible for the management of the Bhakra and Pong dams and their associated infrastructure in northern India. Established in 1966, BBMB oversees water distribution for irrigation, hydroelectric power generation, and flood control across Punjab, Haryana, Rajasthan, and Himachal Pradesh. It manages the storage and release of water from these dams, balancing agricultural needs and flood prevention. BBMB operates several powerhouses generating thousands of megawatts of electricity. It also plays a critical role in disaster management during monsoon seasons when river inflows surge.

### WHY IN NEWS?

BBMB officials confirmed they would not allow the Pong Dam water level to exceed 1,410 feet to prevent structural damage, amid rising water levels due to heavy rains.

## Biochar

Biochar is a charcoal-like substance produced by pyrolyzing agricultural residues and organic municipal solid waste under limited oxygen. It contains **highly stable carbon** that



can persist in soils for 100 to 1,000 years, acting as a long-term carbon sink. Application of biochar improves soil water retention, especially in semi-arid regions, and can reduce nitrous oxide emissions by 30-50%. Byproducts include syngas and bio-oil, which can be used for energy generation and fuel replacement. Biochar enhances soil organic carbon, helps restore degraded soils, and can be used as an additive in concrete to increase strength and heat resistance.

#### WHY IN NEWS?

Biochar is gaining attention as a key technology for India's upcoming carbon market launch in 2026, with potential to remove 0.1 gigatonnes of CO<sub>2</sub> annually and create rural employment.

### Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand (**BOD**) is a metric measuring the amount of oxygen microorganisms consume to decompose organic matter in water. It is expressed in milligrams of oxygen per liter (**mg/L**). Higher BOD values indicate more organic pollution, leading to oxygen depletion harmful to aquatic life. BOD testing typically spans five days at 20°C, known as BOD<sub>5</sub>. It is a critical parameter in assessing water quality and pollution levels. BOD is widely used in environmental monitoring, wastewater treatment, and regulatory compliance to evaluate the effectiveness of pollution control measures.

#### WHY IN NEWS?

BOD was used as the key indicator in the Union government's report on polluted river stretches in Gujarat, denoting the Sabarmati river's critical pollution levels.

### Biogenic CO<sub>2</sub>

Biogenic CO<sub>2</sub> refers to carbon dioxide released from the combustion of bio-based fuels like ethanol, derived from plants that recently absorbed atmospheric CO<sub>2</sub> during their growth cycle. Unlike fossil CO<sub>2</sub>, which adds ancient carbon to the atmosphere, biogenic CO<sub>2</sub> is part of a short-term carbon cycle, making it carbon-neutral if crops are grown sustainably. This distinction is recognized globally in carbon accounting but is yet to be fully integrated into India's emissions regulations. Indian Oil Corporation Limited (IOCL) measured biogenic carbon in ethanol blends using carbon isotopes C<sub>14</sub> (bio-based) and C<sub>12</sub> (fossil-based), finding biogenic shares in E20 to E30 blends.

#### WHY IN NEWS?

The Government of India is considering whether to include biogenic CO<sub>2</sub> in emissions accounting under CAFE norms, following IOCL's findings on ethanol blends, affecting penalties and incentives for automakers using ethanol-compatible vehicles.

### Biota Overlap

Biota overlap refers to the proportion of species within a geographical area that are **non-characteristic**, meaning they also occur in neighboring biogeographical regions. It measures the degree of species mixing across regional boundaries and helps distinguish core communities from transition zones. High biota overlap indicates porous boundaries with widespread generalists, while low overlap marks distinct, endemic-rich hotspots. This



concept aids in understanding species distribution patterns, ecological connectivity, and the impact of environmental filters on biodiversity. Biota overlap is critical for conservation planning, as it marks regions where species assemblages are unique or where cross-region species exchange occurs.

#### WHY IN NEWS?

The study quantified biota overlap to analyze biodiversity layers within biogeographical regions, revealing how species distributions transition from endemic cores to mixed margins globally.

### Blue Carbon Ecosystems

Blue carbon ecosystems refer to coastal and marine habitats like mangroves, salt marshes, and seagrasses that sequester and store large amounts of carbon in biomass and sediments. These ecosystems play a critical role in mitigating climate change by capturing atmospheric CO<sub>2</sub>. Mangroves alone contribute to carbon sequestration, with valuations reaching ₹462 million per year in the Sundarbans. Blue carbon ecosystems also provide vital ecosystem services such as coastal protection, fisheries support, and biodiversity habitat. Despite their importance, these ecosystems are often undervalued in economic and policy frameworks, leading to insufficient conservation efforts.

#### WHY IN NEWS?

Blue carbon ecosystems are emphasized for their role in climate resilience and economic value, denoting the need for better integration in policy and business strategies for sustainable coastal management.

### Carbon Border Adjustment Mechanism (CBAM)

The **Carbon Border Adjustment Mechanism (CBAM)** is a policy initiated by the European Union to impose carbon import duties on goods like steel, aluminium, and cement that have high embedded carbon emissions. It will take full effect from **January 2026**. CBAM aims to prevent carbon leakage by ensuring imported products meet EU carbon pricing standards. Exporters must demonstrate credible decarbonization efforts or face penalties. The mechanism influences global trade dynamics and encourages countries without domestic carbon pricing to implement their own regimes. It is a pioneering tool linking environmental policy with international commerce.

#### WHY IN NEWS?

CBAM is brought into light as it is set to impact Indian exporters of carbon-intensive goods, posing compliance challenges and competitiveness threats in global markets starting January 2026.

### Carbon Credit Registries

**Carbon Credit Registries** are centralized databases that track the issuance, transfer, and retirement of carbon credits. They ensure transparency and prevent double counting by recording every transaction involving carbon credits. Registries hold credits in electronic accounts, much like a bank ledger, and mark credits as “retired” once used to offset emissions. Many registries also maintain buffer pools, withholding a percentage of credits



to protect against risks like project failure or reversals due to natural disasters. Examples include Verra Registry and Gold Standard Registry. They play a critical role in maintaining the integrity and trustworthiness of carbon markets.

#### WHY IN NEWS?

Registries are brought into light for their role in withholding 20% of credits as a buffer against losses from events like forest fires, though recent climate disasters have tested these safeguards.

### **Carbon Credit Trading Scheme**

The **Carbon Credit Trading Scheme** is a market-based approach to incentivize emission reductions by allowing entities to buy and sell carbon credits. Each credit represents one metric ton of CO<sub>2</sub> equivalent reduced or removed from the atmosphere. The scheme aims to provide flexibility for industries to meet regulatory emission targets cost-effectively. India's scheme is designed to integrate with global carbon markets and domestic climate policies. It involves verification, certification, and registry systems to ensure transparency and prevent fraud. The scheme supports sustainable industrial practices and funds green technology adoption. It is expected to be fully operational soon, playing a key role in India's climate finance ecosystem.

#### WHY IN NEWS?

India's draft Climate Finance Taxonomy is being developed alongside the operationalization of the Carbon Credit Trading Scheme, denoting the need for clear definitions and regulatory coherence between these climate finance tools.

### **Central Ground Water Board (CGWB)**

The Central Ground Water Board (CGWB) is an Government of India agency under the Ministry of Jal Shakti responsible for groundwater resource assessment, monitoring, and management. Established in 1970, it conducts nationwide groundwater quality surveys and publishes annual reports. CGWB operates a network of observation wells and uses remote sensing for groundwater mapping. It lacks statutory authority for enforcement, limiting its regulatory impact. The board collaborates with state agencies but faces challenges due to institutional fragmentation. CGWB data has revealed widespread contamination with nitrates, fluoride, arsenic, and uranium, denoting the growing groundwater pollution crisis in India.

#### WHY IN NEWS?

The 2024 Annual Groundwater Quality Report by CGWB revealed alarming contamination levels in over 440 districts, exposing a national public health emergency linked to groundwater pollution.

### **Central Zoo Authority (CZA)**

The Central Zoo Authority (CZA) was constituted in 1992 under the Wild Life (Protection) Act, 1972. It is a statutory body under the Union Ministry of Environment, Forest and Climate Change. Its mandate includes identifying endangered species for captive breeding and assigning responsibility to zoos. In 2022, the Act was amended to redefine zoo to



include conservation breeding centres, circuses, and rescue centres, bringing these under regulatory oversight. CZA oversees conservation breeding programs across India and allocates funds to zoos for these initiatives. Between 2006 and 2021, CZA allocated approximately Rs 28.94 crore for breeding programs.

#### WHY IN NEWS?

CZA admitted to misidentification of Alpine musk deer in conservation breeding programs, denoting issues in captive breeding efforts and regulatory challenges in Indian zoos.

### **Char Dham Road Project**

The **Char Dham Road Project** aims to improve connectivity to the four sacred Hindu pilgrimage sites in Uttarakhand – Yamunotri, Gangotri, Kedarnath, and Badrinath. Initiated by the Government of India, it involves widening roads to ensure all-weather access. The project faces environmental challenges due to its location in the fragile Bhagirathi eco-sensitive zone, part of the greater Himalayan ecosystem. The terrain is prone to landslides, slope instability, and flash floods. Critics show risks of ecological damage and increased disaster vulnerability. The project includes constructing tunnels, bridges, and slope stabilization measures, but its execution remains controversial.

#### WHY IN NEWS?

The project is under scrutiny after experts warned that the current road widening plan could trigger disasters in the Bhagirathi eco-sensitive zone, following a flood event in Dharali linked to unstable slopes in the area.

### **Choolannur Peafowl Sanctuary**

The **Choolannur Peafowl Sanctuary** is located in Palakkad district, Kerala, and primarily dedicated to the conservation of Indian peafowl. It is a lesser-known sanctuary compared to others in Kerala, covering a small forest area rich in biodiversity. Besides peafowl, it hosts a variety of nocturnal insects and small mammals. The sanctuary plays a critical role in protecting endemic species and serves as a field site for ecological research. Unlike larger sanctuaries, it is less frequented by tourists, which helps maintain a relatively undisturbed habitat for wildlife.

#### WHY IN NEWS?

The sanctuary was the site of the first recording of the rare nocturnal moth genus *Antitrisuloides* in the Western Ghats, marking biodiversity discovery.

### **Cirques (Hanging Glaciers)**

Cirques are bowl-shaped, hollowed depressions found on mountain slopes, formed by glacial erosion. In the Himalayas, they are often referred to as hanging glaciers because they sit above valley floors, containing accumulated ice, rocks, and debris. These formations are remnants of past glacial activity and serve as sources for small streams that descend steep slopes. The streams emerging from cirques can cause sudden floods during intense monsoon rains or rapid snowmelt, carrying avalanches, ice, and glacial moraines. Their instability is heightened by rising temperatures, making them contributors to natural disasters in high-altitude Himalayan valleys.



## WHY IN NEWS?

Avalanches and floods from cirques contributed to the triple disaster affecting the upper Bhagirathi valley near Dharali and Harshil on August 5, 2025.

**Climate TRACE**

Climate TRACE is a coalition formed by AI experts, data scientists, NGOs, and academic institutions aimed at independently monitoring global greenhouse gas emissions. It utilizes satellite imagery, artificial intelligence, and machine learning to provide near real-time emissions data. Founding members include **Carbon Yield, CTrees, Duke University's Nicholas Institute, Global Energy Monitor, Johns Hopkins University Applied Physics Lab, TransitionZero**, and former US Vice President Al Gore. Climate TRACE offers transparency by verifying emissions from fossil fuel operations, manufacturing, and power sectors worldwide, helping policymakers and activists track climate progress or setbacks accurately. Its data is publicly accessible to encourage accountability.

## WHY IN NEWS?

Climate TRACE released new data in August 2025 showing a global rise in greenhouse gas emissions in the first half of 2025, despite declines in some power sectors, denoting ongoing challenges in fossil fuel reduction.

**Climate Vulnerability Index Framework**

The **Climate Vulnerability Index Framework** is a quantitative tool developed to assess the climate vulnerability of communities dependent on natural resources. It integrates exposure (e.g., flood frequency, unexpected rain), sensitivity (e.g., income dependence on salt, heat illness), and adaptive capacity (e.g., access to training, savings, solar pumps) into a composite index. The framework uses data normalization, principal component analysis for weighting indicators, and K-means clustering to categorize households into low, medium, and high vulnerability groups. It enables targeted climate policy planning and grassroots interventions by denoting households most at risk from climate variability.

## WHY IN NEWS?

The framework was recently applied to 499 households in Surendranagar district to measure and map the climate vulnerability of salt-harvesting communities, revealing widespread moderate to high risk.

**Cloudburst**

A **cloudburst** is a meteorological event defined by the India Meteorological Department as rainfall exceeding 100 mm in one hour over an area of approximately 100 square kilometers. It is characterized by sudden, intense, and localized precipitation that can cause flash floods and landslides in hilly terrain. Cloudbursts are common in the Himalayan region during monsoon season but require specific rainfall intensity and area coverage to qualify. Despite heavy rain in Uttarakhand, the rainfall in Uttarkashi during the recent event did not meet cloudburst criteria, with recorded rain well below the threshold.



## WHY IN NEWS?

The recent flash floods in Uttarkashi were initially suspected to be caused by a cloudburst, but IMD data confirmed rainfall was below cloudburst intensity.

**Common but Differentiated Responsibilities**

The principle of **common but differentiated responsibilities (CBDR)** is a foundational concept in international environmental law established in the UNFCCC. It recognizes that while all countries share responsibility for addressing global environmental degradation, developed countries bear a greater burden due to their historical emissions and greater financial and technological capabilities. CBDR underpins climate negotiations by justifying differentiated commitments between developed (Annex 1) and developing countries. The principle has been contested recently as developed countries push for universal voluntary commitments, diluting its original intent and shifting more responsibility onto developing nations.

## WHY IN NEWS?

CBDR is a key point of contention at COP 30, with developing countries seeking to reinforce it amid pressures for universal voluntary climate commitments.

**Community Biomass Plants**

Community biomass plants are small-scale energy facilities designed to convert agricultural and organic waste into clean energy, typically biogas or electricity. These plants help reduce open burning of biomass like crop residues and dung, a major source of air pollution in regions like Delhi-NCR. They often operate at village or neighborhood levels, providing local clean cooking fuel and power while managing waste sustainably. Subsidies and policy support encourage their adoption to transition away from traditional, polluting cooking methods. The plants contribute to reducing particulate emissions, improving rural energy access, and lowering health risks associated with indoor and outdoor air pollution.

## WHY IN NEWS?

The article stresses enforcing subsidies and expanding community biomass plants in Delhi-NCR to curb biomass burning, the largest contributor to the city's air pollution.

**Corporate Average Fuel Efficiency (CAFE) Norms**

**CAFE norms** are regulatory standards that set average fuel efficiency targets automakers must meet across their fleets. Introduced in India in phases, the second phase started in 2022-23 with stricter limits. Penalties are levied per vehicle for non-compliance, with Rs 25,000 fines for up to 0.2 liters/100 km excess fuel consumption and Rs 50,000 for higher violations. Compliance is tested in accredited labs under simulated driving conditions. The norms aim to reduce fuel consumption and emissions, aligning with global environmental goals. They cover all passenger vehicle models sold by manufacturers annually.

## WHY IN NEWS?

The Ministry of Power released draft rules empowering BEE to enforce compliance and penalize automakers failing to meet the second phase of CAFE norms.



### Crown-of-Thorns Starfish

The **crown-of-thorns starfish** (*Acanthaster planci*) is a venomous marine predator that primarily feeds on hard corals, especially *Acropora* species. Its population outbreaks can cause extensive coral reef damage. Native to the Indo-Pacific region, it has up to 21 arms covered in sharp, venomous spines that deter predators. Starfish larvae can survive for weeks in plankton, facilitating wide dispersal. Natural predators include the giant triton snail and some fish species. Outbreaks are often linked to nutrient runoff and decreased predator numbers. Its feeding can reduce coral cover by up to 90% in affected areas, severely impacting reef ecosystems.

#### WHY IN NEWS?

Outbreaks of crown-of-thorns starfish contributed to the 2024-2025 coral decline on the Great Barrier Reef, exacerbating damage caused by heat stress and cyclones.

### DAMINI Mobile Application

DAMINI is a mobile application designed to provide real-time lightning strike alerts to users in India. It sends notifications to panchayat-appointed safety coordinators and local communities in high-risk zones such as hills, water bodies, and open agricultural fields. Developed in collaboration with meteorological and disaster management agencies, DAMINI uses radar and satellite data for timely warnings. The app aims to bridge the gap between advanced forecasting and last-mile communication, helping reduce lightning-related deaths by enabling prompt preventive action. It complements other awareness campaigns and infrastructure improvements like smart poles in rural areas.

#### WHY IN NEWS?

DAMINI is mentioned as part of India's lightning mitigation efforts, providing critical early warnings during the surge in lightning-related incidents in 2024-2025.

### Debrigarh Wildlife Sanctuary

Debrigarh Wildlife Sanctuary is located in Bargarh district, Odisha. It covers an area of approximately **346 square kilometers** and is known for its diverse flora and fauna, including several endangered species. The sanctuary is part of the **Eastern Highlands moist deciduous forests** eco-region. It was established in 1985 and is home to species like the Indian bison, wild boar, and a variety of birds. The sanctuary has a **reservoir created by the Hirakud dam**, which supports aquatic life and attracts migratory birds. It has not previously been a tiger habitat but is now being considered for tiger introduction.

#### WHY IN NEWS?

Odisha government plans to convert Debrigarh Wildlife Sanctuary into a tiger reserve and introduce tigers, following technical approval from the National Tiger Conservation Authority (NTCA).

### Deep Ocean Mission (DOM)

India's **Deep Ocean Mission (DOM)** is a multi-disciplinary initiative with a budget of ₹4,077 crores over five years, focusing on ocean exploration and resource development. It includes six verticals – manned submersibles, deep-sea mining, underwater robotics,



climate advisory services, biodiversity conservation, and ocean energy and freshwater extraction. DOM supports scientific infrastructure development, strategic marine resource access, and international seabed governance. It also promotes underwater engineering innovations and ocean literacy to boost the blue economy. The mission integrates advanced marine biology research and deep ocean surveys using specialized ships and technologies.

#### WHY IN NEWS?

The DOM is progressing with technology development and scientific exploration, including the MATSYA 6000 submersible and deep-sea resource initiatives, enhancing India's oceanic research and economic capabilities.

### Deepwater Seagrass Habitats

Deepwater seagrass habitats are underwater meadows found at depths greater than typical seagrass beds, sometimes exceeding 20 meters. These ecosystems provide crucial shelter and feeding grounds for numerous marine species. First mapped in 2016 via satellite tracking of green turtles, these meadows are more extensive and deeper than previously understood. They support over 110 fish species, including some sharks, and contribute to carbon sequestration and coastal protection. Despite their ecological importance, deepwater seagrass beds remain understudied and vulnerable to threats such as fishing, pollution, and climate change.

#### WHY IN NEWS?

The discovery of sliteye sharks using deepwater seagrass habitats in the Great Chagos Bank puts stress on their importance for marine biodiversity and conservation efforts.

### Deglaciation Rate

**Deglaciation** refers to the process of glacier ice melting and retreating. In Uttarkashi, accelerated deglaciation has been observed due to increasing temperatures and changing precipitation patterns linked to climate change. This leads to a reduction in ice mass, affecting river flow and increasing the risk of landslides and flash floods. The retreat exposes loose moraine and soil, which destabilizes slopes. Deglaciation also contributes to altered hydrology by increasing sediment load in rivers and causing more frequent natural hazards in mountainous regions. Uttarkashi's glaciers are particularly sensitive due to their high altitude and climatic conditions.

#### WHY IN NEWS?

Deglaciation in Uttarkashi has intensified the risk of flash floods and mudslides following heavy rainfall, contributing to the recent disaster in the region.

### Dharali Village

Dharali is a Himalayan settlement located at approximately **2550 meters elevation** in the Uttarkashi district of Uttarakhand. The village lies within the natural flood zone of the Bhagirathi river and has expanded dangerously close to the river channel over the past two decades. This proximity makes it highly vulnerable to floods caused by cloud bursts and flash floods, which are common in the region. The village's location in a **high-risk**



**geological setting** with unconsolidated rock debris and steep gradients increases disaster susceptibility. Dharali was severely affected in the 2025 Uttarakhand tragedy, with many buildings swept away and over a hundred people missing.

WHY IN NEWS?

Dharali village was devastated by a flash flood following a cloud burst in 2025, denoting ongoing issues with unregulated construction in vulnerable Himalayan flood zones.

### **Dibang Valley**

Dibang Valley is a district in Arunachal Pradesh, known for its rich biodiversity and rugged terrain. It hosts a variety of ecosystems ranging from subtropical pine forests to alpine scrub. The valley is part of the Eastern Himalayas biodiversity hotspot and supports several Schedule-I protected species like the red panda, clouded leopard, and Asiatic black bear. The Dibang River forms after the confluence of the Dri and Tangon Rivers near Etalin village. The region is sparsely populated and remains ecologically sensitive due to its unique flora and fauna.

WHY IN NEWS?

The Etalin hydroelectric project is located in Arunachal Pradesh's Dibang Valley, where environmental concerns arise from forest diversion and potential impacts on protected wildlife species.

### **Dibru-Saikhowa National Park**

Dibru-Saikhowa National Park, located in eastern Assam, covers approximately 425 sq. km. It is an island-like formation between the Brahmaputra and Dibru rivers. Established as a national park in 1999, it was earlier a wildlife sanctuary formed by merging Dibru and Saikhowa Reserve Forests in 1995. It was declared a UNESCO Biosphere Reserve in 1997. The park is the only habitat of feral horses in India, descendants of military horses abandoned during World War II. It has diverse ecosystems including grasslands, semi-evergreen forests, and wetlands, supporting several endemic and threatened species.

WHY IN NEWS?

Recent studies show ecosystem changes due to native and invasive plant species affecting grasslands and biodiversity in Dibru-Saikhowa National Park, raising concerns for habitat loss and species survival.

### **E20 Petrol**

E20 petrol is a fuel blend containing **20% ethanol** and **80% petrol**. India achieved its target to blend 20% ethanol five years ahead of schedule under the National Policy on Biofuels. Vehicles sold in India from 2023 come with **E20 compatibility stickers**. Ethanol blending rose from **1.5% in 2014 to 20% in 2025**. Ethanol is mainly derived from sugarcane, with about **9% of sugar output used for ethanol**. The government claims benefits include **reduced greenhouse gas emissions, boosted farmer incomes, and lower oil imports**. However, concerns about engine efficiency and fuel economy remain.

WHY IN NEWS?

India's rollout of E20 petrol has sparked controversy among vehicle owners due to concerns over mileage drops and maintenance costs, despite government efforts to



promote ethanol blending and environmental benefits.

### **Eco-Development Committees (EDCs)**

Eco-Development Committees (EDCs) are community-based groups formed to promote sustainable management and conservation of natural resources, especially forests and mangroves. They involve local stakeholders in decision-making, ensuring equitable benefit-sharing and stewardship. EDCs often collaborate with government agencies to implement conservation projects and alternative livelihood programs like eco-tourism and beekeeping. Their structure encourages local ownership and responsibility, reducing conflicts and enhancing biodiversity protection. EDCs have been instrumental in integrating traditional ecological knowledge with modern conservation methods, leading to improved natural resource management in rural and urban fringe areas. They serve as a model for participatory environmental governance.

#### WHY IN NEWS?

EDCs are brought into light as a model for community-led mangrove conservation and sustainable livelihoods, especially in urban areas like Mumbai and Chennai, to restore degraded mangrove ecosystems and support coastal communities.

### **Energy Atmanirbharta**

Energy Atmanirbharta is an Indian policy concept focused on achieving energy self-reliance. It aims to reduce dependence on fossil fuels by promoting renewable energy and improving energy efficiency. The initiative emphasizes simplifying regulations, digitizing approvals, and streamlining land acquisition to accelerate renewable energy deployment. It also targets reducing the economic growth link with energy demand and environmental degradation. The concept aligns with India's commitment to **net zero carbon emissions by 2070** and supports a dual-track energy strategy balancing fossil fuels and renewables. It faces challenges from legacy vested interests resisting regulatory reforms.

#### WHY IN NEWS?

Energy Atmanirbharta was referenced as the broader goal behind India's efforts to reform energy regulations and enhance renewable energy capacity and infrastructure.

### **Extended Producer Responsibility (EPR)**

Extended Producer Responsibility (EPR) is an environmental policy approach where producers are given responsibility for the treatment or disposal of post-consumer products. In India, EPR mandates producers to finance the collection and recycling of battery waste, ensuring a closed-loop battery value chain. The system relies on recyclers receiving EPR certificates as proof of compliance, which producers must buy at a minimum price known as the EPR floor price. This price covers costs such as infrastructure, labor, technology, and safe disposal methods. EPR aims to reduce environmental harm and promote sustainable recycling by making producers accountable for the entire product lifecycle.

#### WHY IN NEWS?

India's Battery Waste Management Rules (BWMR) introduced EPR to regulate lithium



battery recycling, but the current EPR floor price is too low, threatening sustainable recycling and encouraging informal, hazardous practices.

### Farm Bunds

Farm bunds are raised embankments or ridges built around agricultural fields to prevent soil erosion and retain water. In Odisha, palmyra palms are commonly planted on these bunds, providing multiple benefits – they act as lightning conductors, protect farmers, and offer food for elephants during scarce periods. Bund planting helps optimize unused land without compromising crop cultivation. Bunds also serve as natural demarcations between agricultural and forest lands, aiding in managing land use and reducing human-wildlife conflict. Their role in integrating agriculture with ecological conservation is increasingly recognized in rural Indian farming systems.

#### WHY IN NEWS?

Palmyra palms planted on farm bunds in Odisha are part of a strategic effort to reduce lightning deaths and supply elephant food, contributing to conflict mitigation and environmental protection.

### Fish Hatchery Production

Fish Hatchery Production involves breeding and rearing fish larvae and juveniles in controlled environments to support aquaculture and fisheries. Hatcheries improve fish stock availability, reduce pressure on wild populations, and enhance productivity. Techniques include induced spawning, larval rearing, and nursery management. Hatchery operations require water quality control, disease management, and feed optimization. Hatchery-produced fish seed supports cage culture, pond farming, and restocking programs. This method is vital for sustainable fisheries, especially for species with declining natural populations. Hatchery technology varies by species and region and is a skill-intensive process contributing to rural livelihoods and food security.

#### WHY IN NEWS?

Fish Hatchery Production is one of the specialized skills taught to minority candidates in Kerala under the PM VIKAS fisheries training project.

### Fly Ash

Fly ash is a fine particulate byproduct from coal combustion in thermal power plants. It contains **silica, heavy metals like cadmium and lead**, and other toxic substances. Improper disposal leads to contamination of water bodies, soil infertility, and biodiversity loss. Fly ash can cause respiratory diseases including silicosis and neurological disorders. Ash dyke breaches have destroyed agricultural lands and fisheries by releasing large quantities into nearby ecosystems. In Tamil Nadu's Ennore region, fly ash clogged rivers and floodplains, increasing flood risks. Managing fly ash involves containment, reuse in construction, and strict environmental monitoring to prevent health hazards and ecological damage.

#### WHY IN NEWS?

Fly ash pollution and its health and environmental impacts were central to cases discussed



in the report, with Ennore's thermal plant cited for pollution and fly ash mismanagement.

### **Forest Rights Act (FRA)**

The **Forest Rights Act, 2006** recognizes the rights of forest-dwelling communities over forest land and resources in India. It mandates verification of claims through documentary and scientific evidence, including satellite imagery, alongside oral testimonies. The Act aims to balance forest conservation with tribal rights but has faced misuse, leading to unauthorized deforestation. Claims are processed by District Level Committees (DLCs). The Act requires adherence to Rule 13(1) for evidence and Rule 11(1)(a) for claim forms. Misapplication has resulted in large-scale forest land regularization before elections, undermining forest conservation efforts. It remains a key legal framework for tribal land rights in India.

#### WHY IN NEWS?

In Telangana, misuse of FRA led to approval of lakhs of acres of forest land claims before 2023 Assembly elections, causing deforestation and legal challenges over forest land rights and conservation.

### **Framework Agreement (IBCA)**

The **Framework Agreement** is a formal document signed by countries joining the International Big Cat Alliance (IBCA). It outlines the commitment to collaborative conservation, data sharing, capacity building, and resource mobilization for protecting big cats. The agreement establishes a governance structure for cooperation among member states and agencies. It promotes ecological security by encouraging joint action plans, monitoring, and habitat preservation. Signing the Framework Agreement is a prerequisite for membership in the IBCA, symbolizing a country's pledge to contribute actively to the alliance's goals and benefit from shared expertise and funding opportunities.

#### WHY IN NEWS?

Nepal's official signing of the IBCA Framework Agreement on August 24, 2025, marked its formal entry into the alliance, reinforcing its role in international big cat conservation.

### **Gairans and Sacred Groves**

Gairans and Sacred Groves are patches of forest or natural vegetation protected by traditional community beliefs and customs, often considered sacred or spiritually in various Indian regions. These areas are conserved through religious taboos and community enforcement rather than formal legal protection. They serve as biodiversity hotspots, preserving rare flora and fauna, and play a role in maintaining ecological balance. Sacred Groves vary in size and are often linked to local deities or ancestral spirits. Their protection is community-led, with restrictions on resource extraction and land use, contributing to conservation outside government-managed forests.

#### WHY IN NEWS?

Gairans and Sacred Groves are mentioned as customary common forest lands that fulfill CFRR criteria but have been overlooked in recent forest rights recognition efforts, indicating a need for policy revision.



## Gangotri Glacier System (GGS)

The Gangotri Glacier System is one of the largest glaciers in the central Himalayas and a primary source of the Ganga River. It spans approximately 30 kilometers in length and covers an area of about 425 square kilometers. The glacier feeds the Bhagirathi River, which later joins the Alaknanda to form the Ganga. GGS has been retreating at an average rate of 46 cm per year due to rising temperatures. It is characterized by a complex hydrological system where snowmelt contributes around 64% of the water flow, followed by glacier melt and rainfall-runoff. The glacier's snout has been steadily receding since the 1980s.

### WHY IN NEWS?

A recent study by IIT Indore and international collaborators brought into light the impact of climate change on the GGS, showing reduced snowmelt and altered hydrological flow patterns over four decades.

## Gaur (*Bos gaurus*)

The Gaur is the largest extant wild bovine, native to South and Southeast Asia. It plays a critical ecological role by shaping vegetation dynamics and serving as prey for apex predators like tigers and leopards. In PTR, the population has dropped from 150 in the 1970s to 68 currently. The population has a female-biased sex ratio of 1:1.32, favorable for breeding, but low juvenile numbers indicate poor recruitment. Gaur are vulnerable to diseases such as foot and mouth disease, especially due to sharing pasture with livestock. Genetic bottlenecks from habitat fragmentation threaten their long-term viability.

### WHY IN NEWS?

The Gaur population decline in PTR has prompted a detailed ecology and recovery plan, including vaccination drives and plans to introduce new individuals from Kanha Tiger Reserve to prevent inbreeding.

## Glacial Lake Outburst

A **Glacial Lake Outburst Flood (GLOF)** occurs when a lake formed by melting glaciers suddenly breaches its natural dam, releasing massive water volumes downstream. These events are triggered by factors like heavy rainfall, ice or rock avalanches, or seismic activity. Himalayan regions, including Uttarakhand and Himachal Pradesh, are particularly vulnerable due to rapidly retreating glaciers and unstable moraine dams. GLOFs can cause flash floods, landslides, and widespread destruction to villages and infrastructure. Monitoring involves satellite imagery and ground surveys. Early warning systems remain limited, making community preparedness crucial in high-risk zones. GLOFs are increasing with climate change-induced glacier melt.

### WHY IN NEWS?

Dharali village in the Himalayas was devastated by a flood in August 2025, believed to be caused by a glacial lake outburst, denoting growing risks linked to climate change and glacier retreat.



## Glanders

Glanders is a contagious and often fatal disease caused by the bacterium **Burkholderia mallei**. It primarily affects equines like horses, mules, and donkeys but can also infect other animals and humans. The disease manifests as nodular lesions in the respiratory tract and skin ulcers. It is classified as a **notifiable disease under the Prevention and Control of Infectious and Contagious Diseases in Animals (PCICDA) Act, 2009** in India. Glanders has no effective vaccine, making surveillance and quarantine critical for control. Historically, it was used as a biological weapon during World War I and II.

### WHY IN NEWS?

The Revised National Action Plan on Glanders was issued to enhance surveillance, control, and eradication measures for this disease in India, revising the infected and surveillance zones and strengthening quarantine protocols.

## Great Indian Bustard

The **Great Indian Bustard** (*Ardeotis nigriceps*) is a critically endangered bird native to the Indian subcontinent, primarily found in the Thar Desert and parts of Rajasthan. It is one of the heaviest flying birds in India, weighing up to 15 kg. The species prefers open grassland and scrubland habitats. Major threats include habitat loss, hunting, and collisions with power infrastructure such as wind turbines. Conservation efforts include protected areas like the Desert National Park and captive breeding programs. The bird is culturally and is the state bird of Rajasthan. Its population is estimated at fewer than 200 individuals in the wild.

### WHY IN NEWS?

The Great Indian Bustard is brought into light due to high mortality rates near wind farms in the Thar Desert, raising concerns about the impact of renewable energy infrastructure on this critically endangered species.

## Greater Annamites Ecoregion

The **Greater Annamites ecoregion** spans parts of central Vietnam and Laos, characterized by dense tropical forests and high biodiversity. It is home to many endemic and threatened species, including mammals and birds not found elsewhere. The region faces severe threats from **hunting snares**, habitat loss, and illegal logging. Conservation efforts focus on protecting species like the silver-backed chevrotain and reducing poaching. Local communities play a vital role by providing ecological knowledge and assisting in anti-poaching patrols. The ecoregion is a priority for international wildlife conservation organizations.

### WHY IN NEWS?

The Greater Annamites ecoregion is brought into light due to its role as habitat for the rediscovered silver-backed chevrotain and the ongoing conservation efforts to reduce hunting snares threatening multiple species.

## Greater One-Horned Rhino

The greater one-horned rhino (*Rhinoceros unicornis*), also called the Indian rhino, is native



to the Indian subcontinent. It is characterized by a single black horn and armor-like skin folds. It mainly inhabits grasslands and forests in northern India and Nepal. Classified as Vulnerable by the IUCN, its population has rebounded from fewer than 200 individuals in the early 20th century to over 4,000 by 2025 due to conservation efforts. The species plays a key ecological role in shaping grassland ecosystems. It is also a flagship species for anti-poaching initiatives and habitat preservation in South Asia.

#### WHY IN NEWS?

The 2025 report documented a population increase of greater one-horned rhinos in India and Nepal, crediting enhanced monitoring and legal enforcement for protection gains.

### Green Ammonia

Green Ammonia is ammonia produced using hydrogen derived from renewable energy sources, primarily through water electrolysis powered by solar or wind energy. Unlike grey ammonia, which relies on fossil fuels, green ammonia emits **zero carbon dioxide** during production. It serves as a carbon-free fuel, energy carrier, and fertilizer input. Its high hydrogen density and ease of storage make it a promising medium for hydrogen transport and long-term energy storage. The production process involves nitrogen fixation from air combined with green hydrogen. Green ammonia can be used in fuel cells, combustion engines, and as a feedstock for green fertilizers, reducing the carbon footprint of agriculture.

#### WHY IN NEWS?

Green Ammonia's record low price of ₹55.75/kg was discovered in India's first-ever auction under the National Green Hydrogen Mission, marking milestone in clean energy adoption and green fertilizer supply.

### Green Corridors for Organ Transport

Green corridors are specially coordinated traffic routes cleared by police authorities to enable the rapid transport of organs between hospitals and airports or transplant centers. These corridors minimize delays caused by traffic congestion, crucial for organs like hearts which must be transplanted within four hours of harvest. India pioneered the use of green corridors to improve organ delivery times, involving real-time coordination among traffic police, ambulance services, and hospitals. Despite their success in ground transport, limitations remain due to inadequate air connectivity and infrastructure, especially in remote regions. Green corridors are a key logistical innovation to enhance organ transplant efficiency.

#### WHY IN NEWS?

Green corridors are mentioned as part of existing transport solutions, with calls for enhanced air travel infrastructure to overcome delays in heart organ transport in east India.

### Green Energy Corridors

**Green energy corridors** are specialized transmission networks designed to evacuate renewable energy efficiently from generation sites to consumption centers. These



corridors address the intermittency and geographic concentration of renewable resources like solar and wind. India is still developing these corridors, which are crucial for integrating decentralized renewable energy into the grid. They enable better grid stability and reduce curtailment of renewable power. The corridors require capital investment and coordination between states. Their completion is vital to increasing renewable energy's share in actual power consumption beyond installed capacity.

#### WHY IN NEWS?

Green energy corridors are mentioned as a work-in-progress critical infrastructure needed to support the rapid growth of decentralized renewable energy in India.

### Green Hydrogen Electrolyser Manufacturing

Electrolysers split water into hydrogen and oxygen using renewable energy, producing green hydrogen. India aims to reduce electrolyser manufacturing costs by **7-8% over five years**. Domestic manufacturing is critical for scaling up green hydrogen production to meet the 2030 target. Electrolyser cost reduction depends on technology innovation, economies of scale, and supply chain development. India's push for local manufacturing aligns with its broader renewable energy goals and reduces dependence on imports. The government supports this through policy incentives and subsidies, facilitating the growth of a domestic electrolyser industry essential for sustainable hydrogen production.

#### WHY IN NEWS?

The report discusses electrolyser manufacturing cost reduction as a key factor in lowering green hydrogen production costs from \$4-4.5/kg to \$3-3.75/kg by 2030.

### Greenhouse Gas Emission Cuts

Greenhouse gas (GHG) emissions, primarily carbon dioxide, methane, and nitrous oxide, trap heat in the Earth's atmosphere, causing global warming. Major sources include fossil fuel combustion, agriculture, and deforestation. Cutting emissions involves transitioning to renewable energy, improving energy efficiency, and adopting sustainable land use practices. International agreements like the Paris Agreement aim to limit warming to below 2°C by reducing emissions globally. Effective cuts are essential to slow climate change impacts, including habitat loss and species decline. The reindeer study stresses that without major GHG reductions, caribou populations could decline by up to 80% by 2100.

#### WHY IN NEWS?

The study's forecasts for reindeer and caribou population decline depend heavily on the success of major greenhouse gas emission cuts to mitigate climate change impacts.

### Guinea Worm Disease

Guinea worm disease, or dracunculiasis, is caused by the parasitic worm **Dracunculus medinensis**. Infection occurs by drinking water contaminated with water fleas carrying larvae. After about a year, the adult worm emerges through painful skin ulcers, typically on the lower limbs. There is no vaccine or medicine; eradication relies on safe drinking water and health education. The disease was once widespread in Africa and Asia but has



been reduced to near eradication through global efforts. In 2018, Kenya was certified free of Guinea worm disease by WHO, marking public health success.

#### WHY IN NEWS?

Kenya's certification as Guinea worm disease-free in 2018 is noted as a precedent to its recent elimination of sleeping sickness, denoting progress against neglected tropical diseases.

### **Gulf of Mannar Marine Biosphere**

The **Gulf of Mannar Marine Biosphere** is a protected area along the southeastern coast of India, encompassing 21 islands and adjacent coral reefs. It was declared a biosphere reserve in 1989 due to its rich biodiversity, including over 3,600 species of flora and fauna. The region is home to endangered species such as the dugong and sea turtles. The coral reefs here are unique because they developed around low-lying islands rather than rocky substrates. The area faces threats from coral mining, climate change, and human activities, prompting restoration efforts using artificial substrates and reef modules to preserve its ecosystem.

#### WHY IN NEWS?

The Gulf of Mannar Marine Biosphere is in the spotlight due to ongoing coral restoration efforts led by SDMRI and Tamil Nadu's Forest Department, aiming to revive degraded reefs and protect marine biodiversity.

### **Hydrogen Internal Combustion Engine Vehicles**

Hydrogen internal combustion engine (H<sub>2</sub>-ICE) vehicles use hydrogen as fuel in modified engines, emitting only water vapor. India has deployed **22 H<sub>2</sub>-ICE vehicles** as part of pilot projects under the National Green Hydrogen Mission. These vehicles offer a transitional technology compared to fuel cell electric vehicles (FCEVs), leveraging existing internal combustion engine technology with hydrogen fuel. H<sub>2</sub>-ICE vehicles can utilize current refuelling infrastructure with modifications and provide lower-cost alternatives for hydrogen mobility. They emit **zero carbon emissions** but may produce small amounts of nitrogen oxides (NO<sub>x</sub>), necessitating emission controls.

#### WHY IN NEWS?

The deployment of hydrogen-powered vehicles, including H<sub>2</sub>-ICE types, is part of India's pilot projects to demonstrate hydrogen mobility and support infrastructure development by 2025.

### **Hydroponic Weed**

Hydroponic weed refers to cannabis plants grown using hydroponics, a soil-less cultivation technique involving nutrient-rich water solutions. This method allows faster growth, higher yields, and better control over environmental factors like light and humidity. Hydroponic cannabis often has higher potency due to optimized nutrient delivery. It is cultivated indoors or in controlled environments, making it harder to detect compared to traditional outdoor farming. Hydroponic weed has gained popularity among illegal growers for its efficiency and quality. The plant's growth cycle can be shortened to



as little as 8 weeks, facilitating rapid production and supply in illicit markets.

WHY IN NEWS?

Hydroponic weed was the primary contraband seized in the August 2025 nationwide operation targeting a smuggling syndicate trafficking this high-value drug into India.

### ICRISAT

The **International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)** is a non-profit, non-political organization established in 1972 headquartered in Hyderabad. It focuses on improving agriculture and livelihoods in semi-arid tropics through research on crops like sorghum, millet, pigeonpea, chickpea, and groundnut. ICRISAT operates across Asia and Africa and collaborates with national and international partners. It holds one of the world's largest genebanks for dryland crops, preserving over 128,000 germplasm accessions. It played a key role in developing drought-tolerant and climate-resilient crop varieties to support smallholder farmers in marginal environments.

WHY IN NEWS?

ICRISAT launched an AI-powered climate advisory service to provide hyper-local weather insights to smallholder farmers in Maharashtra as part of a climate-resilient agriculture initiative.

### Integrated Food Security Phase Classification (IPC)

The **Integrated Food Security Phase Classification (IPC)** is a standardized tool for classifying the severity and magnitude of food insecurity. It uses a five-phase scale from Minimal (Phase 1) to Famine (Phase 5). IPC combines data on food consumption, nutrition, and mortality to assess acute food insecurity. The classification triggers coordinated humanitarian responses and policy decisions. It relies on local data collection and expert analysis. IPC was developed by a consortium including FAO, WFP, and others. It is globally recognized and used in over 40 countries. The classification requires meeting three thresholds for famine – extreme food deprivation, acute malnutrition, and starvation-related deaths.

WHY IN NEWS?

The IPC analysis confirmed famine conditions in Gaza for the first time in the Middle East, denoting catastrophic food insecurity and urgent humanitarian needs amid ongoing conflict and blockades.

### Intensity-Duration-Frequency (IDF) Curves

Intensity-Duration-Frequency (IDF) curves are statistical tools used in hydrology to estimate the probability of rainfall events of varying intensities and durations occurring within a specific return period. They help urban planners and engineers design drainage systems and flood control infrastructure by predicting extreme rainfall events. IDF curves are developed using long-term rainfall data and are essential for managing urban flooding risks. The curves differ regionally due to local climate and geography, and they are updated regularly to account for changing climate patterns.

WHY IN NEWS?

The **IDF mechanism** is being emphasized for Mumbai's flood management to predict



heavy rainfall zones and aid authorities in water discharge planning amid increasing extreme rainfall events.

### **International Court of Justice Advisory Opinion on Climate**

Recently, the International Court of Justice (ICJ) issued an advisory opinion stating that governments continuing fossil fuel production, consumption, subsidies, or licensing without adequate climate mitigation measures could commit an **internationally wrongful act**. This opinion introduces potential legal liability for states failing to curb climate harm. It marks development in international environmental law by linking state responsibility directly to climate change actions. The ICJ's stance encourages stricter national policies and international cooperation to reduce emissions and aligns legal frameworks with global climate goals.

#### WHY IN NEWS?

The ICJ's 2025 advisory opinion was cited amid rising global emissions, emphasizing the legal consequences for governments not acting on fossil fuel reduction, reinforcing calls for urgent climate action.

### **Jhum Cultivation**

Jhum cultivation, or shifting cultivation, is a traditional agricultural practice mainly found in Northeast India and other tropical forest regions. It involves clearing forest patches by slash-and-burn methods, cultivating crops for a few years, then abandoning the plot to allow natural regeneration. This cycle can last 10-20 years depending on soil fertility and forest regrowth. Jhum supports subsistence farming but contributes to deforestation and soil degradation if fallow periods shorten due to population pressure. It is culturally among tribal communities but poses challenges for forest conservation and climate mitigation efforts in the region.

#### WHY IN NEWS?

The article mentions jhum as a key driver of deforestation in the Congo Basin and Northeast India, impacting forest carbon stocks and monsoon stability.

### **Kagaznagar Forest Division**

The **Kagaznagar Forest Division** is part of the Komaram Bheem Asifabad district in Telangana. It encompasses diverse ecosystems including the Kadamba Reserve Forest. The region experiences rich biodiversity, especially notable during the monsoon season when various fungi, including rare and colorful species, emerge. The division is important for conservation and ecological research, providing habitat for numerous flora and fauna. It serves as a critical area for studying fungal diversity and forest ecology in central India. Forest officials actively monitor and document species to support biodiversity preservation.

#### WHY IN NEWS?

Kagaznagar Forest Division recently reported a burst of rare, colorful fungi, including species like the blue pinkgill, denoting its exceptional mycological diversity.



## Kasargodia sheebae

Kasargodia sheebae is a newly identified genus and species of freshwater crab discovered in the Ranipuram Hill Station, Kasaragod district, Kerala. It belongs to the family **Gecarcinucidae**. The crab features a brownish-orange carapace with numerous black spots, and orange limbs with black spots. It was found in a small mountain stream flowing through grasslands. The genus name Kasargodia is derived from Kasaragod district, and the species name sheebae honors Sheeba Smrithy Raj, who assisted in fieldwork. This species is endemic to the Western Ghats, a biodiversity hotspot with many unique freshwater crabs.

### WHY IN NEWS?

Kasargodia sheebae was recently discovered and described by researchers from the University of Kerala and published in the Journal of Crustacean Biology, denoting the biodiversity of the Western Ghats.

## Lagda Beat

The **Lagda beat** is a specific patrolling and administrative zone within the Satpura Tiger Reserve. Beats are smaller subdivisions used by forest officials to monitor wildlife and prevent poaching. Each beat has designated forest guards and patrolling teams responsible for surveillance and conservation activities. Lagda beat is known for frequent tiger sightings and is considered a critical area for tiger territorial behavior. It is equipped with forest outposts and often serves as a site for wildlife research and anti-poaching operations. The beat's terrain includes dense forest cover and water sources vital for sustaining wildlife.

### WHY IN NEWS?

The dead tiger T-66 was discovered in the Lagda beat, triggering a detailed investigation by forest personnel and veterinarians to determine the cause of death and rule out poaching.

## Machail Mata Temple

The Machail Mata Temple is a **remote Hindu shrine** located in the Kishtwar district of Jammu & Kashmir. It is dedicated to Machail Mata, a form of Goddess Durga. The temple is accessible via a trek and is the last motorable point at Chasoti village. The annual pilgrimage, called the Machail Yatra, attracts thousands of devotees who trek through difficult terrain. The temple is for the local Bharderwah and Kishtwar communities and is known for its scenic Himalayan surroundings.

### WHY IN NEWS?

The flash flood in Chasoti village, near the Machail Mata Temple, caused at least 65 deaths and many missing, denoting the vulnerability of this remote pilgrimage area to extreme weather.

## National Green Hydrogen Mission

The National Green Hydrogen Mission, launched by India in January 2023, aims to produce at least **5 million tonnes** of green hydrogen annually by 2030. It involves an investment



outlay of **Rs 19,744 crore**. Achieving this target requires an additional **125 gigawatts** of dedicated renewable energy capacity, robust water logistics, and domestic electrolyser manufacturing. The mission supports pilot projects including deployment of **37 hydrogen-powered vehicles** and establishment of **nine hydrogen refuelling stations** across 10 routes. It also promotes fiscal incentives, open-access regimes, and export-linked trade corridors to boost green hydrogen production and adoption.

#### WHY IN NEWS?

The mission is brought into light in a report released on August 19, 2025, emphasizing India's strategic position to capture 10% of the global green hydrogen market and outlining infrastructural and economic challenges.

### **Northeast Frontier Railway (NFR)**

The **Northeast Frontier Railway (NFR)** is one of the 18 railway zones in India, primarily serving the northeastern states. It covers Assam, Arunachal Pradesh, Nagaland, Tripura, Mizoram, and parts of West Bengal and Bihar. NFR is notable for pioneering eco-friendly initiatives such as bio-toilets, solar panel installations, and AI-based elephant intrusion detection systems. It manages challenging terrain and biodiversity hotspots, balancing development with conservation. The zone has implemented rainwater harvesting and afforestation drives, converting wastelands into green belts. NFR operates over 8 billion passenger journeys annually, making it a critical player in India's railway network.

#### WHY IN NEWS?

NFR partnered with IIT Guwahati to launch biodegradable bed-roll bags on 25 trains starting August 15, 2025, as part of a pilot to reduce plastic waste in northeastern India's railway operations.

### **Northern Frontier Railway Hospital**

The Northern Frontier Railway Hospital is a medical facility serving the Indian Railways in the Northeast region. It provides healthcare services to railway employees and their families and supports disaster relief operations. The hospital is known for pioneering medical innovations like train ambulances and collaborating with military and civilian health agencies. Its strategic location in Tinsukia district makes it a critical healthcare hub for the region, especially for emergency medical response in remote areas. The hospital also plays a role in public health initiatives and disaster preparedness in coordination with civil and military authorities.

#### WHY IN NEWS?

The Northern Frontier Railway Hospital participated in Exercise Aarogya Setu, contributing expertise and introducing train ambulances to enhance medical evacuation capabilities.

### **Not of Standard Quality (NSQ) Dashboard**

The **Not of Standard Quality (NSQ) Dashboard** is a digital platform tracking medicines and medical products failing to meet quality standards in India. It consolidates data on substandard, spurious, or counterfeit drugs detected by regulatory authorities, enabling real-time monitoring and prompt action. The dashboard supports transparency and



regulatory oversight by providing states with access to NSQ data, facilitating targeted interventions. The initiative is part of efforts to curb the circulation of unsafe medicines and strengthen public health safeguards. Expansion of the NSQ Dashboard to all states is planned to enhance nationwide drug quality monitoring.

#### WHY IN NEWS?

The extension of the NSQ Dashboard to all state of Indias was announced as part of upcoming initiatives accompanying the SHRESTH launch to improve drug safety and regulatory effectiveness.

### One Health Principles

**One Health** is an integrated approach recognizing the interconnection between human, animal, and environmental health. It aims to improve public health by addressing zoonotic diseases, antimicrobial resistance, and food safety through collaborative efforts across multiple sectors. The concept emerged in the early 2000s and gained global prominence after outbreaks like H1N1 and COVID-19. It promotes shared surveillance, data exchange, and coordinated response strategies. One Health is now embedded in various international policies and frameworks to prevent and control diseases that affect humans and animals simultaneously, emphasizing ecosystem health and sustainable development.

#### WHY IN NEWS?

The new veterinary blood transfusion guidelines incorporate **One Health principles** to manage zoonotic risks and ensure coordinated animal and public health safety.

### One Sun, One World, One Grid (OSOWOG)

The **One Sun, One World, One Grid** (OSOWOG) initiative aims to create a global solar power grid connecting multiple countries. It envisions sharing solar energy across regions with complementary peak usage times, enhancing efficiency and reliability. The project includes plans for a 2,000-km undersea cable between India and the UAE, enabling profitable solar power trade. OSOWOG supports regional interconnectivity, reducing dependence on fossil fuels by balancing solar energy supply and demand across time zones. It is part of India's broader strategy to integrate renewable energy resources internationally.

#### WHY IN NEWS?

India is advancing OSOWOG with plans for an undersea cable to the UAE to facilitate cross-border solar energy trade, leveraging differing peak solar usage hours.

### Operation Rainbow

Operation Rainbow was a coordinated anti-drug trafficking initiative targeting smuggling through domestic courier services. The operation focused on identifying the concealment of narcotics such as cocaine, hashish, MDMA, and amphetamines inside soft toys and small pouches. It involved intelligence gathering, multi-location raids, and collaboration between various enforcement units. The operation recovered over 9 kilograms of narcotics valued at around Rs. 40 Crore. The seizures included 3095.5 grams of cocaine,



4421 grams of hashish, and 1305.5 grams of MDMA tablets. Operation Rainbow brought into light the use of innovative smuggling methods via courier networks in urban areas like Mehrauli, New Delhi.

#### WHY IN NEWS?

Operation Rainbow was the codename for the recent DRI crackdown on narcotics smuggling using courier services in Delhi.

### Orangutan Conservancy

The Orangutan Conservancy is a non-profit organization dedicated to the protection and conservation of orangutans and their habitats. It focuses on raising awareness about threats such as habitat destruction, illegal pet trade, and poaching. The organization supports research, habitat preservation, and rehabilitation programs. It also engages in community education to promote coexistence between humans and orangutans. The Conservancy collaborates with local governments and international bodies to implement conservation strategies. It was founded in the 1990s and has since become a key player in orangutan conservation efforts, promoting sustainable practices in Southeast Asia.

#### WHY IN NEWS?

Referenced for its role in promoting World Orangutan Day and efforts to protect orangutans from environmental and human threats.

### Organ Donation Rate per Million Population

Organ donation rate per million population (pmp) measures the number of deceased organ donors relative to the population size. Spain leads globally with over **45 donors pmp**, followed by the United States. India's rate is **0.8 donors pmp**, reflecting gap between demand and supply. This metric helps compare donation efficiency across countries and assess the impact of awareness campaigns, legal frameworks, and healthcare infrastructure on donation rates. Variations depend on cultural attitudes, consent systems, and medical capabilities. Increasing the rate is critical for reducing transplant waiting lists and saving lives.

#### WHY IN NEWS?

India's low organ donation rate per million population marks the urgent need for awareness, education, and policy reforms to increase donor numbers.

### Pacific Decadal Oscillation

The **Pacific Decadal Oscillation (PDO)** is a long-term ocean fluctuation of sea surface temperatures in the North Pacific Ocean, lasting 20 to 30 years per phase. It alternates between warm and cool phases, influencing climate patterns across North America and Asia. The PDO affects marine ecosystems, fisheries, and weather variability, including droughts and rainfall. Its phases can modulate the impact of global warming by temporarily enhancing or reducing regional temperature trends. Unlike ENSO, which operates on shorter timescales, PDO changes occur over decades, making it a key factor in multi-decadal climate variability.

#### WHY IN NEWS?

The PDO is mentioned as a possible natural climate variability factor contributing to the



recent slowdown in Arctic sea ice loss over the past 20 years.

### **Padmaja Naidu Himalayan Zoological Park**

The Padmaja Naidu Himalayan Zoological Park, located in Darjeeling, is Asia's largest high-altitude zoo, established in 1958. It specializes in breeding endangered Himalayan species like the snow leopard, red panda, and Himalayan wolf. The park is named after Padmaja Naidu, an Indian freedom fighter and governor of West Bengal. It operates at an altitude of about 2,134 meters and is recognized for its successful captive breeding programs and research in conservation biology. The park collaborates internationally for studbook management and genetic diversity preservation of endangered species.

#### WHY IN NEWS?

The red panda breeding program at the Himalayan Zoological Park near Gangtok includes lineage from a male red panda, Jugal, originally from Padmaja Naidu Himalayan Zoological Park.

### **Palamau Tiger Reserve**

Palamau Tiger Reserve (PTR), located on the **Chota Nagpur Plateau** in Jharkhand, covers **1,129 square kilometres** with a **414 sq km core area** and a **715 sq km buffer zone**. It includes **Palamu Wildlife Sanctuary** and **Betla National Park**. Established as one of India's oldest tiger reserves, PTR historically supported populations of large herbivores like Gaur and Sambar. It faces threats from **habitat degradation, anthropogenic pressures, and disease transmission** from livestock. PTR has increased anti-poaching camps to 40 and expanded grasslands from 190 to 400 hectares to support wildlife.

#### WHY IN NEWS?

PTR is in the spotlight due to a recent study denoting the alarming decline of Gaur populations and efforts to implement a recovery plan involving habitat improvement and genetic infusion from Kanha Tiger Reserve.

### **Panni (Polythene Bag)**

The term **panni** refers to small transparent plastic bags commonly used in Indian markets for packaging fruits and vegetables. These bags are typically made from low-density polyethylene (LDPE). Despite their convenience, pannis contribute to plastic pollution, especially affecting urban stray animals, which often ingest them, leading to fatal intestinal blockages. Municipal authorities have intermittently cracked down on panni usage to reduce environmental harm. Panni bags are emblematic of the challenges in balancing daily convenience with sustainability in developing urban centers. Their widespread use persists due to the lack of affordable, practical alternatives in informal markets.

#### WHY IN NEWS?

Panni bags were targeted during municipal crackdowns coinciding with global plastic treaty discussions in Geneva, denoting the tension between environmental goals and everyday market practices.



## People for Animals (PFA)

People for Animals (PFA) is India's largest animal welfare organization, founded in 1992 by Maneka Gandhi. It operates through multiple branches nationwide, focusing on animal rescue, shelter, and legal advocacy. PFA has been instrumental in filing public interest litigations, including petitions against illegal bullfighting practices in Goa. The organization actively promotes the Prevention of Cruelty to Animals Act, 1960, and campaigns against animal abuse in various forms. PFA often collaborates with courts and government bodies to enforce animal protection laws and raise awareness about animal rights across India.

### WHY IN NEWS?

PFA filed the petition that led to the 1996 High Court ruling banning bullfights in Goa, a ban that remains largely unenforced, with ongoing legal debates about dhirio's status.

## Peregrine Module

The Peregrine module of HAWK manages forest and wildlife crime cases from initial reporting through court judgment. It simplifies procedures for filing wildlife offence reports and generates detailed case reports. Peregrine supports integration with other modules and external systems like CCTNS through APIs. It enhances transparency and efficiency in handling poaching and other wildlife-related crimes by automating workflows and maintaining comprehensive digital records. The module is currently operational in Tamil Nadu and forms the backbone of HAWK's crime management capabilities, enabling faster, data-driven decision-making by forest officials and law enforcement agencies.

### WHY IN NEWS?

Peregrine is one of the first HAWK modules implemented in Tamil Nadu, streamlining wildlife crime reporting and prosecution processes.

## Perform, Achieve and Trade (PAT) Scheme

The **Perform, Achieve and Trade (PAT) scheme** is a market-based mechanism under India's National Mission on Enhanced Energy Efficiency. It sets energy reduction targets for energy-intensive industries and allows trading of excess energy savings as credits. The scheme incentivizes industries to adopt energy-efficient technologies and practices, reducing energy consumption and greenhouse gas emissions. PAT phases have expanded over time, covering more sectors and increasing reduction targets. It supports India's climate goals by promoting cost-effective emissions reductions and encouraging innovation in energy management. The scheme is integrated into state-level energy efficiency initiatives and monitored by the Bureau of Energy Efficiency.

### WHY IN NEWS?

SEEI 2024 marks the expansion of the PAT scheme as part of evolving national priorities to enhance energy efficiency across India.

## Phosphate Rich Organic Manure (PROM)

Phosphate Rich Organic Manure (PROM) is an organic fertilizer produced from processed slurry of biogas and compressed biogas plants. It contains **high levels of bioavailable**



**phosphorus**, essential for plant growth, and improves soil health by enhancing microbial activity and nutrient retention. PROM is part of NDDB's circular bio-economy strategy, converting cattle dung waste into valuable agricultural inputs. It reduces dependence on chemical fertilizers and supports sustainable farming. PROM production follows standardized protocols to ensure quality and consistency. It is widely used in rural India to improve crop yields and soil fertility while promoting environmental sustainability.

WHY IN NEWS?

PROM is mentioned in relation to NDDB's manure value chain and organic fertilizer production from biogas slurry, enhancing rural livelihoods and sustainable agriculture.

### **Pilibhit Tiger Reserve (PTR)**

Pilibhit Tiger Reserve is located in Uttar Pradesh, covering a core area of 620 sq km. It was declared a tiger reserve in 2008 and forms part of the Terai Arc Landscape. The reserve consists of dense forests, grasslands, and swamps, supporting rich biodiversity beyond tigers, including elephants and leopards. PTR is divided into multiple forest ranges such as Mala, Mahof, Deuria, Baharhi, and Haripur. The reserve uses camera traps extensively for wildlife monitoring. Its tiger population has been increasing, contributing to India's overall tiger conservation efforts. The reserve faces challenges of human-wildlife conflict due to expanding tiger numbers.

WHY IN NEWS?

The tiger population in Pilibhit Tiger Reserve has increased to around 80, based on a recent internal survey conducted between November 2024 and March 2025.

### **Pobitora Wildlife Sanctuary**

Pobitora Wildlife Sanctuary is located in Assam, covering approximately 38.8 square kilometers. It is renowned for having one of the highest densities of the **Greater One-Horned Rhino** in the world. The sanctuary's grasslands and wetlands support diverse flora and fauna, including migratory birds. It was declared a sanctuary in 1987 to protect rhinos from poaching and habitat loss. Pobitora faces threats from unplanned infrastructure development, such as roads and bridges, which disrupt rhino habitats. The sanctuary is also affected by seasonal floods and erratic rainfall, impacting local ecosystems and communities relying on its resources.

WHY IN NEWS?

Pobitora Wildlife Sanctuary was the venue for a conservation awareness programme focused on coexistence between humans and wildlife, denoting the sanctuary's ecological importance and threats to rhino habitats.

### **Priority Pollution Categories**

Polluted river stretches in Gujarat are categorized into **Priority I to Priority V** based on pollution severity. Priority I indicates the worst pollution levels, while Priority V denotes the least polluted. This classification helps prioritize river cleaning and conservation efforts. In Gujarat, six stretches fall under Priority I, with others distributed across Priority II to V. The system is part of the national framework to monitor and manage water



pollution, guiding allocation of resources and policy focus. This categorization is based on BOD and other water quality parameters.

#### WHY IN NEWS?

The Union government's Lok Sabha reply detailed the pollution categories of 13 polluted river stretches in Gujarat, reflecting progress and ongoing challenges in water quality management.

### **Puget Sound Basin Pollution**

The **Puget Sound basin** covers over 1,000 square miles in Washington state and was heavily contaminated by industrial pollution from smelters like ASARCO. Airborne pollutants settled on soil and waterways, leaving persistent deposits of lead, arsenic, and other heavy metals. These contaminants remain in the environment decades after smelter closures. The basin's pollution poses health risks, especially to children who ingest contaminated soil or dust. The Washington State Department of Ecology monitors and manages these toxic sites. The basin includes urban and suburban areas with populations exposed to legacy industrial pollution.

#### WHY IN NEWS?

The Puget Sound basin's soil pollution is central to Fraser's investigation of environmental factors possibly influencing crime rates and the development of serial killers in the region.

### **Ranjit Sagar Dam**

The **Ranjit Sagar Dam** is a multipurpose dam on the Ravi River located in the state of India of Punjab. It was completed in 2001 and serves purposes including hydroelectric power generation, irrigation, and flood control. The dam has an installed capacity of **600 MW** with three powerhouses. It is named after Maharaja Ranjit Singh, the founder of the Sikh Empire. The dam's reservoir is known as the **Thein Dam Reservoir**. The structure has a height of **160 meters** and a length of **287 meters**. It plays a critical role in managing water flow during heavy rainfall seasons.

#### WHY IN NEWS?

The Ranjit Sagar Dam released 1,50,000 cusecs of water into the Ravi River, marking the highest discharge this season following continuous heavy rainfall, prompting flood alerts and safety measures in nearby areas.

### **Sabzi Mandi**

A **sabzi mandi** is a wholesale vegetable market common across South Asia, especially India. These markets serve as critical nodes in the supply chain, connecting farmers with retailers and consumers. Sabzi mandis are often informal and densely packed, with minimal regulation on packaging materials, leading to heavy use of single-use plastics like pannis. They are culturally as centers of daily commerce and social interaction. Many sabzi mandis face challenges in waste management and pollution control. Efforts to regulate plastic use in these markets often meet resistance due to the vendors' dependence on cheap packaging options.

#### WHY IN NEWS?

Sabzi mandis were focal points during municipal plastic bag enforcement drives,



illustrating the practical difficulties of implementing bans in informal economic sectors.

### Sangai Deer

The **sangai deer** (*Rucervus eldii eldii*) is an endangered subspecies of Eld's deer, native to the **Keibul Lamjao National Park** in Manipur. It is known as the "dancing deer" due to its delicate gait on the floating biomass of the park's phumdis (floating islands). The sangai is the state animal of Manipur and is culturally to the local Meitei community. The population is critically low, with conservation efforts focusing on habitat preservation and anti-poaching. Its unique habitat on floating islands makes its survival highly dependent on the health of the Loktak Lake ecosystem.

#### WHY IN NEWS?

The sangai deer are part of an animal exchange program between the Surat and Delhi zoos, with five individuals sent from Delhi to Surat.

### SATAT Initiative

The **SATAT (Sustainable Alternative Towards Affordable Transportation)** initiative was launched by the Government of India in 2018 to promote the production and use of Compressed Bio-Gas (CBG) as an alternative fuel. It aims to establish **5,000 CBG plants by 2030**, converting agro-waste, municipal solid waste, and other biodegradable materials into fuel. SATAT supports rural economies by creating demand for agricultural residues and reducing stubble burning. The program integrates technology, financing, and policy support, encouraging private sector participation. It also focuses on developing a supply chain for CBG, including feedstock aggregation and infrastructure for distribution and dispensing.

#### WHY IN NEWS?

SATAT is central to India's biofuel growth strategy, with efforts underway to scale small-scale CBG plants and export engineering solutions aligned with national clean energy goals.

### Satpura Tiger Reserve

The **Satpura Tiger Reserve** is located in Madhya Pradesh's Narmadapuram district and covers an area of approximately 524 square kilometers. It is part of the larger Satpura-Maikal landscape, known for its rich biodiversity and rugged terrain. The reserve was established in 1981 and is managed by the Madhya Pradesh Forest Department. It hosts a variety of wildlife including tigers, leopards, sloth bears, and Indian bison. The reserve is characterized by dense forests, hills, and rivers, making it a key area for tiger conservation efforts in central India. It is less commercialized compared to other tiger reserves.

#### WHY IN NEWS?

A tiger named T-66 was found dead in the Lagda beat of Satpura Tiger Reserve, suspected to have died due to a territorial fight, prompting forensic investigations by forest officials and NTCA representatives.

### Sawalkote Hydroelectric Project

The Sawalkote Hydroelectric Power Project is a **1,856-MW run-of-the-river hydropower**



**initiative** on the Chenab River in Jammu and Kashmir. Conceived in the 1960s by the Central Water Commission, it was stalled due to the Indus Waters Treaty (IWT) restrictions. The project features a **192.5-metre roller-compacted concrete gravity dam** and is designed to harness the Chenab's high-velocity Himalayan flow. With a catchment area of over 10,000 square kilometres above the snowline, the Chenab has an estimated hydropower potential exceeding 150,000 MW. The project is estimated to cost Rs 22,704 crore and aims to surpass Baglihar as the region's largest hydropower project.

#### WHY IN NEWS?

India has floated an international tender in July 2025 to fast-track the Sawalkote project after suspending the IWT, signaling a strategic shift to maximize hydropower on the Chenab River previously allocated to Pakistan.

### Sea of Galilee

The Sea of Galilee, also known as Lake Kinneret, is Israel's largest freshwater lake, located in the northeastern part of the country. It holds religious significance as a site visited by Jesus Christ and attracts Christian pilgrims worldwide. The lake supports local agriculture, fishing, and tourism. It is fed mainly by the Jordan River and serves as important water source for Israel. The lake's ecosystem is sensitive to environmental changes, including algae blooms and water level fluctuations. It has experienced rare natural phenomena like color changes due to algae pigment production.

#### WHY IN NEWS?

The Sea of Galilee turned red in August 2025 due to an algae bloom, causing public alarm and prompting government water quality inspections.

### Sea Star Wasting Disease

Sea star wasting disease is characterized by rapid tissue decay, white lesions, arm twisting, and disintegration within days. First noted in 2013, it affected over 20 species along the Pacific coast. The disease spreads through waterborne pathogens and is exacerbated by warm ocean temperatures. Symptoms include arm curling, lethargy, and loss of adhesion to surfaces. It causes mass mortality events, disrupting ecological balances. The disease was difficult to diagnose because earlier research focused on dead tissue rather than live coelomic fluid samples. It is considered one of the largest marine die-offs recorded.

#### WHY IN NEWS?

Sea star wasting disease caused massive die-offs of sea stars since 2013, with the recent identification of its bacterial cause enabling targeted conservation strategies.

### Shelterbelts

Shelterbelts are rows or strips of trees and shrubs planted to protect agricultural land from wind erosion, dust storms, and extreme weather. In arid and semi-arid regions like Rajasthan, shelterbelts reduce soil degradation and improve microclimates by lowering wind speed and increasing humidity. They also enhance biodiversity and carbon sequestration. Shelterbelts can improve crop yields by stabilizing soil moisture and



temperature. Their design varies depending on local conditions, including tree species selection and spacing. While common in temperate zones, shelterbelt use in India is expanding as a climate resilience strategy, especially in desert fringe areas vulnerable to desertification.

#### WHY IN NEWS?

Rajasthan has established shelterbelts of resilient local species to protect farmlands from desert winds and improve microclimates amid rising climate extremes in 2025.

#### SHIPA NGO

SHIPA (Society for Health Initiatives and Participatory Action) is a local NGO operating in Assam, focusing on community development and environmental conservation. It works closely with forest authorities and conservation groups to promote sustainable livelihoods and biodiversity protection. SHIPA engages in awareness campaigns, capacity-building workshops, and participatory research involving local communities. The NGO plays role in mitigating human-wildlife conflicts and advocating for eco-friendly infrastructure development. Its members, such as Binod Deka and Nripen Nath, actively participate in field programmes and educational initiatives to encourage coexistence between people and wildlife.

#### WHY IN NEWS?

SHIPA partnered with Aaranyak and the Pobitora Wildlife Sanctuary authority to conduct a conservation awareness programme for students and local villagers.

#### Shree Anna

Shree Anna is a collective term for traditional millet grains including **Pearl Millet (Bajra)**, **Sorghum (Jowar)**, **Finger Millet (Ragi)**, and several minor millets. These grains have historically been staple foods in India but have been sidelined in modern agronomy and agricultural policy. Despite their resilience in rainfed areas and nutritional benefits, production and economic value of Shree Anna have remained stagnant over the past decade. Some local landraces outperform hybrids, denoting the importance of localized research and farmer-led trials. These millets are drought-tolerant and suited to regions where paddy farming underperforms, such as Odisha and Jharkhand.

#### WHY IN NEWS?

Shree Anna millets were central to the International Year of Millets 2023 campaign, which aimed to revive their cultivation and market presence through government initiatives and G20 events.

#### Shuchi Verma

Dr. Shuchi Verma is an Assistant Professor of Biotechnology at Ramjas College, University of Delhi. She developed a technology to produce bioplastic from cow dung by extracting cellulose and converting it into biodegradable polymers. Her research involves optimizing microbial fermentation and chemical processes to yield durable, eco-friendly bioplastics. She has presented her findings to the Uttar Pradesh Gau Seva Commission, contributing technical expertise to the state's cow dung valorization project. Her work bridges



academic research and practical application in sustainable materials, supporting rural employment and environmental goals through innovative biotechnology.

#### WHY IN NEWS?

Dr. Shuchi Verma serves as the technical advisor for the Uttar Pradesh cow dung bioplastic initiative, having developed the core technology used in the project.

### **SIGHT Scheme (Mode-2A)**

The SIGHT Scheme (Sustainable Infrastructure for Green Hydrogen Transition) is a government initiative aimed at accelerating green hydrogen and its derivatives' adoption through structured procurement auctions. Mode-2A refers to a specific auction format under the scheme designed to aggregate large-scale demand from industrial offtakers, ensuring price discovery and market stability. It emphasizes long-term fixed-price contracts, payment security mechanisms, and competitive bidding to attract investments. The scheme supports India's goal to scale green hydrogen production capacity rapidly, reduce dependency on fossil fuels, and enable the transition of heavy industries and fertilizers towards cleaner alternatives.

#### WHY IN NEWS?

The first auction under the SIGHT Scheme (Mode-2A) successfully procured 75,000 metric tonnes per annum of Green Ammonia at a record low price, demonstrating the scheme's effectiveness in market creation.

### **Silver-backed Chevrotain**

The **silver-backed chevrotain**, or two-tone mouse deer, is a small hooved mammal about the size of a rabbit. It has a **russet-colored head and front legs**, a silver-grey body and hind legs, and a **white, grizzled rear end**. Native to Vietnam's lowland forests, it was thought lost for nearly 30 years before being rediscovered via camera traps. It faces major threats from hunters using snares and predators like leopards and wild dogs. Its rediscovery marks the importance of conservation efforts in the **Greater Annamites ecoregion**.

#### WHY IN NEWS?

The silver-backed chevrotain was captured on camera for the first time in nearly three decades in a Vietnamese forest, marking rediscovery for conservationists and prompting urgent protective measures.

### **Sliteye Shark**

The **sliteye shark** (*Loxodon macrorhinus*) is a small requiem shark named for its distinctive narrow, slit-like eyes. It inhabits tropical Indo-Pacific waters, typically found at depths ranging from 10 to 200 meters. This species is known for its adaptability to both deep and shallow clear seas, often residing near coral reefs and seagrass beds. It feeds mainly on small fish and invertebrates. The sliteye shark is classified as **near-threatened** due to overfishing and habitat loss, with populations expected to decline by nearly 30% in 15 years. It is rarely observed, making sightings for conservation studies.

#### WHY IN NEWS?

Scientists recorded the sliteye shark for the first time in the Great Chagos Bank, denoting



its presence in deep seagrass habitats and emphasizing the need for conservation in the region.

### Smooth-coated Otter

The **smooth-coated otter** (*Lutrogale perspicillata*) is a medium-sized otter species found in South and Southeast Asia. It is distinguished by its smooth, short fur and broad head. These otters are social animals often living in family groups and are excellent swimmers, preying mainly on fish. They inhabit rivers, lakes, and mangrove swamps. Smooth-coated otters face threats from habitat destruction and pollution. Captive breeding is challenging due to their social structure and territorial behavior, particularly female infighting during puberty. Their populations have declined, but some conservation programs aim to stabilize numbers.

#### WHY IN NEWS?

A pair of smooth-coated otters was transported from Surat zoo to Delhi's National Zoological Park after two decades without otters at the facility.

### Snow Leopard

The **snow leopard** (*Panthera uncia*) is a large cat native to the mountain ranges of Central and South Asia, including the Himalayas in Nepal. It is adapted to cold, high-altitude environments between 3,000 and 4,500 meters. Snow leopards have thick fur, long tails for balance, and wide paws acting like natural snowshoes. They are elusive and solitary, making them difficult to study. Their primary prey includes blue sheep and ibex. Snow leopards are classified as vulnerable due to habitat loss, poaching, and retaliatory killings by herders. Conservation efforts focus on community engagement and anti-poaching patrols.

#### WHY IN NEWS?

Nepal's snow leopard population is a key species in the IBCA framework agreement, denoting its role in global big cat conservation efforts.

### Social Forestry Department

The Social Forestry Department in India focuses on afforestation and conservation of forest resources, often working in rural and semi-urban areas to promote sustainable use of forest products. It implements programs to increase tree cover, protect wildlife habitats, and engage communities in forest management. The department plays a role in rescuing and rehabilitating wildlife found in human-dominated landscapes. It collaborates with district wildlife wardens and forest officers to ensure protection of rare species and biodiversity conservation. Social forestry initiatives also aim to reduce pressure on natural forests by promoting tree planting on non-forest lands.

#### WHY IN NEWS?

The Social Forestry Department received and took custody of the rare albino Indian flapshell turtle for conservation following its rescue in Vadodara district.

### Solar-Powered Water Pumps in Tripura

Solar-powered water pumps are increasingly used in Tripura's agriculture, particularly in



the Khowai district. These pumps use solar energy to extract groundwater for irrigation, reducing reliance on diesel and electricity. They improve water access for farmers, lower operational costs, and promote sustainable farming. The pumps are part of India's larger push to integrate solar technology into rural infrastructure. Tripura's adoption reflects growing efforts to enhance energy access and agricultural productivity in northeastern India, a region with abundant solar potential but limited grid connectivity.

WHY IN NEWS?

Images and reports show farmers in Tripura using solar-powered water pumps, showcasing renewable energy's role in rural agricultural development.

### **South 24 Parganas Forest Division**

South 24 Parganas is a district in West Bengal containing important mangrove forests adjacent to the Sundarbans Tiger Reserve. The district's forest division includes tiger-inhabited ranges like **Matla, Raidighi, and Ramganga**. These areas were previously outside STR but have been added to improve ecological and administrative management. The forest division is part of the larger Sundarbans Biosphere Reserve and plays a critical role in tiger conservation due to its mangrove ecosystem. Despite its ecological importance, the region faces challenges including limited manpower and conflict with local fishing communities.

WHY IN NEWS?

The South 24 Parganas forest division's tiger-bearing areas were officially merged into the Sundarbans Tiger Reserve to enhance conservation efforts and unify management.

### **South Lhonak Lake**

South Lhonak Lake is a glacial lake located in Sikkim, formed by the melting of the South Lhonak Glacier. It is known for its susceptibility to sudden glacial lake outburst floods (GLOFs), which can cause catastrophic downstream damage. In October 2023, the lake burst, sending a flood that destroyed the Chungthang dam and caused extensive damage to the region. The lake's instability is linked to climate change-induced glacier melt and increased precipitation. Monitoring South Lhonak is critical for disaster preparedness in the Himalayan region, as its outburst floods threaten infrastructure, villages, and ecosystems downstream.

WHY IN NEWS?

South Lhonak Lake burst in October 2023, causing a destructive flood that obliterated the Chungthang dam in Sikkim, denoting the increasing risk of glacial lake outburst floods in the Himalayas.

### **Spain Renewable Grid Blackout**

Recently, Spain experienced blackout caused by an interconnectivity fault in the cross-border European Union renewable transmission grid. The failure disrupted electricity supply across multiple regions. The incident brought into light vulnerabilities in integrating large-scale renewable energy sources into interconnected grids. It told the technical challenges of maintaining seamless, balanced, and stable connectivity across



national boundaries. The blackout prompted EU-wide reviews of grid standards, backup storage systems, and transmission infrastructure to prevent future failures. Spain's blackout is a case study in the complexity of renewable energy transmission in multi-jurisdictional frameworks.

#### WHY IN NEWS?

The Spain blackout was cited as a cautionary example of the technical and regulatory challenges India may face in scaling and integrating its renewable energy infrastructure.

#### State Disaster Response Force (SDRF)

The **State Disaster Response Force (SDRF)** is a specialized emergency response unit in India, trained to handle natural and man-made disasters. It operates under state governments and is equipped for search, rescue, and relief operations during earthquakes, floods, landslides, and industrial accidents. SDRF teams receive advanced training in disaster management, including medical aid, rope rescue, and debris clearance. They coordinate with local administration, police, and health services during emergencies. The SDRF played an important role in disaster mitigation during the 2013 Uttarakhand floods and continues to be a key responder in the Himalayan region's frequent natural calamities.

#### WHY IN NEWS?

The SDRF was actively involved in rescuing and providing immediate relief to workers injured in the landslide at the Vishnugad Pipalkoti project site in Chamoli district.

#### State Energy Efficiency Index (SEEI)

The **State Energy Efficiency Index (SEEI)** is an annual ranking developed by the Bureau of Energy Efficiency (BEE) in collaboration with the Alliance for an Energy Efficient Economy (AEEE). It evaluates energy efficiency performance across 36 states of India and Union Territories using 66 indicators spanning sectors like buildings, industry, transport, agriculture, and municipal services. The index categorizes states into front runners, achievers, and contenders based on their scores. It integrates evolving priorities such as the Energy Service Companies (ESCO) model, star rating for buildings, and demand-side management by DISCOMs. SEEI supports India's net-zero emissions and energy intensity reduction goals.

#### WHY IN NEWS?

SEEI 2024 rankings were released, with Maharashtra ranked first, denoting state-level progress in energy efficiency and supporting India's climate targets for 2030 and 2070.

#### Subcritical Technology

Subcritical coal-fired power plants operate at steam pressures below the critical point of water (**22.1 MPa**) and temperatures under **374°C**. They have an average efficiency around **32%**, lower than supercritical and ultra supercritical units. Despite older designs, subcritical plants often have higher plant load factors (PLF), averaging **68%**, indicating frequent use. Many units exceed 25 years but can outperform newer units in emission factors, sometimes below **0.95 tonne CO<sub>2</sub>/MWh**. However, subcritical plants dominate



India's coal fleet, comprising about **80%** of units, and contribute disproportionately to emissions due to lower efficiency and older technology.

WHY IN NEWS?

India's coal fleet remains primarily subcritical, with many units still in operation, posing challenges for emission reduction despite the push for newer technologies.

### **Sundarban Biosphere Reserve**

The **Sundarban Biosphere Reserve (SBR)** is a UNESCO World Heritage site located in the delta region of the Ganges, Brahmaputra, and Meghna rivers. It spans parts of India and Bangladesh and is the largest contiguous mangrove forest in the world. The reserve supports a unique ecosystem with diverse flora and fauna, including the Bengal tiger and saltwater crocodile. It covers approximately 10,000 square kilometers, with around 4,200 sq km in India. The SBR contains numerous tidal waterways, mudflats, and small islands, playing important role in coastal protection and climate regulation. It faces threats from rising sea levels and salinity changes.

WHY IN NEWS?

The population survey of saltwater crocodiles in the Sundarban Biosphere Reserve showed increase in all age classes, especially hatchlings, in 2025 compared to 2024.

### **Sundarbans Tiger Reserve Expansion**

The Sundarbans Tiger Reserve (STR) expanded by **1,044.68 sq km** on August 19, 2025, increasing its total area to **3,629.57 sq km**, making it India's second-largest tiger reserve. The expansion incorporated the Matla, Raidighi, and Ramganga ranges from South 24 Parganas district. This move places STR just behind Nagarjunasagar-Srisailem Tiger Reserve (3,727.82 sq km). The proposal was first suggested around 2005-06 but stalled until revived in 2022-23, with approval from the National Board of Wildlife and National Tiger Conservation Authority. The expansion aims to unify management of tiger habitats under STR for better conservation.

WHY IN NEWS?

The NBWL approved the expansion proposal, officially making Sundarbans the second-largest tiger reserve in India, enhancing tiger conservation and management in the region.

### **TRAFFIC**

TRAFFIC is a global wildlife trade monitoring network established in 1976. It operates as a joint program of the World Wide Fund for Nature (WWF) and the International Union for Conservation of Nature (IUCN). TRAFFIC collects data on the trade of wild animals and plants to combat illegal trafficking and promote sustainable trade. It works closely with governments, conservationists, and enforcement agencies worldwide. TRAFFIC's research has influenced international policies, especially under CITES. It also publishes reports on wildlife trade trends, including species-specific assessments and market analyses. Its work is vital for protecting endangered species from exploitation.

WHY IN NEWS?

TRAFFIC co-authored a 2025 report denoting strengthened monitoring efforts that have



helped reduce poaching of greater one-horned rhinos in India and Nepal.

### **Triangular Artificial Reef (TAR) Modules**

Triangular Artificial Reef (TAR) modules are man-made structures deployed underwater to support coral growth and enhance fishery resources. First introduced near Vaan Island in 2002, these modules provide a stable surface for coral recruitment and habitat for marine species. TARs are designed to withstand strong currents and wave action, improving coral survival rates compared to earlier substrates like stones and clay pots. Over 10,600 artificial reef modules, including TARs, were installed between 2015 and 2019 in the Gulf of Mannar. They have increased coral recruit density and biodiversity, supporting 14 coral genera by 2020.

#### WHY IN NEWS?

TAR modules are part of Tamil Nadu's coral restoration strategy to restore degraded reefs, increase fish density, and combat erosion around Vaan Island and other locations in the Gulf of Mannar.

### **Typhoon Warning Levels**

Taiwan's typhoon warning system includes multiple levels, with **sea and land warnings** covering affected regions. The land warning system categorizes areas based on potential impact, covering counties and cities under threat. Warnings trigger precautionary measures such as suspending public transport, work, and classes. In southern China, Guangdong Province uses a **tiered emergency typhoon response system** ranging from Level III (lowest) to Level I (highest). Raising the response from Level III to Level II indicates an increased risk requiring more urgent preparation and resource mobilization. These warning systems are critical for disaster management and public safety during typhoon events.

#### WHY IN NEWS?

The flood control headquarters in Guangdong Province raised its emergency typhoon response from Level III to Level II due to Typhoon Podul's anticipated impact.

### **Wastewater-Based Epidemiology (WBE)**

Wastewater-Based Epidemiology (WBE) is a public health tool that analyzes sewage samples to detect pathogens like viruses and bacteria shed by infected individuals, including asymptomatic carriers. WBE provides near-real-time, community-level infection data within 5-7 days of sample collection. It enables early outbreak detection, tracking infection trends, and identifying transmission hotspots. WBE is non-invasive, cost-effective, and covers large populations, aiding timely public health interventions. It has been widely used for COVID-19 and polio surveillance and is expanding to monitor other diseases such as acute encephalitis syndrome and respiratory illnesses. WBE can also assess environmental pollution and ecosystem health.

#### WHY IN NEWS?

The Indian Council of Medical Research (ICMR) plans to expand wastewater surveillance from 5 to 50 cities, monitoring 10 viruses to detect early signs of outbreaks and improve



public health response.

### Western Disturbances

Western Disturbances are **east-moving rain-bearing wind systems** originating beyond Afghanistan and Iran. They draw moisture from the Mediterranean Sea, Black Sea, Caspian Sea, and Arabian Sea. Normally active in boreal winter (December to March), they have started affecting weather outside winter months due to climate change. Their increased moisture content, amplified by the warming Arabian Sea, leads to heavier precipitation in northern India, especially the Himalayas. These disturbances influence the winter rainfall and snowfall patterns in Jammu & Kashmir and surrounding regions, impacting agriculture and water resources.

#### WHY IN NEWS?

Western Disturbances have changed behavior, causing more frequent and intense rainfall in Jammu & Kashmir, contributing to recent flash floods and extreme weather events in 2025.

### Wildlife Institute of India (WII)

The Wildlife Institute of India (WII), established in 1982, is an autonomous institution under the Ministry of Environment, Forest and Climate Change. It conducts research, training, and advisory services on wildlife conservation and management. WII studies often inform government decisions on environmental clearances. Its biodiversity study of the Dibang Valley area identified several protected species but faced criticism for limited study duration and inconclusive data on tiger presence. WII's work influences policy but sometimes generates debate over data adequacy and methodology in ecologically sensitive zones.

#### WHY IN NEWS?

The WII biodiversity study was used by the Forest Advisory Committee to grant in-principle clearance for the Etalin hydroelectric project despite conservationist concerns about study limitations.

### Zeliang Community Reserve

The **Zeliang Community Reserve** is a protected forest area located in Peren district, Nagaland. It is managed jointly by local communities and the Forest Department to conserve wildlife and biodiversity. The reserve supports a variety of flora and fauna, including endangered species. It is part of a network of community and conservation reserves in Nagaland that complement national parks and wildlife sanctuaries. The reserve employs community-based conservation strategies, involving locals as guardians and data collectors, which has helped improve wildlife protection and forest health over the years.

#### WHY IN NEWS?

The Zeliang Community Reserve was chosen for the reintroduction of the Asian giant tortoise following a habitat suitability study in Nagaland, denoting its importance in regional conservation efforts.



## History (India / World) & Culture

### Abhinav Bharat Trust

The **Abhinav Bharat Trust** is an organization linked to Hindu nationalist ideology, named after the original Abhinav Bharat Society founded by Vinayak Damodar Savarkar in the early 20th century. It operates as a trust involved in cultural and social activities promoting Hindu heritage. The modern trust has been scrutinized for alleged connections to extremist activities, but official sanction or direct ties to government or military agencies have never been conclusively proven. It is distinct from the original Abhinav Bharat Society, which was a revolutionary group against British rule. The trust has been involved in controversies regarding funding and political influence.

#### WHY IN NEWS?

Colonel Prasad Purohit was identified as a trustee of the Abhinav Bharat Trust during the Malegaon blast case, with the court noting no official sanction for his association with the trust.

### Adichanallur Site

Adichanallur, located in Tamil Nadu's Thoothukudi district, was first excavated in the early 20th century by British archaeologist Alexander Rea. The site contains Iron Age artefacts over **3,000 years old**. Excavations resumed in 2004 under ASI leadership after a century-long neglect. Despite discoveries, the publication of findings was delayed over 15 years, requiring court intervention. The site is crucial for understanding South Indian prehistoric cultures and their material traditions.

#### WHY IN NEWS?

The ASI's delayed publication and handling of Adichanallur findings parallel controversies surrounding Keeladi, denoting institutional challenges in Indian archaeology.

### Bhati Clan of Jaisalmer

The **Bhati Rajputs** ruled the princely state of Jaisalmer from the 12th century onward. Known for their desert fort and strategic location on trade routes, they maintained autonomy even during Mughal and Maratha expansions. The Bhatias built the **Jaisalmer Fort**, one of the largest fully preserved fortified cities in the world. They resisted full Maratha control, paying no regular tribute. Their governance combined martial prowess with diplomacy, navigating alliances with larger powers while preserving sovereignty. The clan's historical records emphasize their independence from Maratha authority in the 18th century.

#### WHY IN NEWS?

Jaisalmer's inclusion in the Maratha empire map in NCERT textbooks was challenged by descendants of the Bhati clan, citing no historical Maratha rule over their territory.

### Bhujodi Weave

Bhujodi is a small weaving village near Bhuj in the Kutch district of Gujarat, known for its **distinctive handloom weaving tradition**. The weavers, primarily from the Vankar community, produce intricate wool and cotton textiles using traditional pit looms. Bhujodi



textiles often feature **geometric patterns and vibrant colors**, reflecting the cultural heritage of the region. The craft dates back to the 14th century and has been sustained through generations. Bhujodi weaving is recognized for its **use of natural dyes** and double ikat tie-dye techniques. The village is a protected craft cluster under government initiatives to promote handlooms.

#### WHY IN NEWS?

Bhujodi weaving is featured in the Know Your Weaves Campaign 2025 exhibition showcasing India's diverse handloom traditions, denoting its cultural and artisanal significance.

### C. Subramaniam

**C. Subramaniam** (1910–2000) was an Indian politician and Minister of Agriculture credited with accelerating India's Green Revolution. A physics graduate, he prioritized agricultural development and enabled critical funding for field trials of high-yield wheat varieties. He convened key scientists, including M.S. Swaminathan, and supported the import of Mexican wheat seeds despite bureaucratic and political opposition. His technical background distinguished him from many contemporaries, allowing him to grasp scientific complexities and promote research. Subramaniam's leadership helped transform India from a food-deficit nation to a self-sufficient one in grain production.

#### WHY IN NEWS?

The article marks Subramaniam's role in overcoming bureaucratic hurdles during the Green Revolution, emphasizing the need for scientifically knowledgeable political leaders.

### Central Legislative Assembly

The **Central Legislative Assembly** was the lower house of the Imperial Legislative Council under British India, established in 1919 by the Government of India Act. It functioned as a legislative body until 1947, playing a vital role in the gradual introduction of representative governance. The Assembly had limited powers but was a platform for Indian leaders to debate colonial policies and push for reforms. It consisted of elected and nominated members representing provinces and communities. The Assembly's significance lies in its role as a precursor to the modern Indian Parliament and a training ground for future legislators and freedom fighters.

#### WHY IN NEWS?

The centenary celebration of Vitthalbhai Patel's election as Speaker marks the historical importance of the Central Legislative Assembly.

### Channapatna Wooden Toys

Channapatna wooden toys originate from Channapatna town in Karnataka, known for its traditional craft of lacquering and turning wood on a lathe. The craft dates back over 200 years and uses natural dyes derived from plants. These toys are lightweight, durable, and eco-friendly, often depicting animals, dolls, and everyday objects. The craft is protected under the Geographical Indication (GI) tag, ensuring authenticity. Artisans use ivory wood and apply multiple layers of lacquer for a glossy finish. The toy-making technique was



popularized by Tipu Sultan and remains a cultural heritage symbol of Karnataka's craftsmanship.

#### WHY IN NEWS?

Channapatna wooden toys are featured as part of the traditional crafts exhibition at the Lok Samvardhan Parv in Kochi, denoting minority artisans' skills and promoting regional crafts nationally.

### **Chauth and Sardeshmukhi**

**Chauth** was a **25% tax** levied by the Marathas on territories under their influence but not directly controlled. **Sardeshmukhi** was an additional **10% tax** imposed as a hereditary right of the Maratha chiefs. These taxes were primarily collected from zamindars and local rulers as tribute. The system allowed Marathas to expand economically without full political annexation. Both taxes were sources of revenue and symbolized Maratha supremacy without direct administration. The practice differentiated **economic tribute** from political sovereignty in the 18th century Indian polity.

#### WHY IN NEWS?

The controversy over the NCERT map involves depiction of territories like Jaisalmer as part of the Maratha empire, raising questions about economic tribute versus political control, where chauth and sardeshmukhi were key factors.

### **Cripps Mission**

The **Cripps Mission** was a British initiative in March 1942 aimed at securing Indian cooperation during World War II by promising post-war self-governance. Led by Sir Stafford Cripps, it proposed a dominion status for India after the war but allowed provinces to opt out. The mission failed as Indian leaders demanded immediate independence, not conditional promises. It deepened distrust between British authorities and Indian nationalists. The mission's failure was a key trigger for the Quit India Movement. It is often overshadowed by later events but was crucial in escalating India's push for freedom.

#### WHY IN NEWS?

The Cripps Mission's failure in 1942 set the stage for the Quit India Movement, which is commemorated annually on August Kranti Diwas, marking its 83rd anniversary in 2025.

### **Daruma Doll**

The **Daruma Doll** is a traditional Japanese papier-mâché figure modeled after **Bodhidharma**, the 5th-century founder of Zen Buddhism. It symbolizes perseverance and good luck, often used in goal-setting rituals where one eye is colored upon setting a goal and the other upon achievement. Its rounded bottom allows it to return upright when tipped, embodying the proverb Fall seven times, stand up eight. Sizes vary from a few inches to several feet. The doll's design reflects Bodhidharma's meditation posture, lacking limbs and eyes initially, representing endurance and focus.

#### WHY IN NEWS?

Prime Minister Narendra Modi was presented with a Daruma Doll by Rev Seishi Hirose during his visit to Japan, denoting its cultural significance and Indo-Japanese connections.



## Dhanvantari Jayanti

Dhanvantari Jayanti, also known as Dhanteras, is a Hindu festival dedicated to **Dhanvantari**, the god of Ayurveda and health. It falls two days before Diwali and marks the beginning of the five-day festival. Dhanvantari is believed to have emerged from the churning of the ocean (Samudra Manthan) carrying the nectar of immortality (Amrita). The day is considered highly auspicious for purchasing gold, silver, and utensils as symbols of prosperity and health. Ayurveda Day was traditionally celebrated on this day until 2025, linking the festival's spiritual significance with health and wellness.

### WHY IN NEWS?

Ayurveda Day, previously observed on Dhanvantari Jayanti, was reassigned a fixed date of 23 September starting 2025 to provide Ayurveda a universal calendar identity.

## Dhiri (Goan Bullfighting)

Dhiri, also known as dhirio, is a traditional form of bullfighting practiced in Goa. Unlike Spanish bullfighting, dhiri involves two bulls locking horns and pushing each other until one retreats or is pushed out of the arena; the bulls are not killed. Historically held in paddy fields and football grounds, dhiri is linked to harvest festivals and church celebrations. Bulls are carefully selected and trained, and fights can last from minutes to over an hour. The practice dates back to Portuguese colonial times, with bulls often named after popular culture icons like Mike Tyson and Rambo. The sport is currently illegal but still clandestinely practiced.

### WHY IN NEWS?

Goan legislators recently demanded the legalisation of dhiri, citing its cultural importance, despite a court ban and animal rights opposition. The issue has sparked renewed debate on tradition versus animal cruelty laws.

## Dholavira

Dholavira is an archaeological site of the ancient Indus Valley Civilization located in the Kutch district of Gujarat. It dates back to approximately 3000 BCE and is known for its advanced urban planning, including a sophisticated water conservation system with reservoirs and channels. Excavations revealed a well-structured city with distinct citadel, middle town, and lower town areas. Dholavira is one of the five largest Harappan sites and exhibits unique signs and script found on seals. The site provides vital information about early urban development and trade practices in South Asia.

### WHY IN NEWS?

The new railway line project includes connectivity to the Harappan site of Dholavira, aiming to promote archaeological tourism and improve regional accessibility.

## Gugga (Guggapir)

Gugga, also called Guaaji by Hindus and Guggapir or Gugga Zahir Pir by Muslims, was a Rajput prince from the Agni Vamsa lineage of the Chauhan clan. Son of King Jewar and Queen Bacchan, he is depicted riding a blue horse and holding blue and yellow flags. Gugga is believed to have divine powers over poisonous snakes, protecting devotees from



snakebites and curing ailments. Mothers pray to him for their children's well-being, and barren women seek his blessings for offspring. His veneration crosses religious boundaries, reflecting syncretic folk traditions in North India.

#### WHY IN NEWS?

The figure of Gugga remains central to the current Gugga Naumi celebrations, symbolizing communal harmony and folk healing traditions.

### Gurbani

Gurbani literally means Guru's word and refers to the sacred hymns and verses composed by Sikh Gurus and other saints included in the Guru Granth Sahib and other Sikh scriptures. These verses are recited in Sikh worship and are considered the ultimate spiritual authority. Gurbani is written primarily in Gurmukhi script and includes compositions in several languages such as Punjabi, Braj, Persian, and Sanskrit. It guides Sikhs in meditation, ethical conduct, and devotion. The correct pronunciation and interpretation of Gurbani are vital in Sikh practice, and any alteration is considered sacrilegious.

#### WHY IN NEWS?

The SGPC has condemned AI-generated content that presents incorrect versions of Gurbani, calling for removal of such distorted material from digital platforms.

### Hastkala Academy

The Hastkala Academy, located in New Delhi, is a premier institution dedicated to the preservation and promotion of traditional Indian handicrafts and handlooms. Established in the early 2000s, it functions under the Ministry of Textiles and offers **training, research, and documentation** programs. The academy collaborates with artisans across India to sustain indigenous crafts and provides skill development workshops to younger generations. Hastkala Academy also hosts exhibitions, seminars, and campaigns to increase public awareness of India's cultural heritage. It plays important role in bridging traditional craftsmanship with contemporary design and markets.

#### WHY IN NEWS?

The Know Your Weaves Campaign 2025 was held at the National Crafts Museum & Hastkala Academy, making the institution a focal point for handloom promotion activities.

### Kodali Karuppur Silk Sari

The Kodali Karuppur silk sari originates from **Karuppur village near Kumbakonam** and was historically patronised by the Maratha kings of Thanjavur. It features a unique combination of **hand painting, block printing, and brocade-weaving**. This luxury textile was popular until the 19th century and includes saris, dhotis, and furnishings. The weaving techniques are intricate, blending multiple traditional crafts. The sari is currently in decline, with efforts underway to revive the skills and heritage associated with its production. Kodali Karuppur silk saris are distinct from other regional silk varieties due to their complex artistic methods.

#### WHY IN NEWS?

There are plans to revive the traditional weaving skills needed to produce Kodali Karuppur



silk saris, which have been fading due to economic challenges and declining artisan numbers.

### **Koli Community**

The Koli community is an indigenous fishing tribe primarily residing in Mumbai, Thane, and Palghar districts of Maharashtra. They are considered the original inhabitants of these regions. Traditionally, the Kolis are known for their expertise in fishing and maritime activities. Their social structure includes clan-based groups, and they have distinct cultural practices, including traditional dances and attire. The Kolis celebrate festivals like Narali Purnima to honor the sea and their livelihood. They have historically resisted urbanization pressures while maintaining their cultural identity amidst the expanding metropolis of Mumbai.

#### WHY IN NEWS?

The Koli community celebrated Narali Purnima with traditional dances and rituals in their colonies, denoting their role as Mumbai's original fishermen.

### **Pasang Wangchuk Sona**

Pasang Wangchuk Sona was a respected educator and advocate for education in Arunachal Pradesh. He was known for his lifelong dedication to improving access to quality education in remote areas, particularly in the Shi-Yomi district. His efforts helped raise educational standards and inspired community involvement in schools. The naming of the new ISRO space laboratory after him honors his belief in education as a transformative tool. He was the father of Pasang Dorjee Sona, the current Education Minister of Arunachal Pradesh, and his legacy continues to influence educational initiatives in the region.

#### WHY IN NEWS?

The newly inaugurated space laboratory in Mechuka was named Pasang Wangchuk Sona ISRO Space Laboratory to honor his contributions to education.

### **Ram Prasad Bismil**

Ram Prasad Bismil (1897–1927) was an Indian revolutionary poet and freedom fighter, notable for his role in the Kakori Train Action. He was a founding member of the Hindustan Republican Association. Bismil wrote patriotic poems and essays promoting revolution against British rule. He was arrested after the Kakori incident and sentenced to death by the British colonial government. Bismil was executed by hanging on December 19, 1927. His literary works include "Sarfaroshi Ki Tamanna," a poem that became a rallying cry for Indian revolutionaries. His sacrifice inspired many youth to join the independence movement.

#### WHY IN NEWS?

Ram Prasad Bismil was honored on the centenary of the Kakori Train Action for his leadership and martyrdom in the fight against British colonial rule.

### **Satra Lands**

Satra lands are properties owned by **Vaishnav monasteries** in Assam, historically linked



to the neo-Vaishnavite movement started by Srimanta Sankardev in the 15th-16th centuries. As of 2025, the Assam Chief Minister reported that approximately 15,288.52 bighas of Satra lands were illegally occupied across 29 districts. These lands are considered sacred and integral to Assamese cultural and religious identity. Illegal occupation of Satra lands has been a contentious issue, with the government emphasizing their repossession as part of the eviction drive. The lands are protected under specific religious and cultural laws, making their encroachment a sensitive socio-political matter.

#### WHY IN NEWS?

The Assam government cited illegal occupation of over 15,000 bighas of Satra lands in its 2025 eviction campaign, framing it as a priority in reclaiming culturally property.

### Shakya Kingdom

The **Shakya kingdom** was an ancient realm in the northern Indian subcontinent, historically associated with the early life of Lord Buddha, who was born as Prince Siddhartha in its capital, Kapilvastu. The Shakyas were a warrior clan and part of the larger Vedic culture. Kapilvastu, now in modern Nepal and India, was cultural and political center. The kingdom declined after Buddha's time but remains central to Buddhist heritage. Archaeological sites linked to the Shakya kingdom, such as Piprahwa, contain stupas and relics that provide evidence of early Buddhist history.

#### WHY IN NEWS?

Piprahwa stupa, linked to the Shakya kingdom, is being developed as a Buddhist tourism site to showcase relics and heritage connected to Lord Buddha's early life.

### Shravan Purnima

Shravan Purnima is the full moon day in the Hindu month of Shravan, typically falling in July or August. It marks several religious observances including Raksha Bandhan, where sisters tie protective threads on brothers' wrists, and Upakarma, a ritual for renewing the study of Vedas. This day is considered highly auspicious for spiritual practices and is linked to the monsoon season in India. The lunar calendar date varies annually, affecting the timing of these festivals. Shravan Purnima is also in various Indian regional traditions for fasting and prayer ceremonies.

#### WHY IN NEWS?

World Sanskrit Day is celebrated annually on Shravan Purnima, linking the observance of the ancient language with this culturally rich lunar date.

### Swadeshi Movement

The **Swadeshi Movement** began on August 7, 1905, as a direct response to the British decision to partition Bengal. It aimed to boycott British goods and revive indigenous industries, especially handloom textiles. The movement promoted the use of Indian-made products, languages, arts, and crafts to encourage self-reliance. It played a critical role in India's struggle for independence by uniting people through economic nationalism. The movement's emphasis on hand-spun Khadi fabric became a potent symbol of resistance. It influenced later leaders and movements, including Mahatma Gandhi's promotion of Khadi



as a symbol of Indian identity and freedom.

#### WHY IN NEWS?

The Swadeshi Movement is commemorated annually on National Handloom Day, observed on August 7, marking its 11th anniversary in 2025.

### Vitthalbhai Patel

**Vitthalbhai Patel** (1873–1955) was the first elected Speaker of the Central Legislative Assembly in India, serving from 1921 to 1925. He was a prominent lawyer and freedom fighter closely associated with the Indian National Congress. Patel played a key role in shaping parliamentary procedures and promoting democratic practices during British rule. He was the elder brother of Vallabhbhai Patel, a leading figure in India's independence movement. Vitthalbhai also contributed to the development of legal education and was an advocate for social reforms, including Hindu-Muslim unity. His tenure as Speaker marked transition toward self-governance in colonial India.

#### WHY IN NEWS?

The All India Speakers Conference is commemorating the centenary of Vitthalbhai Patel assuming the Speaker's office, with events including an exhibition, documentary, and postage stamp launch.

## Science & Technology

### AlphaProof

AlphaProof is a formal proof system developed by Google-DeepMind that integrates automated theorem proving with AI reasoning capabilities. It participated in the 2024 International Mathematical Olympiad, achieving a silver medal score by running computations and proof checks over two days. AlphaProof combines symbolic reasoning with machine learning to verify complex mathematical arguments. It is designed to reduce errors typical in AI-generated proofs by rigorously checking each logical step. Its development represents a milestone in combining AI with formal methods, enabling AI to handle challenging mathematical tasks with greater accuracy than previous models relying solely on natural language processing.

#### WHY IN NEWS?

AlphaProof's performance at IMO 2024 demonstrated the potential of AI-assisted formal proof verification, paving the way for subsequent AI systems to achieve gold medal-level scores in 2025.

### Animal Stem Cell Biobank

The **Animal Stem Cell Biobank** is India's first facility dedicated to the collection, preservation, and storage of high-quality stem cells from various animal species. Located at the National Institute of Animal Biotechnology (NIAB), it uses indigenous, cost-effective cell culture media developed in partnership with HiMedia Laboratories. The biobank supports veterinary clinics, research institutions, and the livestock industry by providing quality-controlled stem cells. Preservation of stem cells aids in genetic conservation, disease research, and regenerative therapies for animals. It forms a critical resource for



advancing biotechnology and livestock health management in India.

#### WHY IN NEWS?

Recently, the Union Minister of State for Science & Technology inaugurated this biobank at NIAB, marking a milestone in animal biotechnology and livestock health innovation in India.

### **Artemis III Mission**

Artemis III is a planned NASA lunar mission scheduled for 2027, aiming to land astronauts on the Moon's South Pole. It will be the first crewed lunar landing since Apollo 17 in 1972. The mission will use the Space Launch System (SLS) rocket and Orion spacecraft, with involvement from commercial partners like SpaceX for lunar landing systems. Artemis III aims to establish sustainable exploration infrastructure and conduct scientific research, including ice sampling. The mission is part of NASA's Artemis program, which intends to pave the way for human exploration of Mars and beyond.

#### WHY IN NEWS?

Data from SpaceX's recent Starship flight test will support NASA's Artemis III Moon landing mission planned for 2027, helping refine mission-critical technologies.

### **Artificial Photosynthesis (APS)**

Artificial Photosynthesis (APS) is a technology that mimics natural photosynthesis by converting sunlight, water, and carbon dioxide into fuels like green methanol or ammonia. APS uses catalysts and photoelectrochemical cells to split water molecules and reduce CO<sub>2</sub>, producing energy-rich compounds. Currently, APS remains largely experimental and confined to laboratory research, but it promises a sustainable way to produce carbon-neutral fuels. APS aims to directly capture and convert solar energy into chemical fuels, bypassing the inefficiencies of traditional photovoltaic-electrolysis systems. Its development could revolutionize renewable energy by integrating carbon capture and fuel synthesis in a single process.

#### WHY IN NEWS?

APS was mentioned as a promising future technology to improve energy efficiency and carbon recycling, complementing current renewable energy systems like silicon photovoltaics.

### **BharatGen**

BharatGen is a government-supported initiative to develop sovereign foundational AI models tailored to Indian languages and societal contexts. It covers multiple modalities – text (Large Language Models), speech (Text-to-Speech and Automatic Speech Recognition), and vision-language systems. Initially, it supports 9 Indian languages and plans to cover all 22 scheduled Indian languages by June 2026. BharatGen applications target sectors such as agriculture, governance, and defense, with pilot projects underway. The project is implemented under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) by the Department of Science and Technology (DST). It aims for nationwide deployment across states and districts.



## WHY IN NEWS?

BharatGen is expanding language coverage and piloting AI applications in key sectors, marking progress in India's sovereign AI development initiatives by August 2025.

**Bharatiya Antariksh Station**

The Bharatiya Antariksh Station is India's planned space station, expected to be operational by 2035. It will weigh approximately **52 tonnes** and be constructed in five modules. The first module is slated for launch in 2028. The station aims to support long-duration human spaceflight and scientific research in microgravity. It will be India's first independent orbital habitat, enabling extended crewed missions beyond the Gaganyaan program. The project represents a major advancement in India's human spaceflight capabilities and space infrastructure development.

## WHY IN NEWS?

ISRO reaffirmed its commitment to completing the Bharatiya Antariksh Station by 2035, with the first module launch planned for 2028, marking milestone in India's space ambitions.

**Biofoundry Network**

The National Biofoundry Network in India comprises six institutions designed to accelerate biomanufacturing and scale proof-of-concept developments. Biofoundries integrate automation, robotics, and computational tools to optimize synthetic biology workflows. These facilities enable rapid design-build-test cycles for biological engineering, reducing time and cost for biotech innovations. The network supports indigenous biomanufacturing, encouraging innovation in health, agriculture, environment, and industry. It provides infrastructure and expertise to startups and researchers, enhancing India's capacity in biotechnology. Biofoundries play a key role in developing sustainable bio-solutions and creating employment in the bioeconomy sector.

## WHY IN NEWS?

Launched as part of the BioE3 Policy anniversary, the National Biofoundry Network aims to scale indigenous biomanufacturing and boost India's bioeconomy through advanced synthetic biology infrastructure.

**CAR-T Cell Therapy**

CAR-T cell therapy is an advanced immunotherapy technique where a patient's T-cells are genetically modified to target cancer cells. It is used primarily to treat certain blood cancers such as leukemia and lymphoma. The therapy involves extracting T-cells, engineering them to express chimeric antigen receptors (CARs), and reinfusing them to attack tumors. India is prioritizing development and clinical application of CAR-T therapies, aiming to improve accessibility and outcomes for life-threatening diseases. The therapy requires complex manufacturing and regulatory oversight due to its personalized nature and potential side effects like cytokine release syndrome.

## WHY IN NEWS?

India is making strides in CAR-T cell therapy development as part of its broader focus on cutting-edge pharmaceutical innovation and novel treatment modalities for cancer.



## Centre for Development of Telematics (C-DOT)

C-DOT is an autonomous R&D organization under India's Department of Telecommunications, established in 1984. It focuses on developing telecom technologies tailored for Indian needs, including digital switches and broadband solutions. C-DOT developed the first indigenous digital switching system in the 1980s. It plays a key role in advancing telecom infrastructure in India, often collaborating with PSUs for production. C-DOT's innovations include rural communication technologies and broadband wireless access systems. It is also involved in policy advisory and standardization efforts for Indian telecom networks.

### WHY IN NEWS?

C-DOT designed the SAKSHAM-3000 switch-cum-router, which is now being commercialized and showcased in telecom exhibitions.

## Chiton

Chitons are marine molluscs belonging to the class Polyplacophora, characterized by eight overlapping calcareous plates on their dorsal side. They use a radula, a tongue-like organ with rows of teeth, to scrape algae off rocks. Their teeth are coated with **magnetite**, an iron oxide mineral, making them the hardest known biological material. Chitons continuously replace their teeth as they wear down. They inhabit intertidal and subtidal zones worldwide, often in rocky coastal areas. Their evolutionary lineage dates back over 400 million years, making them one of the oldest mollusc groups.

### WHY IN NEWS?

A 2025 study revealed chiton teeth are harder than stainless steel and human enamel due to their unique magnetite composition, inspiring new materials science innovations.

## Coronal Mass Ejections (CMEs)

Coronal Mass Ejections are large expulsions of plasma and magnetic field from the Sun's corona into space. They can release billions of tons of solar material traveling at millions of kilometers per hour. CMEs are a primary driver of geomagnetic storms on Earth, which can disrupt satellites, power grids, and communication systems. Their interaction with Earth's magnetosphere can cause auroras at lower latitudes. CMEs were first observed in the 1970s using space-based coronagraphs. Forecasting CMEs remains challenging due to their complex magnetic structures and variable speeds, making advanced prediction models like Surya essential for mitigating their effects.

### WHY IN NEWS?

Surya AI aims to predict CMEs more accurately and earlier than traditional methods, improving space weather preparedness.

## Counterpoint Research

Counterpoint Research is a global market research firm specializing in technology, telecom, and consumer electronics sectors. Founded in 2013, it provides data-driven insights and analysis for emerging markets and established industries. The firm is known for its detailed reports on smartphone shipments, semiconductor trends, and AI adoption



metrics. It uses proprietary methodologies combining primary research and data analytics. Counterpoint's AI City Index ranks cities worldwide based on AI ecosystem maturity, infrastructure, investment, and talent availability. The firm collaborates with major technology companies and governments to guide strategic decision-making in innovation and policy development.

#### WHY IN NEWS?

Counterpoint Research released the 2025 AI City Index report, ranking Bengaluru as the leading AI hub in India and 26th globally, denoting emerging trends in AI ecosystems across cities worldwide.

### DIGIPIN

The **10-digit alphanumeric DIGIPIN** is a unique digital identification code introduced by India Post to improve parcel tracking and delivery accuracy. It combines letters and numbers for enhanced security and reduces errors in sorting and delivery. DIGIPIN is generated for each transaction and linked to the recipient's details, enabling OTP-based verification. This system supports QR-code payments and real-time tracking, streamlining postal operations. DIGIPIN's design helps integrate India Post's services with digital payment gateways and customer authentication mechanisms, contributing to a more reliable and transparent postal ecosystem.

#### WHY IN NEWS?

DIGIPIN is part of the new IT 2.0 system launched by India Post to enhance delivery accuracy and digital payment integration nationwide.

### Digital Blue India Platform

This emerging digital initiative integrates **IoT and blockchain technologies** to revolutionize pond monitoring and traceability in inland fisheries. It aims to provide real-time data on water quality, fish health, and disease outbreaks by linking state labs to a national dashboard. The platform supports transparency, biosecurity, and efficient resource management. It also facilitates better market access and consumer trust through traceability of fish products. By enabling data-driven decision-making, the platform seeks to optimize production, reduce risks, and enhance sustainability in India's inland aquaculture sector.

#### WHY IN NEWS?

Proposed as part of modernization efforts, the platform represents a technological leap to support India's inland fisheries growth and disease surveillance programs.

### Digital Swaraj Mission

The **Digital Swaraj Mission** is an initiative aimed at reducing India's dependence on foreign, primarily US-based, digital infrastructure and software. It emphasizes the development of indigenous alternatives to cloud services, operating systems, office suites, and social media platforms by 2030. The mission advocates transitioning government and defense systems from Windows to Linux or local OS and scaling up the national cloud MeghRaj. It promotes data sovereignty by mandating local data storage and encouraging



home-grown cybersecurity solutions developed by institutions like C-DAC and DRDO. This initiative aligns with India's broader goal of digital self-reliance and resilience in the global technology ecosystem.

#### WHY IN NEWS?

The Digital Swaraj Mission is brought into light as a strategic response to US tariffs and digital control risks, aiming to safeguard India's digital sovereignty and reduce vulnerability to foreign software disruptions.

### **Earth Observation Satellite-09 (EOS-09)**

EOS-09 is an Indian Earth observation satellite designed primarily for meteorological and environmental monitoring in a **sun-synchronous polar orbit**. It carries advanced remote sensing instruments to monitor atmospheric parameters, including temperature and humidity profiles. EOS-09 was intended to improve weather forecasting and climate research capabilities for India. The satellite was developed by ISRO's Space Applications Centre and is part of the EOS series, which supports disaster management and agricultural planning. Its failure to reach orbit in 2025 delayed enhancements in meteorological data quality and availability for India's weather services.

#### WHY IN NEWS?

EOS-09 was the payload on the PSLV-C61 mission that failed in May 2025, preventing its deployment and impacting India's meteorological satellite network.

### **Gaganyaan Crew Escape System (CES)**

The **Gaganyaan Crew Escape System (CES)** consists of five different types of motors designed to rapidly separate the crew module from the launch vehicle in emergencies. These motors have undergone static testing to ensure performance reliability. The CES is engineered to activate during critical launch phases to protect astronauts from potential launch failures. It is a key safety feature for human-rating the Gaganyaan mission, enabling quick escape and recovery of the crew module. The system's development marks advancement in India's crewed spaceflight safety technology.

#### WHY IN NEWS?

Union Minister Jitendra Singh brought into light the completion of CES motor development and testing in preparations for the Gaganyaan mission.

### **Geespace**

**Geespace** is a **low-Earth orbit (LEO) satellite operator** under China's Geely Holding Group, focusing on commercial IoT applications. It operates a growing constellation of satellites, having launched 41 satellites by August 2025, with plans to reach 72 by year-end. Geespace aims to enable intelligent mobility through its Geely Future Mobility Constellation, integrating satellite IoT communications and high-precision positioning for smart vehicle connectivity and safety. It has partnerships with telecom operators in over 20 countries across the Middle East, Southeast Asia, Africa, and Latin America. The company achieved a 99.15% commercial testing success rate and 99.97% network availability.



## WHY IN NEWS?

Geespace launched 11 new satellites from a sea-based platform, expanding its LEO constellation to 41 satellites, marking Geely's first sea-based satellite launch and accelerating its global IoT connectivity ambitions.

**Generative AI Antibiotics**

Generative AI antibiotics are drugs designed using AI algorithms that generate novel molecular structures. At MIT, researchers used **generative AI** to scan millions of molecules, predicting those with antibacterial properties but avoiding harmful or redundant structures. Two new antibiotics discovered this way effectively kill drug-resistant gonorrhoea and MRSA. This method accelerates drug discovery, reducing costs and time compared to traditional approaches. The AI-designed molecules represent a new class of antibiotics, potentially reviving antibiotic development after decades of stagnation. The approach can address antimicrobial resistance, responsible for over one million deaths annually worldwide.

## WHY IN NEWS?

MIT scientists developed two new antibiotics using generative AI to combat drug-resistant bacteria, marking a breakthrough in antibiotic discovery and addressing the global antimicrobial resistance crisis.

**GlpD Gene**

The *glpD* gene encodes glycerol-3-phosphate dehydrogenase, an enzyme involved in glycerol metabolism. In *Pseudomonas aeruginosa*, *glpD* expression varies widely among individual cells despite being a high expression gene (HEG). This gene's expression correlates with pathogenicity, as cells with higher *glpD* levels are more virulent. The gene's promoter fused with GFP allowed visualization of its expression in real time, revealing bistability. The presence of glycerol increases the proportion of cells expressing *glpD*. Deletion of *glpD* reduces *P. aeruginosa*'s ability to infect greater wax moth larvae, linking it to infection success.

## WHY IN NEWS?

The *glpD* gene's bistable expression was reported to affect *Pseudomonas aeruginosa*'s pathogenicity, providing vital information about infection mechanisms and potential therapeutic targets.

**Greater Wax Moth Larvae (*Galleria mellonella*)**

*Galleria mellonella* larvae are used as an infection model in microbiology due to their innate immune system similarities to mammals. They are natural parasites of honeycombs and can be easily infected with human pathogens to study virulence and host-pathogen interactions. Their use allows for cost-effective, ethical, and rapid assessment of microbial pathogenicity and antimicrobial treatments. The larvae's immune response includes cellular and humoral components, making them suitable for studying bacterial infections, including those by *Pseudomonas aeruginosa*. The model has gained popularity for testing gene function in pathogens and drug efficacy.



## WHY IN NEWS?

Researchers used *Galleria mellonella* larvae to demonstrate that deletion of the *glpD* gene in *Pseudomonas aeruginosa* reduced its lethality, linking gene expression to infection severity.

**HDV-RNA Test**

The HDV-RNA test detects hepatitis D virus RNA in blood, confirming active HDV infection. It is the primary diagnostic tool for hepatitis D, distinguishing current infection from past exposure. The test measures viral load, aiding in disease monitoring and treatment decisions. It is more sensitive and specific than antibody tests alone. HDV-RNA testing is essential because HDV infection worsens liver disease in HBV carriers and requires different clinical management. Availability of the test varies globally, often limited in resource-poor settings.

## WHY IN NEWS?

Accurate diagnosis through HDV-RNA testing is critical following WHO's carcinogen classification of hepatitis D to improve surveillance and patient care.

**IndiaAI Mission**

The IndiaAI mission is a government-led initiative aimed at democratizing artificial intelligence across India. It focuses on developing indigenous Large and Small Language Models trained on Indian datasets to capture diverse dialects and cultural nuances. The mission supports over 1,000 India-specific datasets and 200+ AI models through the AIKosh platform, promoting open-source innovation. It targets sectors like healthcare, agriculture, education, and governance, emphasizing accountability, safety, fairness, and privacy protection. The mission also includes the IndiaAI Safety Institute to regulate AI use and curb misinformation, deepfakes, and digital abuse through comprehensive legal frameworks.

## WHY IN NEWS?

IndiaAI mission is brought into light for its role in advancing India's AI ecosystem, supporting startups, and hosting global AI summits in 2026, showcasing India's leadership in responsible AI innovation.

**Integrated Air Drop Test (IADT)**

The **Integrated Air Drop Test (IADT)** is a specialised trial conducted by ISRO to validate the performance of the parachute-based deceleration system for the Gaganyaan crew module. It involves dropping a dummy capsule weighing approximately five tonnes from a helicopter at altitude, testing the sequential deployment of parachutes to ensure safe deceleration and splashdown. The test simulates real-world conditions to confirm the reliability of the system during descent, particularly after atmospheric re-entry. The IADT is crucial for human-rating the spacecraft's recovery system and is part of the end-to-end demonstration of crew safety mechanisms.

## WHY IN NEWS?

ISRO recently completed its first successful IADT as a critical step in preparing for India's maiden human spaceflight mission, Gaganyaan.



## Jai Vigyan Slogan

“Jai Vigyan” (hail science) is a slogan popularized by former Prime Minister Atal Bihari Vajpayee, who added it to Lal Bahadur Shastri’s original slogan “Jai Jawan, Jai Kisan” to emphasize the importance of science and technology in national development. The phrase symbolizes India’s commitment to scientific research and innovation as pillars of progress. It was later complemented by “Jai Anusandhan” (hail research) under Narendra Modi’s government, reinforcing the focus on research and development. The slogan reflects India’s strategic vision to integrate science with agriculture, defense, and industry for sustainable growth.

### WHY IN NEWS?

The article mentions the evolution of India’s patriotic slogans, denoting “Jai Vigyan” as a symbol of the country’s scientific and technological aspirations.

## Kavach Automatic Train Protection System

Kavach is an indigenous train safety system developed by the Research Designs & Standards Organisation (RDSO) of Indian Railways. It operates at Safety Integrity Level 4 (SIL 4), the highest safety standard. Development began in 2015, with over three years of testing before the first operational certificate in 2018 on South Central Railway. Kavach 4.0, an advanced version, was approved in May 2025 for speeds up to 160 km/h. It helps prevent accidents by monitoring and controlling train speeds, minimizing human error, and providing in-cab signal information, especially useful in low visibility conditions like fog. Components are manufactured indigenously.

### WHY IN NEWS?

Kavach 4.0 was recently commissioned on the Mathura-Kota section of the Delhi-Mumbai high-density route, marking a major step in modernizing Indian Railways’ safety systems under the Atmanirbhar Bharat initiative.

## LEAP-1 Mission

**LEAP-1** is the first commercial satellite mission by Dhruva Space, scheduled for launch on SpaceX’s Falcon 9 in Q3 2025. It uses the **P-30 satellite platform**, which was space-qualified during the LEAP-TD mission aboard ISRO’s PSLV-C58 in January 2024. The mission carries two payloads – Akula Tech’s Nexus-01 AI module and Esper Satellites’ OTR-2 hyperspectral imager. It exemplifies Indo-Australian collaboration with US support. LEAP-1 integrates Ground Station-as-a-Service (GSaaS) and the Integrated Space Operations & Command Suite (ISOCS) for real-time mission management and data downlinking, aiming to enhance applications in defense, agriculture, and environmental monitoring.

### WHY IN NEWS?

Dhruva Space is launching LEAP-1, marking its transition to commercial satellite deployments with international collaboration and advanced onboard AI and hyperspectral imaging technologies.

## Next Generation Launch Vehicles (NGLV)

The **Next Generation Launch Vehicles (NGLV)** are a series of advanced launch vehicles



under development by ISRO to replace or supplement existing rockets like the LVM3. Designed with semi-cryogenic engines, they aim to increase payload capacity to up to 30,000 tonnes into low Earth orbit. NGLVs focus on cost-efficiency, reusability, and enhanced performance to support heavier satellites and human spaceflight missions. Their development integrates advanced fluid systems and propellant storage technologies. The program aligns with India's ambitions for interplanetary exploration and crewed lunar landings planned for the 2030s and 2040s.

#### WHY IN NEWS?

NGLVs will be supported by the new Third Satellite Launch Pad, enabling ISRO to launch heavier payloads and support future human spaceflight and interplanetary missions.

### **Notch Signalling**

**Notch signalling** is a conserved cell-to-cell communication pathway crucial for cellular differentiation, tissue development, and homeostasis in multicellular organisms. It involves interaction between Notch receptors and ligands on adjacent cells, triggering proteolytic cleavage and nuclear translocation of the Notch intracellular domain to regulate gene expression. Notch signalling influences processes such as neurogenesis, angiogenesis, and immune cell development. Dysregulation of this pathway is linked to various diseases, including cancer and congenital disorders. It is essential for T cell lineage commitment from hematopoietic progenitors in the thymus. No effective soluble activators existed until recent synthetic protein agonists were developed.

#### WHY IN NEWS?

Harvard scientists engineered synthetic soluble activators of Notch signalling using AI-designed proteins to enhance T cell production, improving immunotherapy and vaccine responses against cancer and viral infections.

### **Optical Inter-Satellite Links**

Optical inter-satellite links (OISLs) use laser beams to connect satellites directly in space, enabling high-speed data transfer without ground stations. This technology reduces latency and increases network efficiency by routing data through the satellite network itself. OISLs support real-time communication across mega-constellations like Starlink, allowing satellites to form a mesh network. The laser communication requires precise pointing and tracking systems due to the high speed and distance between satellites. OISLs are less susceptible to radio frequency interference and provide secure, high-bandwidth links crucial for continuous global coverage in LEO constellations.

#### WHY IN NEWS?

Optical inter-satellite links are brought into light as a key innovation enabling Starlink's internet in the sky to achieve low latency and global connectivity.

### **PARAM Rudra Supercomputers**

The **PARAM Rudra** supercomputers are India's indigenously designed and manufactured High-Performance Computing (HPC) servers. They feature a fully developed system software stack created within the country. These systems are deployed at premier



research institutions like the Giant Metrewave Radio Telescope (GMRT) in Pune, Inter-University Accelerator Centre (IUAC) in Delhi, and S.N. Bose National Centre for Basic Sciences in Kolkata. PARAM Rudra is the first Indian HPC server class system matching global standards. These supercomputers support advanced research in physics, earth sciences, and cosmology and are manufactured domestically, boosting local electronics industries.

#### WHY IN NEWS?

In September 2024, Prime Minister Narendra Modi dedicated three PARAM Rudra supercomputers to the nation, marking a milestone in India's indigenous supercomputing capabilities under the National Supercomputing Mission.

#### **PARAM Shavak**

PARAM Shavak is a compact, energy-efficient desktop supercomputer developed by C-DAC under the National Supercomputing Mission. It provides high-performance computing capabilities to educational and research institutions that lack access to large supercomputing infrastructure. PARAM Shavak is designed to be cost-effective and portable, enabling wider HPC access for academic research and training. It supports various scientific and engineering applications and helps build computational skills among students and researchers. This desktop supercomputer aligns with NSM's goal of democratizing supercomputing across India, especially in Tier-II and Tier-III cities.

#### WHY IN NEWS?

PARAM Shavak is brought into light as part of NSM's human resource development strategy to expand supercomputing access and training in smaller institutions across India.

#### **Peer Review**

Peer review is a process used to evaluate academic research and funding proposals by independent experts in the same field. It aims to ensure quality, validity, and originality before publication or grant approval. Peer review can be single-blind, double-blind, or open, depending on whether identities of authors and reviewers are concealed. It is a mainstay of scientific integrity and credibility. Despite its strengths, peer review faces criticism for potential biases, conservatism against unorthodox ideas, and gatekeeping that may stifle innovative research. In India, peer review is mandated for research funding to prevent favoritism, but political influence sometimes undermines its impartiality.

#### WHY IN NEWS?

The text references peer review as essential for fair research funding decisions, contrasting it with government-controlled funding that limits academic freedom and stifles innovative research.

#### **Polar Satellite Launch Vehicle-C61 (PSLV-C61)**

The **PSLV-C61** is the 63rd mission of the Indian Space Research Organisation's Polar Satellite Launch Vehicle series, known for its versatility in deploying satellites into polar and sun-synchronous orbits. PSLV is India's first launch vehicle to be equipped with an



onboard computer for autonomous flight control. It uses a four-stage solid-liquid-solid-liquid propulsion system. The PSLV-C61 mission was notable for carrying the Earth Observation Satellite-09 (EOS-09). The PSLV has a track record of over 50 successful launches before this failure, making it a reliable vehicle in ISRO's fleet. The third stage anomaly was critical in this mission's failure.

#### WHY IN NEWS?

The PSLV-C61 mission failed to place EOS-09 into its intended orbit in May 2025, leading to an official failure analysis by ISRO and attention on the vehicle's reliability.

### Project QuILA

Project QuILA is a national technology mission focusing on quantum information and communication technologies. It aims to develop indigenous quantum computing capabilities, quantum cryptography, and secure communication networks. The project involves collaboration among academic institutions, research labs, and defense organizations to build quantum hardware and software ecosystems in India. It supports the Indian Army's modernization by enhancing cybersecurity and secure communication. Project QuILA is part of broader initiatives like INDIAai and Chip-to-Startup to encourage innovation and self-reliance in advanced technology sectors, aligning with national defense and digital sovereignty goals.

#### WHY IN NEWS?

Project QuILA was mentioned by General Dwivedi as a key collaborator in the Indian Army's research partnerships to boost defense technology and cybersecurity.

### Radula

The radula is a ribbon-like, chitinous structure found in molluscs used for feeding. It contains multiple rows of teeth that scrape or cut food before ingestion. In chitons, the radula is adapted to scrape algae off hard rock surfaces and is continuously renewed as teeth wear down. Radular teeth in chitons are mineralized with magnetite, unlike most molluscs that use calcium carbonate. The radula's structure varies widely among mollusc species depending on diet and habitat. It functions both mechanically and chemically, sometimes secreting enzymes to aid digestion. The radula is unique to molluscs and crucial for their survival.

#### WHY IN NEWS?

Chiton radula teeth's unique magnetite composition and regenerative ability have been studied for creating durable, self-repairing synthetic materials.

### SAKSHAM-3000

The **SAKSHAM-3000** is an indigenous high-performance switch-cum-router developed by C-DOT with a switching capacity of **25.6 terabits per second**. It supports multiple network connection types and fits standard equipment racks. It includes features like **hot-swappable cooling fans** and **backup power supplies** ensuring uninterrupted operation. The device supports various network roles such as Leaf, Spine, Super-Spine switches, and Edge or Core routers, making it versatile for data centers and telecom networks.



Production technology has been transferred to PSU **Electronics Corporation of India Ltd. (ECIL)** for large-scale manufacturing.

#### WHY IN NEWS?

The SAKSHAM-3000 was brought into light in a Lok Sabha reply by Minister Dr. Pemmasani Chandra Sekhar, emphasizing its indigenous design and readiness for commercial deployment through ECIL.

### Seville Assembly Line

The **Seville Assembly Line** is the primary production site for the Airbus C-295, located in Seville, Spain. It is operated by Airbus Defence and Space and specializes in manufacturing tactical airlifters and maritime patrol aircraft. The facility incorporates advanced assembly techniques, including modular construction and automated systems, to ensure high precision and efficiency. It has delivered C-295 aircraft to over 20 countries worldwide. The plant also serves as a research and development hub for upgrading the C-295 platform with new avionics, sensors, and mission systems.

#### WHY IN NEWS?

The final batch of 16 C-295s for India was handed over two months ahead of schedule from the Seville assembly line in August 2025.

### Small Language Models

Small Language Models (SLMs) are AI models designed to perform natural language processing tasks with fewer parameters and lower computational requirements compared to large foundational models. SLMs enable localized AI applications, particularly in resource-constrained environments. They support domain-specific tasks and vernacular languages, making AI more accessible and inclusive. India's AI ecosystem is focusing on developing indigenous SLMs to democratize AI innovation, reduce dependency on global tech giants, and ensure competitive, open AI infrastructure. SLMs facilitate edge computing and real-time language processing, critical for diverse linguistic and cultural contexts in India.

#### WHY IN NEWS?

SLMs are part of India's strategy to develop open, interoperable AI ecosystems that support vernacular tools and inclusive innovation, preventing dominance by a few large firms.

### Smart Grid and Micro-Grid Operations

Smart grids integrate digital communication technology with the electrical grid to enhance the monitoring, forecasting, and distribution of electricity. Micro-grids are localized energy systems that can operate independently or in conjunction with the main grid. Both systems use AI for real-time demand forecasting, fault detection, and efficient energy distribution. AI-driven smart grids optimize renewable energy use and reduce wastage. Micro-grids improve resilience during outages and enable integration of distributed energy resources like solar panels. Their deployment is increasing globally to address power reliability, sustainability, and grid modernization challenges, especially in regions



with unstable or limited grid infrastructure.

#### WHY IN NEWS?

Smart grids and micro-grids are discussed as potential solutions to manage the energy consumption and sustainability challenges posed by expanding AI data centers and infrastructure.

### Smithophis Genus

The genus **Smithophis** comprises a group of non-venomous, semi-aquatic snakes native to South and Southeast Asia. These snakes are known for their nocturnal activity and preference for humid, shaded microhabitats near streams. The genus was named in honor of Malcolm Arthur Smith, a British herpetologist. Species in this genus exhibit distinctive banding patterns, which aid in species differentiation. They are primarily found in forested regions at elevations ranging from 900 to 1,200 meters. The genus has seen recent taxonomic revisions with new species descriptions, denoting its evolutionary diversity and ecological specificity.

#### WHY IN NEWS?

A new species, *Smithophis leptofasciatus*, was recently discovered in Mizoram, expanding the known diversity within the genus and emphasizing the region's role in its evolution.

### Socratic AI

Socratic AI refers to artificial intelligence systems designed to engage users through guided questioning based on the Socratic method, encouraging learners to reflect, analyze, and develop critical thinking skills. Unlike traditional AI that delivers direct answers, Socratic AI prompts users to consider their assumptions, evidence, and reasoning processes. It is applied across multiple fields including economics, healthcare, and finance education. This approach supports adaptive dialogue, progressively challenging students to deepen understanding. Early adopters include Northeastern University and the London School of Economics, which report improved student engagement and critical thinking when AI acts as a questioning partner rather than an answer provider.

#### WHY IN NEWS?

Socratic AI is gaining prominence as a transformative educational tool that redefines AI's role from answer engine to thinking partner, with pilot programs showing promising results in global institutions.

### Sounding Rocket Nike Apache

The Nike Apache was a US-made sounding rocket launched by India on November 21, 1963, from Thumba near Thiruvananthapuram. It was transported to the launch site using a **bullock cart**. Sounding rockets like the Nike Apache are suborbital and designed to carry experiments into the upper atmosphere but cannot reach orbit or escape Earth's gravity. This launch marked India's first rocket experiment before ISRO's formal establishment and laid foundational experience for future space endeavors.

#### WHY IN NEWS?

The Nike Apache launch is referenced as the historical starting point of India's rocketry



efforts leading up to ISRO's current advanced projects.

### **Southern Astrophysical Research (SOAR) Telescope**

The SOAR Telescope is a 4.1-meter optical and near-infrared telescope located at Cerro Tololo Inter-American Observatory in Chile. It is operated by a consortium including the U.S. National Optical Astronomy Observatory and Brazilian institutions. SOAR specializes in high-resolution imaging and spectroscopy, enabling detailed studies of stars, galaxies, and other celestial phenomena. Its location in the Southern Hemisphere provides access to the rich star fields of the Milky Way's southern sky. The telescope played a key role in observing the quadruple star system UPM J1040-3551 AabBab.

#### WHY IN NEWS?

SOAR was instrumental in the recent observations leading to the discovery of the unique quadruple star system containing brown dwarfs and red dwarfs.

### **Spin-Exchange Relaxation-Free Magnetometers**

Spin-exchange relaxation-free (SERF) magnetometers are quantum sensors developed in the late 1990s that detect extremely weak magnetic fields with high precision. They operate by minimizing spin-exchange relaxation among atoms, enhancing sensitivity beyond conventional magnetometers. SERF magnetometers are foundational to quantum magnetic sensing and navigation, enabling detection of Earth's magnetic anomalies used in QMNS. Their sensitivity surpasses that of superconducting quantum interference devices (SQUIDS) without requiring cryogenic cooling. Applications include medical imaging, geophysical surveys, and military navigation. Development of compact, field-ready SERF magnetometers began in the 2010s for integration into inertial and underwater navigation systems.

#### WHY IN NEWS?

SERF magnetometers underpin recent advances in quantum navigation systems being tested and deployed by defense agencies globally, including India's efforts to develop indigenous quantum sensors.

### **Spinal Muscular Atrophy (SMA)**

Spinal Muscular Atrophy (**SMA**) is a rare genetic disorder characterized by the loss of motor neurons in the spinal cord, leading to muscle wasting and weakness. It is caused by mutations in the **SMN1 gene**, which reduces survival motor neuron protein production. SMA is classified into types 1 to 4 based on age of onset and severity. It is one of the leading genetic causes of infant mortality. Recent treatments include gene therapy and SMN-enhancing drugs. The disorder affects approximately 1 in 10,000 live births globally. Early diagnosis and intervention improve patient outcomes.

#### WHY IN NEWS?

SMA was brought into light as the Supreme Court ordered influencers to apologize and potentially pay penalties to aid treatment for people suffering from rare genetic disorders like SMA after mocking disabled persons.



## Swadeshi System on Chip (SoC)

The **Swadeshi System on Chip (SoC)** is an indigenous semiconductor technology initiative in India focused on developing affordable submicron and deep submicron chips. It aims to optimize space, energy consumption, and cost in semiconductor devices. This technology is critical for enhancing India's self-reliance in semiconductor design and manufacturing. Swadeshi SoCs are designed to support real-time data capture, ultra-high-speed communication, and high bandwidth applications, contributing to sectors like defense, space, and consumer electronics. It embodies the Vocal for Local movement in India's semiconductor ecosystem, promoting domestic innovation and reducing dependency on imports.

### WHY IN NEWS?

Swadeshi SoC is brought into light as part of India's push to build local semiconductor technologies and reduce import reliance under the National Semiconductor Mission and related government initiatives.

## Trinetra Network

The **Trinetra** is a high-speed intercommunication network developed under the National Supercomputing Mission to connect computing nodes within supercomputers. It supports data transfer speeds of 40 Gbps and 100 Gbps, enhancing communication efficiency between nodes. Trinetra strengthens India's supercomputing infrastructure by enabling faster data exchange, critical for complex computations in scientific research. The network is designed and tested domestically, contributing to the self-reliance goal of NSM. Its implementation improves the performance of Indian supercomputers by optimizing parallel processing and workload distribution.

### WHY IN NEWS?

Trinetra was recently tested and deployed as part of the NSM's efforts to enhance data transfer and communication capabilities in India's indigenous supercomputing systems.

## Voltammetry

Voltammetry is an electrochemical technique where current is measured while the voltage is varied, allowing the detection and quantification of redox-active substances. It is widely used in chemical analysis and biosensing to monitor electron transfer reactions. In biosensors, voltammetry can detect electroactive molecules like phenazines produced by engineered microbes. This method provides rapid, sensitive, and quantitative data on analyte concentration. Voltammetric sensors are portable and compatible with miniaturized electronics, making them suitable for field applications. Different voltammetry types include cyclic, differential pulse, and square wave voltammetry, each with specific analytical advantages.

### WHY IN NEWS?

Voltammetry was the key technique used to detect electrical currents generated by phenazine molecules in the new bacterial biosensors, enabling real-time chemical sensing compatible with portable electronics.



## Voyager Radioisotope Thermoelectric Generators

The Voyager 1 and Voyager 2 spacecraft use **radioisotope thermoelectric generators (RTGs)** powered by plutonium-238 decay heat to produce electricity. Initially generating about **470 watts**, their power output has declined to roughly **225 watts** after more than 40 years in space. RTGs convert heat from radioactive decay directly into electricity without moving parts, enabling long-term, reliable power in deep space where solar energy is insufficient. These power sources are more like batteries than nuclear reactors, providing steady but limited energy for spacecraft instruments and communication systems.

### WHY IN NEWS?

Voyager RTGs are referenced to contrast current nuclear power sources with the proposed more powerful lunar nuclear reactors NASA aims to develop by 2030.

## Vyommitra Humanoid

Vyommitra is India's first indigenous humanoid robot designed for space missions, developed by ISRO. It is engineered to simulate human functions in space, including operating spacecraft systems and conducting experiments. Vyommitra's primary mission is to accompany uncrewed Gaganyaan flights, testing life-supporting conditions and emergency protocols. The humanoid is equipped with sensors to monitor temperature, pressure, and radiation levels inside the spacecraft. Vyommitra can mimic human speech and gestures for communication with ground control. The robot's development marks a step in India's autonomous space exploration capabilities, reducing risks for human astronauts on initial missions.

### WHY IN NEWS?

Vyommitra is scheduled for deployment in 2026 ahead of India's first crewed Gaganyaan mission, marking a milestone in the country's human spaceflight program.

## International Relations & Organizations

### Global Trade and Gender Arrangement (GTAGA)

The **Global Trade and Gender Arrangement (GTAGA)** was founded in 2020 to promote the integration of gender equality in trade policies. It currently has eleven members, including Australia, Chile, Mexico, New Zealand, and Brazil. GTAGA focuses on increasing the number of women entrepreneurs engaged in international trade by encouraging mutually supportive trade and gender policies. The initiative aims to address systemic barriers faced by women in accessing global markets, such as regulatory challenges and lack of financial resources. GTAGA advocates for gender-responsive trade agreements and facilitates information exchange and collaboration among member countries to empower women economically through trade.

### WHY IN NEWS?

GTAGA is mentioned as international initiative promoting gender-responsive trade policies, relevant to the recent inclusion of gender equality provisions in the India-UK Comprehensive Economic and Trade Agreement (CETA).



## Kaladan Multi-Modal Transit Project

The Kaladan Multi-Modal Transit Transport Project is a ₹2,904 crore India-Myanmar initiative to connect Mizoram to Kolkata via Myanmar, reducing travel distance by 1,000 km. It involves road, river, and sea transport modes, linking Sittwe port in Myanmar to Mizoram's interior. The project aims to boost trade and strategic connectivity but has been delayed due to Myanmar's civil war after the 2021 military coup. It is part of India's broader Act East Policy to enhance access to Southeast Asia and reduce dependency on longer routes through Bangladesh and mainland India.

### WHY IN NEWS?

The project's delay affects Mizoram's connectivity and trade prospects, denoting challenges in India's regional infrastructure ambitions.

## Lee Jae Myung

Lee Jae Myung is the liberal President of South Korea, inaugurated in 2022. Known for his progressive policies, he has sought to balance strong defense postures with renewed diplomatic efforts toward North Korea. Lee has emphasized resuming dialogue despite North Korea's nuclear advancements and has faced challenges managing the U.S.-South Korea alliance amid U.S. demands for increased financial contributions for troop presence. His administration marks a shift from previous conservative governments, focusing on social reforms and economic equity while maintaining security commitments.

### WHY IN NEWS?

President Lee Jae Myung is preparing for a summit with U.S. President Donald Trump in August 2025 amid rising tensions on the Korean Peninsula and ongoing military exercises.

## Pacific Islands Forum (PIF)

The Pacific Islands Forum (PIF) was founded in 1971 and includes 18 members such as Australia, Fiji, Kiribati, Nauru, New Caledonia, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. It serves as a regional political and economic policy organization aimed at enhancing cooperation among member states. PIF has historically invited external partners like the U.S., Japan, China, and European countries to its summits. The forum addresses issues like climate change, trade, security, and regional stability. Its decisions and membership reflect the complex geopolitical dynamics of the Pacific region, especially amid increasing influence from China and the U.S. rivalry.

### WHY IN NEWS?

The Solomon Islands' Prime Minister Jeremiah Manele announced excluding non-regional partners from the upcoming PIF summit, reflecting shifting geopolitical tensions and China's growing influence in the Pacific.

## Quad Leaders Summit

The **Quad Leaders Summit** is a multilateral meeting involving India, the United States, Japan, and Australia, focusing on regional security, economic cooperation, and infrastructure development in the Indo-Pacific. Established in 2007 and revitalized in 2017, the Quad promotes a free, open, and inclusive Indo-Pacific region. It addresses challenges



like maritime security, supply chain resilience, climate change, and technology standards. The summit encourages coordination on defense exercises, humanitarian assistance, and disaster relief. India hosting the 2025 summit marks step in strengthening the Quad's role as a strategic grouping balancing China's regional influence.

#### WHY IN NEWS?

India is scheduled to host the 2025 Quad Leaders Summit, which was brought into light during the August 2025 India-US 2+2 Dialogue as a key platform for regional cooperation.

### Russia-Ukraine Land Swap

The **Russia-Ukraine land swap** concept involves territorial exchanges between Russia and Ukraine to resolve conflicts, particularly over Crimea and the Donbas region. Though never formally proposed, it surfaced in diplomatic talks as a theoretical compromise. Crimea was annexed by Russia in 2014, while Donbas remains contested with ongoing conflict. Both sides consider sovereignty over these regions non-negotiable red lines. The idea reflects attempts to explore creative solutions beyond conventional diplomacy but remains highly controversial and politically sensitive, with no official acceptance from Kyiv or Moscow. The notion puts stress on the complexity of territorial disputes in Eastern Europe.

#### WHY IN NEWS?

The land swap idea was briefly mentioned at the Alaska summit as an indicator of the expanding scope of diplomatic discussions on the Russia-Ukraine conflict.

### String of Pearls

The **String of Pearls** refers to China's strategic network of ports and infrastructure projects in the Indian Ocean Region (IOR), including facilities in Pakistan (Gwadar), Sri Lanka (Hambantota), Myanmar (Kyaukpyu), and Djibouti. This strategy aims to secure China's maritime trade routes and increase its naval presence. The term was coined by U.S. defense analysts in the early 2000s. China's investments often combine commercial and military uses, raising concerns about regional dominance. India views this as a containment strategy. Despite diplomatic talks, China continues to develop these ports, reinforcing its influence over critical Sea Lines of Communication (SLOCs) in the IOR.

#### WHY IN NEWS?

India seeks China to ease its String of Pearls strategy amid recent diplomatic thaw, but China is unlikely to halt its activities in the Indian Ocean Region, maintaining its strategic goals.

## Social Development & Government Schemes

### Adi Karmayogi Initiative

The **Adi Karmayogi initiative** is a government programme aimed at creating 20 lakh change leaders in tribal villages through participatory training. It operates under the Dharti Aba Janjatiya Gram Utkarsh Abhiyaan to enhance last-mile delivery of welfare schemes. The initiative involves training 240 State-level master trainers, 2,750 district trainers, and 15,000 block trainers, who then train village-level officials and volunteers. It



promotes problem-solving through exercises like candle lighting, role-play, and fish-bowl activities. The programme also supports the creation of Village Vision documents and the establishment of 1 lakh **Adi Seva Kendras** as single-point welfare scheme access centers.

#### WHY IN NEWS?

The Adi Karmayogi initiative is being expanded to village-level training across 324 districts to improve tribal welfare scheme implementation and motivate officials and community leaders in tribal areas.

### **Anemia Mukta Bharat (AMB)**

Launched in 2018 by the Ministry of Health & Family Welfare, **AMB** is a flagship initiative aimed at reducing anemia across India. It emphasizes the use of fortified foods, including rice fortified with Iron, Folic Acid, and Vitamin B12. A pilot rice fortification program started in 2019, targeting populations with high rice consumption. By March 2024, all custom-milled rice distributed under food safety net programs was replaced with fortified rice. The Government of India approved continued universal supply of fortified rice until December 2028, funding it fully with Rs 17,082 crore to combat micronutrient deficiencies nationwide.

#### WHY IN NEWS?

AMB is brought into light due to the government's approval for universal fortified rice distribution under food safety programs until 2028, with full funding to tackle anemia and micronutrient deficiencies.

### **Anganwadi Centres**

Anganwadi Centres are rural child care and mother care centers established by the Government of India in 1975 under the Integrated Child Development Services (ICDS) program. They provide basic health care, nutrition, and pre-school education to children under six and their mothers. These centres serve as the first point of contact for health and education in rural areas, often staffed by local women known as Anganwadi workers. Anganwadi Centres also support immunization, health check-ups, and referral services. They are very important in reducing malnutrition and infant mortality in India. The centres have recently been repurposed to include structured early childhood care and education (ECCE).

#### WHY IN NEWS?

The government's Poshan Bhi Padhai Bhi initiative is transforming Anganwadi Centres into early learning hubs, emphasizing play-based ECCE and training Anganwadi workers systematically for holistic child development.

### **Anganwadi System**

The **Anganwadi system** is a government-run rural child care program in India under the Integrated Child Development Services (ICDS) scheme, launched in 1975. It provides basic health care, nutrition, and pre-school education to children under six and pregnant/lactating women. Anganwadi centers serve as focal points for early childhood care and education (ECCE) in rural and underserved areas. They traditionally cater to



children aged 3-6 years but are increasingly focusing on home visits for 0-3 year-olds. There are over 14 lakh centers nationwide, staffed by Anganwadi workers who also promote immunization and health awareness.

#### WHY IN NEWS?

The Anganwadi system is undergoing a shift to focus more on children aged 0-3 years through home visits, as government schools take over pre-school education for 3-6 year-olds under NEP 2020 reforms.

### ASHA Workers

Accredited Social Health Activists (**ASHA**) are community health workers instituted by the Government of India in 2005 under the National Rural Health Mission. They serve as a bridge between rural populations and public health services, promoting maternal and child health, immunization, sanitation, and nutrition. ASHA workers are usually local women trained to provide basic healthcare education and assistance. They receive performance-based incentives and are critical in improving health outcomes in underserved areas. Over one million ASHA workers operate across India, contributing to public health outreach and awareness.

#### WHY IN NEWS?

ASHA workers are participants in the Yashoda AI program, receiving training to improve their digital skills and enhance their effectiveness in community health roles.

### Aspirational Blocks Program

The **Aspirational Blocks Program** was launched by the Government of India in 2023 as an extension of the Aspirational Districts Program (2018). It focuses on accelerating development in backward administrative blocks within districts. The program aims to reduce regional disparities by delivering basic developmental facilities in health, nutrition, education, agriculture, financial inclusion, and infrastructure. It uses data-based monitoring and prioritization to track progress and improve outcomes. The program promotes coordinated efforts between local administrations and communities to ensure targeted indicators are met at the grassroots level.

#### WHY IN NEWS?

The Aspirational Blocks Program was brought into light during the Sampoonata Abhiyan felicitation event, showcasing its role in expanding development efforts to smaller administrative units in Madhya Pradesh.

### Atal Innovation Mission

The **Atal Innovation Mission (AIM)** was launched by the Government of India in 2016 to promote a culture of innovation and entrepreneurship across the country. It established over 10,000 Atal Tinkering Labs in schools to encourage creativity and scientific temper among students. AIM also supports start-ups and incubators through funding and mentorship programs. It operates under NITI Aayog and focuses on developing a sustainable innovation ecosystem by connecting academia, industry, and government. AIM promotes STEM education, vocational skills, and aims to nurture young innovators to



contribute to India's economic growth and global competitiveness.

#### WHY IN NEWS?

Atal Innovation Mission is brought into light as a key initiative by NITI Aayog in transforming education and innovation, embedding creativity in over 10,000 labs nationwide as part of India's human capital development strategy.

### **Bhashini Platform**

**Bhashini** is an AI-powered language translation platform launched by the Government of India to bridge literacy, language, and digital divides across India. It supports transcription, translation, and summarization in multiple Indian languages including Hindi, Bengali, Tamil, Telugu, Marathi, Gujarati, and English. Bhashini uses advanced natural language processing (NLP) models tailored to the linguistic diversity of India. It is designed to facilitate digital inclusion by enabling government services and tools to be accessible in regional languages. Bhashini underpins applications like 'SabhaSaar', helping convert audio/video recordings into structured, multilingual text outputs.

#### WHY IN NEWS?

SabhaSaar, the AI tool for Gram Sabha meeting minutes, is built on the Bhashini platform to provide multilingual transcription and summaries.

### **Central Government Health Scheme (CGHS) ID**

The Central Government Health Scheme (CGHS) ID is an identification number issued to eligible central government employees and pensioners in India for availing healthcare services under CGHS. It provides access to allopathic and AYUSH treatments, diagnostic services, and medicines at CGHS dispensaries and empanelled hospitals. Linking the CGHS ID with the ABHA ID enables unified health records and seamless service delivery. CGHS was launched in 1954 and covers beneficiaries in major cities. It aims to provide comprehensive and affordable healthcare to government employees and their dependents.

#### WHY IN NEWS?

The government has directed linking of CGHS ID with ABHA ID to streamline patient identification and medical record authenticity in government and affiliated hospitals.

### **Centrally Sponsored Schemes (CSS)**

Centrally Sponsored Schemes are government programs in India funded jointly by the Union and State governments. Typically, the funding ratio is 60:40, but for northeastern states, it is 90:10. These schemes address social welfare, education, health, and infrastructure. CSS allow for uniform policy implementation across states with financial support from the center. The post and pre-matric scholarships for SCs, STs, OBCs, and DNTs are examples of CSS. The scheme design requires states to contribute a share, promoting cooperative federalism. CSS have been critiqued for implementation challenges but remain a major mechanism for social sector funding.

#### WHY IN NEWS?

The scholarships discussed are centrally sponsored schemes, and their funding and eligibility criteria revisions are currently under government review for the FY 2026-31



financial cycle.

### **Deen Dayal SPARSH Yojana**

The **Deen Dayal SPARSH Yojana** is a scholarship scheme launched by the Indian Department of Posts to promote philately among school children. SPARSH stands for **Scholarship for Promotion of Aptitude and Research in Stamps as a Hobby**. It targets students from Class VI to IX with at least 60% academic marks who maintain a Philately Deposit Account or are members of a Philatelic Club. The scholarship awards **Rs. 6000 per annum** to encourage sustainable engagement with philately, combining hobby and academic learning. Selection involves a philatelic quiz and a project competition.

#### WHY IN NEWS?

The Department of Posts invited applications for the Deen Dayal SPARSH Yojana scholarship for the academic year 2024-25, encouraging Karnataka students' participation by September 5, 2025.

### **Deendayal Antyodaya Yojana-NRLM**

The **Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM)** is a government initiative launched in 2011 aimed at reducing rural poverty by promoting self-employment and organization of rural poor into Self-Help Groups (SHGs). It focuses on skill development, financial inclusion, and social empowerment of marginalized communities, especially women. The mission operates through states and districts, providing capacity building, credit access, and market linkages. It has facilitated the disbursement of over 11 lakh crore rupees in loans to SHGs. The program emphasizes bank linkages and the role of local women leaders called Bank Sakhis.

#### WHY IN NEWS?

DAY-NRLM has recently achieved a milestone of disbursing loans worth over 11 lakh crore rupees to women SHGs, denoting its impact on rural women's financial empowerment.

### **Dekho Apna Desh Campaign**

The **Dekho Apna Desh** campaign is an initiative by the Government of India to promote domestic tourism. Launched to encourage Indians to explore their own country, it focuses on increasing awareness about India's diverse cultural, historical, and natural heritage. The campaign supports affordable and convenient interstate travel, enhancing economic redistribution and national integration. It leverages digital platforms, influencer engagement, and community participation. Domestic tourism under this campaign accounts for approximately 86% of the sector's revenue, making it an important driver for local economies, cultural exchange, and sustainable tourism development.

#### WHY IN NEWS?

The campaign is evolving into a national movement to increase domestic tourism revenues and encourage cultural and economic benefits across India.

### **Design Linked Incentive (DLI)**

The **Design Linked Incentive (DLI)** scheme was introduced in December 2021 to complement the PLI by encouraging innovation and indigenous product design in



manufacturing. It provides financial rewards for companies that develop and commercialize new products designed in India. The scheme aims to reduce dependence on foreign technology and enhance the domestic value chain. DLI targets sectors like electronics, automotive, and machinery, promoting R&D and intellectual property generation. Despite these goals, its impact has been limited so far, with slow uptake and unclear outcomes in terms of job creation or technological breakthroughs.

#### WHY IN NEWS?

DLI, launched as a follow-up to PLI, has shown limited success in stimulating indigenous product design and innovation, raising concerns about India's ability to reduce technological dependence.

### **Dhebar Commission**

The Dhebar Commission was constituted in the early 1960s to study Scheduled Tribes in India and identified a subgroup called Primitive Tribal Groups, now known as PVTGs. It brought into light criteria such as pre-agricultural economies, stagnant or declining populations, and low literacy to classify these groups as especially disadvantaged. The commission's work laid the foundation for targeted tribal welfare policies and the formal recognition of PVTGs. Its recommendations continue to influence tribal development programs and census classifications in India.

#### WHY IN NEWS?

The Dhebar Commission's classification of PVTGs underpins the current push for separate enumeration of these groups in the upcoming census.

### **Didayi Tribe**

The **Didayi tribe** is one of the 13 Particularly Vulnerable Tribal Groups (PVTGs) in Odisha, primarily inhabiting the **Malkangiri district**, especially in Kudumulugumma and Khairput blocks. They traditionally practice **shifting cultivation**, small-scale farming, and depend on forest produce for livelihood. The tribe has limited access to education and healthcare due to geographic isolation. Their language belongs to the Dravidian family. Social customs include animistic beliefs and community-based decision making. The tribe's population is relatively small, contributing to their vulnerable status. Their culture remains largely undocumented compared to other tribes in Odisha.

#### WHY IN NEWS?

Champa Raspeda, a member of the Didayi tribe, became the first from her community to clear NEET 2025, marking a milestone in tribal education and empowerment.

### **Fair Price Shops (PDS)**

Fair Price Shops (FPS) are retail outlets under India's Public Distribution System (PDS) that distribute subsidized essential commodities like rice, wheat, sugar, and kerosene. Tamil Nadu operates **37,328 FPS**, managed by the Cooperation Department. These shops play a critical role in food security, especially for vulnerable populations. The state has achieved zero hunger-related deaths partly due to efficient FPS management. Tamil Nadu has recently innovated by enabling doorstep delivery of ration goods through FPS, improving



accessibility for the elderly and disabled. FPS are foundational to India's food subsidy and poverty alleviation programs.

#### WHY IN NEWS?

Tamil Nadu is piloting doorstep delivery of essential commodities through 34,809 fair price shops to assist elderly and disabled citizens under the new Thayumanavar Thittam initiative.

### Farmer Producer Organisations (FPOs)

Farmer Producer Organisations (FPOs) are collectives of farmers who pool resources to improve agricultural productivity and market access. Registered as cooperatives or companies, FPOs enable better bargaining power, reduce input costs, and facilitate direct marketing of produce. They provide access to credit, technology, and extension services. FPOs support diversification into allied sectors like fisheries and horticulture. Government schemes often promote FPO formation to enhance rural livelihoods and increase farmers' incomes. Integration of FPOs within cooperative frameworks strengthens rural economies by encouraging collective entrepreneurship and sustainable agricultural practices.

#### WHY IN NEWS?

The National Cooperation Policy 2025 includes integrating Farmer Producer Organisations within the cooperative framework to strengthen rural livelihoods and diversify income sources.

### Forest Rights Act, 2006

The **Forest Rights Act (FRA), 2006** recognizes the rights of forest-dwelling tribal communities and other traditional forest dwellers over forest lands and resources. It mandates the identification and settlement of forest rights by Gram Sabhas before any diversion of forest land. The Act emphasizes community consent and protection of customary rights. It was enacted to correct historical injustices faced by forest-dependent communities. The FRA applies nationwide but has exceptions in certain areas like the Andaman and Nicobar Islands, where other laws such as the Protection of Aboriginal Tribes Act, 1956, are also invoked. Implementation is overseen by state and central authorities.

#### WHY IN NEWS?

The FRA is central to the controversy over forest land diversion for the ₹72,000-crore Great Nicobar Island Project, with disputes about whether rights under FRA were settled before clearances were granted.

### Fortified Rice

Fortified rice is regular rice grains coated or infused with a blend of essential vitamins and minerals such as iron, folic acid, vitamin B12, and zinc to combat malnutrition. It is produced using extrusion technology, where rice kernels are mixed with micronutrients and shaped to resemble natural rice. This process helps address hidden hunger in vulnerable populations, especially in crisis zones. Fortified rice retains its nutritional value even after cooking and storage. India has been a pioneer in large-scale fortified rice



production and distribution, integrating it into public food programs like the Public Distribution System (PDS).

#### WHY IN NEWS?

India is supplying fortified rice to the World Food Programme to aid vulnerable populations globally, marking a milestone in their collaboration against hunger.

### **GOBARdhan Scheme**

The **GOBARdhan** (Galvanizing Organic Bio-Agro Resources Dhan) scheme, launched in 2018, targets rural waste management by converting cattle dung and organic waste into biogas and bio-fertilizer. It aims to improve sanitation, reduce greenhouse gas emissions, and provide additional income to farmers. The program supports setting up biogas plants at village and cluster levels and incentivizes the use of bio-slurry as organic manure. GOBARdhan is part of the broader Swachh Bharat Mission and links agricultural waste management with renewable energy production, encouraging sustainable rural development and reducing dependence on chemical fertilizers.

#### WHY IN NEWS?

GOBARdhan is brought into light as a key initiative complementing biofuel production, reducing emissions, and promoting rural prosperity through organic waste utilization.

### **ICAR-National Research Centre on Mithun (NRCM)**

The ICAR-NRCM, located in Nagaland, is a premier research institution under the Indian Council of Agricultural Research (ICAR). It focuses exclusively on the conservation, breeding, feeding, health, and value addition of Mithun. The centre plays important role in providing scientific support and documentation for the potential inclusion of Mithun in national livestock schemes. It collaborates with tribal farmers and government bodies to promote sustainable mithun farming and prevent population decline. The NRCM is a key institution for preserving this unique bovine species and enhancing tribal livelihoods in remote Northeast regions.

#### WHY IN NEWS?

The NRCM has submitted documentation and support to the Union Animal Husbandry Secretary advocating for Mithun's inclusion in central livestock development schemes.

### **India's Female Labor Participation**

India's female labor force participation rate is among the lowest globally, estimated at about 20-25%. Despite gradual increases, women's employment is often in low-quality, informal, or low-wage jobs. Barriers include social norms, educational mismatches, and lack of formal employment opportunities. Female participation stagnation contributes to economic inefficiency and inequality. Low wages and poor job quality persist even as educational attainment rises. This metric is a key concern for policymakers aiming to improve inclusive growth and human development indicators in India.

#### WHY IN NEWS?

The low and stagnant female labor participation was mentioned as a critical issue affecting India's economic growth quality and inequality in the 2025 economic debate.



## Indian Million Death Study

The **Indian Million Death Study** is a large-scale mortality surveillance project initiated in 1998 to collect data on causes of death across India using verbal autopsies. It covers over one million deaths, providing nationally representative information on mortality patterns, including snakebite fatalities. The study uses standardized interviews with relatives of the deceased to assign probable causes of death, addressing gaps in official death registration. Data from this study have informed public health policies and research on neglected diseases. It revealed that snakebite deaths are concentrated in rural areas and specific states, denoting the need for targeted interventions and antivenom distribution.

### WHY IN NEWS?

Findings from the Indian Million Death Study were cited in a 2020 publication estimating snakebite deaths in India, emphasizing the urgent need for improved treatment and prevention strategies.

## Jan Dhan Yojana

Pradhan Mantri Jan Dhan Yojana (PMJDY) is a national financial inclusion program launched by the Government of India in 2014. It provides affordable access to banking services for the unbanked population by opening zero-balance savings accounts. As of 2025, over **400 million accounts** have been opened under the scheme. It integrates with Aadhaar for identity verification and supports Direct Benefit Transfers (DBT) to deliver subsidies and welfare payments directly to beneficiaries. Jan Dhan Yojana increased financial inclusion, raising the percentage of Indian adults with bank accounts from 35% in 2011 to 89% in 2025.

### WHY IN NEWS?

Jan Dhan Yojana's foundational role in increasing financial inclusion contributed to the success of UPI and digital payments transformation in India.

## Karnataka Devadasi System

The **Devadasi system** is an ancient practice where women were dedicated to temples and served as dancers and caretakers. Over time, it became associated with exploitation and social stigma. The **Karnataka Devadasi (Prevention, Prohibition, Relief And Rehabilitation) Bill, 2025** targets this system to abolish exploitation, offering relief and rehabilitation to affected women. It also grants children of devadasis the right to omit their father's name in official documents, allowing use of mother's name or a chosen surname, helping reduce social stigma. The bill emphasizes empowerment and social integration of devadasi women and their children.

### WHY IN NEWS?

The bill was approved by the Siddaramaiah cabinet in August 2025 to protect devadasi women and their children from exploitation and social discrimination, marking legislative step in Karnataka.

## Karnataka Juvenile Justice (Care and Protection) Rules, 2025

The **2025 Karnataka Juvenile Justice Rules** update procedures under the Juvenile Justice



(Care and Protection of Children) Act, 2015, tailoring them to state-specific requirements. These rules mandate sensitisation of newly appointed Juvenile Justice Board (JJB) members and chairpersons on child rights and juvenile handling. They emphasize **training police, advocates, magistrates, and judges** in children's courts about juvenile care protocols. The rules aim to prevent juveniles from being treated as adults in criminal cases, ensuring proper identification and placement in juvenile homes or observation centers, encouraging rehabilitation rather than punishment.

#### WHY IN NEWS?

The Karnataka High Court referenced the 2025 rules to reinforce systemic reforms after a juvenile was wrongly imprisoned as an adult for 13 years in a recent landmark judgment.

### **Karnataka Platform-based Gig Workers Bill**

The **Karnataka Platform-based Gig Workers (Social Security and Welfare) Bill** aims to provide social security to gig workers engaged with digital platforms. It includes a dispute resolution mechanism, formation of a **gig workers' welfare board**, and establishment of a welfare fund. The bill mandates **registration** of workers and platforms, ensures income security, and prescribes reasonable working conditions. It addresses issues like **income instability**, lack of paid leave, and limited health insurance access. The bill targets approximately **four lakh gig workers** in Karnataka and awaits approval by the legislative council to become law.

#### WHY IN NEWS?

The Karnataka Assembly passed this bill in August 2025 to improve protections for gig workers amid ongoing challenges like extreme weather and income insecurity in the state.

### **Karnataka Shakti Scheme**

The **Karnataka Shakti Scheme**, launched in 2023, provides free public bus travel exclusively for women across Karnataka. It aims to enhance women's mobility for work, education, and entrepreneurship, particularly in rural and peri-urban areas. Since its inception, female ridership has increased by over 40%. The scheme reduces women's dependence on male family members and promotes greater autonomy. It addresses barriers such as safety concerns and lack of reliable transport that limit female labor force participation. This initiative is a rare example of targeted transport policy designed to empower women economically and socially in India.

#### WHY IN NEWS?

The scheme is brought into light as a successful intervention boosting women's workforce participation amid economic challenges posed by U.S. tariffs on Indian exports.

### **National Family Health Survey (NFHS)**

The National Family Health Survey (NFHS) is a large-scale, multi-round survey conducted in India to collect data on population, health, and nutrition. Initiated in 1992-93, it is managed by the Ministry of Health and Family Welfare and implemented by the International Institute for Population Sciences (IIPS), Mumbai. NFHS provides essential data on fertility, mortality, family planning, maternal and child health, nutrition, and



lifestyle factors. The survey's rounds, such as NFHS-4 (2015-16) and NFHS-5 (2019-21), track trends over time. NFHS data is critical for policy formulation and monitoring health programs in India.

#### WHY IN NEWS?

NFHS data revealed rise in obesity rates among Indian men, women, and children between 2015-16 and 2019-21, denoting a growing public health concern.

### **NAVYA Initiative**

The **NAVYA** program, started in June 2025, targets adolescent girls aged 16–18 in aspirational districts across India. It is a collaborative effort by the Ministry of Skill Development & Entrepreneurship and the Ministry of Women & Child Development. The initiative focuses on vocational training in both traditional and emerging sectors like digital marketing, cybersecurity, AI services, and green jobs. It also includes modules on health, nutrition, hygiene, financial literacy, life skills, and legal awareness. NAVYA aims to bridge the gap between education and livelihood by promoting employability, self-employment, internships, and apprenticeships in 19 states and 27 districts.

#### WHY IN NEWS?

NAVYA was launched in June 2025 to train 3,850 adolescent girls under PMKVY 4.0, emphasizing modern job roles and holistic development in aspirational districts.

### **NDPS Cases**

NDPS stands for **Narcotic Drugs and Psychotropic Substances** cases, governed by India's NDPS Act, 1985. These cases involve offenses related to the production, trafficking, and consumption of narcotic drugs and psychotropic substances. The Act provides stringent penalties and empowers authorities to enforce drug control. Between July 2024 and July 2025, 36 NDPS cases were registered based on tips from the MANAS Helpline. The NDPS Act also regulates import/export and prescribes rehabilitation measures, aiming to curb drug abuse and trafficking through legal and social frameworks.

#### WHY IN NEWS?

NDPS cases surfaced prominently as a result of citizen reports through the MANAS Helpline, denoting enforcement actions against drug offenses in the past year.

### **One Nation One Ration Card**

The **One Nation One Ration Card (ONORC)** is a digital platform launched by India to enable portability of food security benefits across states. It allows beneficiaries to access subsidised food grains from any fair price shop in the country using biometric authentication linked to Aadhaar. The system integrates real-time inventory tracking and electronic point-of-sale (ePOS) devices to reduce leakages and ensure transparency. It primarily aids internal migrants by ensuring their food entitlements are not restricted to their home state. The ONORC platform was fully implemented by 2023, covering all states and union territories.

#### WHY IN NEWS?

ONORC is brought into light as a key innovation in India's Public Distribution System, enabling food security for over 800 million people and supporting hunger reduction



during and after the COVID-19 pandemic.

### **Operation Muskaan**

Operation Muskaan is a recurring child rescue initiative primarily conducted in Telangana, aimed at rescuing children from exploitative and hazardous conditions. The operation involves coordination between police, Women Development and Child Welfare Department, Labour and Health Departments, Child Welfare Committees (CWCs), District Child Protection Units (DCPUs), and NGOs. It targets high-risk locations such as railway stations, bus terminals, construction sites, and brick kilns. The initiative includes legal action against employers violating child labour laws and efforts to rehabilitate rescued children through family reunification or admission to child care homes. It also enrolls migrant children in bridge schools for education and reintegration.

#### WHY IN NEWS?

Operation Muskaan-XI rescued 7,678 children across Telangana in July 2025, involving 121 police teams and multiple departments, denoting ongoing efforts against child labour and exploitation in the region.

### **Operation Sadbhavana**

Operation Sadbhavana is an initiative by the Indian Army aimed at winning the hearts and minds of local populations in border areas through development and welfare activities. It focuses on infrastructure development, healthcare, education, and livelihood promotion in conflict-prone and remote regions. Launched in the 1990s, it operates mainly in Jammu & Kashmir, Arunachal Pradesh, and other northeastern states. The program includes building schools, roads, and health centers, and organizing cultural and sports events. It plays an important role in encouraging peace and stability along India's sensitive border areas by enhancing civilian-military relations.

#### WHY IN NEWS?

The Indian Army inaugurated the Arogyam Health and Wellness Centre under Operation Sadbhavana in Tawang district to improve healthcare access in remote high-altitude areas.

### **Operation Sahyog**

Operation Sahyog is a coordinated humanitarian relief initiative involving Indian security forces and the air force to provide emergency assistance in inaccessible or disaster-affected areas. The operation typically includes airlifting essential supplies like food, medicine, and daily necessities to remote or stranded populations. It leverages the logistical capabilities of the Indian Air Force and the ground expertise of paramilitary units such as the Assam Rifles. Operation Sahyog reflects India's integrated approach to disaster management and civil-military cooperation, especially in the northeastern states where terrain and weather often hinder ground transportation.

#### WHY IN NEWS?

Operation Sahyog was launched to airlift over six tons of supplies to 18 remote villages in Manipur's Henglep sub-division after landslides blocked road access.



## Output Outcome Monitoring Framework (OOMF)

The Output Outcome Monitoring Framework (OOMF) is a government tool designed to track and evaluate the implementation and impact of social sector programs in India. It uses predefined key performance indicators (KPIs) and data dashboards to ensure transparency and accountability in resource utilization. OOMF integrates technology to provide real-time monitoring and generate outcome-based reports. It has been applied in various sectors including health, education, and rural development. The framework helps policymakers make data-driven decisions and improve program efficiency. NSP 2025 adopts OOMF principles to monitor sports policy implementation rigorously.

### WHY IN NEWS?

NSP 2025 incorporates OOMF-inspired monitoring to bring transparency and accountability to sports funding and outcomes.

## PAHAL Scheme

The **PAHAL (Pratyaksha Hastaantarit Laabh)** scheme is India's direct benefit transfer program for LPG subsidies, launched in 2014. It eliminates middlemen by transferring subsidies directly to consumers' bank accounts. The scheme uses Aadhaar-based biometric authentication and a centralized LPG database to prevent duplicate connections and subsidy diversion. Over 33 crore active LPG consumers are linked with Aadhaar under PAHAL. The system incorporates Delivery Authentication Codes (DACs) to authenticate LPG cylinder delivery and SMS alerts to track refill status, reducing pilferage and complaints, with consumer satisfaction exceeding 90% as per recent evaluations.

### WHY IN NEWS?

The Government of India deactivated over 4 crore duplicate or inactive LPG connections under PAHAL to tighten subsidy misuse, with biometric Aadhaar verification becoming mandatory for all new connections under the scheme.

## PLI Scheme (Production Linked Incentive)

The **Production Linked Incentive (PLI) scheme** is an Government of India initiative launched in 2020 to boost domestic manufacturing and exports by providing financial incentives to companies based on incremental sales. It targets key sectors such as electronics, pharmaceuticals, textiles, and auto components, encouraging investment in technology, scale, and value addition. The scheme aims to reduce import dependence, increase competitiveness, and create jobs. PLI has been expanded several times to include new sectors and is considered a mainstay of India's industrial policy for export growth and self-reliance (Atmanirbhar Bharat).

### WHY IN NEWS?

PLI-like incentives are recommended to promote American firms in India and support exporters in diversifying products and markets amid US tariff challenges.

## PM Dhan Dhaanya Yojana

The **PM Dhan Dhaanya Yojana** is an Government of India scheme launched to support farmers by providing financial assistance for agricultural inputs and post-harvest



infrastructure. It allocates approximately **₹4,000 crore annually** aimed at improving productivity and reducing losses. The scheme is part of a broader effort to consolidate agricultural subsidies under unified programmes. It targets small and marginal farmers, emphasizing better resource utilization and integration with other rural development schemes. The scheme supports infrastructure development like storage and cold chains, addressing post-harvest losses estimated at 15-20% of produce. It complements existing schemes such as RKVY and Krishonnati Yojana.

#### WHY IN NEWS?

The PM Dhan Dhaanya Yojana was recently introduced as part of India's strategy to consolidate agricultural schemes, with an annual budget allocation of ₹4,000 crore to enhance agricultural productivity and reduce post-harvest losses.

### PM Ekta Malls

PM Ekta Malls are dedicated retail spaces approved by the Government of India under the 'One District, One Product' (ODOP) initiative to showcase indigenous products. Launched in the Union Budget 2023-24, these malls promote local handicrafts, Geographical Indication (GI)-tagged goods, and regional specialties. The scheme is implemented under Part-VI of the Special Assistance to States for Capital Investment (SASCI) framework. As of 2025, 27 states have received central approval and funding, with Uttar Pradesh allocated the highest budget for malls in Agra, Lucknow, and Varanasi. States provide land free or bear acquisition costs, ensuring prime urban locations for visibility.

#### WHY IN NEWS?

The Union government approved projects worth nearly ₹4,796 crore for PM Ekta Malls in 27 states, aiming to boost local artisans and promote ODOP and GI products through permanent retail platforms.

### PM JANMAN Mission

The PM JANMAN Mission, launched by the Ministry of Tribal Affairs, targets the development of **75 Particularly Vulnerable Tribal Groups (PVTGs)** across 18 States and one Union Territory. It involves 11 critical interventions coordinated across 9 key ministries, including Women and Child Development. The mission includes the approval of 2,500 Anganwadi Centres (AWCs) for construction to improve tribal health and nutrition infrastructure. It focuses on socio-economic upliftment through integrated development, addressing health, education, nutrition, and livelihood for tribal populations, aiming for saturation coverage in tribal majority and aspirational block ST villages.

#### WHY IN NEWS?

PM JANMAN Mission progress was reported in Lok Sabha in August 2025, denoting infrastructure expansion and multi-ministry collaboration for tribal welfare.

### PM Matsya Sampada Yojana

The **PM Matsya Sampada Yojana** is an ambitious flagship scheme launched by the Government of India in 2020 to boost fish production and allied activities. It aims to increase fish production by 45 lakh tonnes and generate direct and indirect employment



for around 55 lakh people during 2020-25. The scheme covers infrastructure development, technology adoption, and sustainable fisheries management. It supports fish farmers with credit, insurance, and marketing facilities. The program also promotes aquaculture in rural areas and focuses on enhancing fish seed production and hatchery development to increase productivity and income levels of fisherfolk.

#### WHY IN NEWS?

The Union Minister discussed PM Matsya Sampada Yojana as part of strategies to increase fish production in India during a meeting with state representatives in Kolkata.

### **PM Surya Ghar Muft Bijli Yojana**

PM Surya Ghar Muft Bijli Yojana is a government scheme launched to provide up to 300 units of free electricity monthly to one crore Indian households by installing rooftop solar panels. The program offers subsidies of ₹30,000 for 1 kW, ₹60,000 for 2 kW, and ₹78,000 for 3 kW or higher systems. Even families taking loans for installation save about ₹15,000 annually on electricity bills after EMI payments. The scheme aims to promote solar rooftop adoption, reduce household energy costs, and support India's clean energy targets. It is a major social initiative to boost decentralized renewable energy use across the country.

#### WHY IN NEWS?

This flagship scheme is brought into light as a critical driver of India's rapid solar rooftop expansion and energy access improvements in 2025.

### **PM SVANidhi Scheme**

PM SVANidhi (Prime Minister Street Vendor's AtmaNirbhar Nidhi) is a micro-credit scheme launched in 2020 to provide affordable loans to street vendors. It aims to facilitate their economic recovery post-COVID-19 lockdowns. Approximately **44% of beneficiaries** under the scheme are women. The scheme offers collateral-free working capital loans up to ₹10,000 with a one-year tenure, encouraging vendors to resume and expand their businesses. It also provides incentives for timely repayment and financial literacy training. PM SVANidhi has helped formalize street vending, improving vendor access to credit and government support.

#### WHY IN NEWS?

PM SVANidhi is recognized for empowering women street vendors and contributing to the rise in women's self-employment and financial inclusion.

### **PM Vishwakarma Scheme**

The **PM Vishwakarma Scheme** is an initiative aimed at artisans and craftspeople within India's MSME sector to promote digital payments and financial inclusion. It offers incentives such as cashback (e.g., Re. 1 per eligible transaction) to encourage the adoption of digital transactions. This scheme encourages trust, traceability, and integration of traditional trades into the modern digital economy. It supports the government's broader digital empowerment agenda by linking small-scale artisans to formal financial systems and digital marketplaces, enhancing their business sustainability and transparency.

#### WHY IN NEWS?

The PM Vishwakarma Scheme is brought into light as part of India's MSME digital



transformation efforts, incentivizing artisans to adopt digital payments and integrate into the digital economy in 2025.

### **Pradhan Mantri Awas Yojana**

**Pradhan Mantri Awas Yojana (PMAY)** is an Government of India initiative launched in 2015 aimed at providing affordable housing to the urban poor by 2022. It targets slum dwellers and low-income groups with subsidies and financial assistance for home construction or improvement. PMAY has two components – **PMAY-Urban** and **PMAY-Rural**, focusing on different demographics. The scheme promotes sustainable and inclusive urban development by integrating housing with infrastructure such as water supply, sanitation, and electricity. By 2025, PMAY aims to build over 1.12 crore houses, reducing the urban housing shortage and improving living conditions across India.

#### WHY IN NEWS?

PMAY is mentioned as part of India's broader strategy to address rapid urbanisation challenges by providing affordable housing and improving urban infrastructure.

### **Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN)**

PM-JANMAN is a government scheme launched on November 15, 2023, aimed at improving living conditions of the 75 PVTGs in India. It focuses on providing essential facilities including housing, safe drinking water, education, healthcare, nutrition, road and telecom connectivity, electricity, and livelihood opportunities. The scheme is implemented through 11 interventions coordinated by nine central ministries. The goal is to meet these needs within three years. PM-JANMAN targets socio-economic upliftment of PVTGs by addressing deep-rooted challenges such as marginalization, poor health, and low literacy.

#### WHY IN NEWS?

PM-JANMAN was cited in the Ministry's letter urging separate enumeration of PVTGs to better implement and monitor the scheme's progress.

### **Pradhan Mantri Matru Vandana Yojana (PMMVY)**

The **Pradhan Mantri Matru Vandana Yojana** is a maternity benefit scheme launched by the Government of India in 2017. It provides a cash incentive of ₹5,000 in two instalments for the first live birth and ₹6,000 in a single instalment for the second girl child. The scheme aims to compensate wage loss during pregnancy and promote maternal and child health. Over 4.05 crore women have benefited, with more than ₹19,000 crore disbursed through direct benefit transfers. It is implemented by Anganwadi and ASHA workers across states and union territories.

#### WHY IN NEWS?

The Ministry of Women and Child Development extended the PMMVY registration drive till August 15, 2025, to increase enrolment and improve maternal health outcomes nationwide.

### **Pradhan Mantri Matsya Sampada Yojana**

Launched in 2020 with a ₹20,050 crore budget, this Government of India scheme aims to modernize the fisheries sector by improving hatcheries, feed units, cold storage,



transport, and market linkages. It focuses on transforming fisheries from a nutrition source to a key rural livelihood driver. The scheme supports infrastructure development, value chain integration, and promotes sustainable aquaculture practices. It also encourages private investment and technological adoption to boost production and resilience in the sector. The program targets inland fisheries, which contribute over 75% of India's fish production and are vital for rural economic growth.

#### WHY IN NEWS?

The scheme is central to India's recent surge in inland fish production and economic reforms in the fisheries sector, marking a strategic shift in policy since 2014.

### **Pradhan Mantri Poshan Shakti Nirman (PM POSHAN)**

PM POSHAN, launched in 2021, is India's revamped school mid-day meal scheme focusing on nutritional quality and dietary diversity. It replaced the earlier Mid-Day Meal Scheme by integrating nutrition-sensitive interventions to improve child health and development. The program emphasizes inclusion of pulses, vegetables, and micronutrient-rich foods, aiming to combat malnutrition and micronutrient deficiencies among schoolchildren. It also uses digital monitoring tools to track meal delivery and quality. PM POSHAN supports over 100 million children across India's government and government-aided schools, making it one of the world's largest school feeding programs.

#### WHY IN NEWS?

PM POSHAN is mentioned as part of India's shift from calorie-based hunger alleviation to nutrition-sensitive policies, contributing to improved public health outcomes.

### **Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM)**

The **Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM)** is a pension scheme launched by the Government of India targeting workers in the unorganized sector. It provides a minimum assured monthly pension of ₹3,000 after 60 years of age. Contributors pay a monthly premium based on their age at entry, ranging from ₹55 to ₹200. The scheme is voluntary and aims to bring informal workers into the social security net. It is managed by the Ministry of Labour and Employment and integrates with other welfare programs for comprehensive coverage. The scheme was launched in 2019.

#### WHY IN NEWS?

PM-SYM is brought into light due to ongoing efforts to expand pension coverage for India's vast unorganized workforce, addressing gaps in social security in August 2025.

### **Pradhan Mantri Ujjwala Yojana (PMUY)**

Launched in 2016, PMUY aims to provide free LPG connections to women from below-poverty-line households to reduce health hazards from traditional cooking fuels. By 2025, 67% of PMUY beneficiaries completed mandatory biometric Aadhaar authentication. The scheme has distributed over 8 crore connections, improving clean fuel access in rural India. The government terminated 8.49 lakh inactive PMUY accounts recently to curb misuse. PMUY connections are integrated with PAHAL for direct subsidy transfer. Regular inspections ensure compliance and safety. The program has contributed to increase in



LPG penetration across underserved populations.

WHY IN NEWS?

The government deactivated 8.49 lakh inactive PMUY connections to prevent subsidy diversion and introduced stricter biometric authentication requirements for new PMUY beneficiaries.

### **Pradhan Mantri Viksit Bharat Rozgar Yojana**

The **Pradhan Mantri Viksit Bharat Rozgar Yojana** is a government employment scheme launched in 2025 with a budget of ₹99,446 crore. It aims to create over 3.5 crore new jobs in two years, focusing on first-time private sector employees and incentivizing employers. Part A offers ₹15,000 in two installments to first-time employees earning up to ₹1 lakh monthly, with the second installment conditional on completing a financial literacy program. Part B provides employers incentives up to ₹3,000/month per new employee for two years, extended to four years in manufacturing. Payments use the Aadhaar Bridge Payment System and PAN-linked accounts.

WHY IN NEWS?

Announced by PM Narendra Modi on Independence Day 2025, this scheme targets youth employment by providing financial aid to first-time private sector workers and incentives to employers, aiming to boost job creation and economic growth.

### **Public Distribution System (PDS)**

The Public Distribution System (PDS) is a government-run program in India aimed at distributing subsidized food and non-food items to the poor. It operates through a network of ration shops across the country. The system primarily distributes essential commodities like rice, wheat, sugar, and kerosene. PDS has been a critical part of India's food security strategy since independence. It faces challenges such as leakages, inefficiencies, and corruption, which modern tools like Anna-Chakra aim to address. PDS covers over 800 million beneficiaries under various welfare schemes.

WHY IN NEWS?

The PDS is being optimized through the Anna-Chakra tool to improve supply chain efficiency and reduce costs, as brought into light in the recent parliamentary update.

### **Public Procurement Policy for MSEs**

The **Public Procurement Policy for Micro and Small Enterprises (MSEs)** was introduced by the Government of India to promote MSEs by reserving a minimum 25% of total procurement from MSEs, with a **4% procurement earmarked specifically for SC/ST-owned MSEs**. This policy ensures preferential treatment in government tenders and aims to boost entrepreneurship among marginalized communities. It also mandates the facilitation of technology, finance, and marketing support to MSEs. The policy is implemented through various schemes, including the NSSH, and is periodically reviewed to enhance inclusivity and economic growth.

WHY IN NEWS?

The 4% procurement mandate from SC/ST MSEs under this policy is a key feature of the NSSH Scheme beneficiaries' recognition during the 2025 Independence Day event.



## Rang Paridhan Program

The **Rang Paridhan** Program is a unique awareness initiative linked to the NAMASTE scheme, organized as a fashion show to promote the use and importance of Personal Protective Equipment (PPE) kits among sanitation workers. The event combines cultural elements with social messaging, aiming to destigmatize sanitation work and encourage safety practices. It received appreciation for creatively engaging workers and the public, using fashion as a medium to show occupational health and safety in a traditionally neglected sector. The program also symbolizes empowerment and pride for the participants.

### WHY IN NEWS?

The Rang Paridhan fashion show was part of the August 2025 event in Patna, promoting PPE kit usage among sanitation workers under the NAMASTE scheme.

## Severe Acute Malnutrition (SAM)

Severe Acute Malnutrition (SAM) is the most dangerous form of malnutrition, characterized by very low weight-for-height, visible severe wasting, or nutritional edema. It increases the risk of death, especially among children under five. SAM weakens the immune system, making infections more deadly. Treatment requires therapeutic feeding with specially formulated nutrient-rich foods like ready-to-use therapeutic food (RUTF). Early detection is critical to survival. SAM can cause long-term developmental delays if untreated. Globally, SAM affects millions annually, with peak prevalence in conflict and famine zones. It is monitored by agencies like UNICEF and WHO as a key indicator of humanitarian crises.

### WHY IN NEWS?

The number of children with SAM in Gaza has surged six-fold in 2025, with tens of thousands at severe risk of death due to famine and food shortages caused by conflict and blockades.

## SMEC Trust's Bharat Cares

Bharat Cares is a social impact initiative implemented by SMEC Trust, focusing on education, skill development, and community welfare in India. It operates under the aegis of SMEC, a global engineering, management, and development consultancy. Bharat Cares runs programs aimed at empowering marginalized communities, including scholarships, vocational training, and health awareness campaigns. The trust collaborates with government agencies and private sector partners to implement sustainable development projects. It emphasizes transparency, inclusivity, and long-term impact through continuous monitoring and mentorship. Bharat Cares supports first-generation learners and economically weaker sections to bridge educational and socio-economic gaps.

### WHY IN NEWS?

Bharat Cares is the implementing partner for 'Project Aarohan,' providing scholarships and mentorship to children of toll plaza employees from disadvantaged backgrounds.



## SMILE Scheme

The **SMILE (Support for Marginalized Individuals for Livelihood and Enterprise)** Scheme is an initiative by the Government of India aimed at providing comprehensive support to transgender persons. It funds infrastructure like Garima Grehs and promotes awareness through state governments and UTs. The scheme offers financial aid, counseling, skill development, and protection from social atrocities. As of 2025, Rs 8.25 Crores have been allocated and utilized under SMILE for transgender welfare. The scheme integrates mental health support and livelihood training to enable social mainstreaming of marginalized individuals.

### WHY IN NEWS?

The SMILE Scheme has been actively funding and supporting the expansion and operation of Garima Grehs for transgender welfare in 2025.

## Soil Health Card Program

The **Soil Health Card Program** is an agricultural initiative that provides farmers with detailed information on the nutrient status of their soil. It helps optimize fertilizer use and improve crop productivity by recommending appropriate nutrient applications. The program contributes to sustainable agriculture by preventing overuse or underuse of fertilizers. It is integrated into larger development campaigns like Sampoonnata Abhiyan to enhance agricultural output and produce quality. The program also supports environmental protection by promoting balanced nutrient management and reducing soil degradation.

### WHY IN NEWS?

The Soil Health Card Program's progress was praised at the Sampoonnata Abhiyan event for its positive impact on agricultural productivity and quality in Madhya Pradesh's aspirational districts and blocks.

## SPARSH Portal

**SPARSH** stands for System for Pension Administration Raksha, an Government of India digital platform launched to streamline pension management for defense veterans. It aims to provide hassle-free pension disbursement and grievance redressal through online services. SPARSH integrates various defense pension records and automates pension processing to reduce delays and errors. Despite its intent, many users, especially in rural areas, report difficulties due to complex data entry requirements, poor internet connectivity, and limited digital literacy. The portal represents a broader push towards e-governance in veteran affairs but faces challenges in accessibility and user-friendliness for its primary beneficiaries.

### WHY IN NEWS?

The SPARSH portal is brought into light for causing difficulties among army veterans in accessing their pensions due to connectivity issues and complicated digital procedures.

## Spatial Autocorrelation in Education Planning

Spatial autocorrelation is a statistical technique that measures the degree of similarity



between geographically close locations. In higher education planning, it identifies clusters of districts with low or high university presence. This method revealed contiguous underserved regions in India, such as North-eastern states and parts of eastern Maharashtra and Odisha, where new universities are needed. Spatial autocorrelation helps policymakers recognize patterns beyond administrative boundaries, enabling targeted interventions. It supports evidence-based decisions for equitable distribution of educational infrastructure by denoting areas that are spatially correlated with low access to universities.

#### WHY IN NEWS?

NITI Aayog's working paper uses spatial autocorrelation to identify underserved regions for establishing new universities as part of India's higher education expansion strategy.

### **Startup Mahakumbh**

The **Startup Mahakumbh** is a major annual event held in India that gathers entrepreneurs, investors, policymakers, and innovators to discuss trends, challenges, and opportunities in the startup ecosystem. It serves as a platform for networking, mentorship, and showcasing new ventures. The event marks government policies and initiatives aimed at encouraging startup growth. Recently, the focus was on the gap between Indian startups, which mainly develop consumer apps, and Chinese startups advancing in AI, robotics, and manufacturing technologies. The event reflects the government's efforts to realign startup priorities with national industrial goals.

#### WHY IN NEWS?

At the 2025 Startup Mahakumbh, Commerce Minister Piyush Goyal criticized Indian startups for focusing on food delivery and betting apps, contrasting them with Chinese startups advancing in AI and robotics.

### **State Health Regulatory Excellence Index (SHRESTH)**

The **State Health Regulatory Excellence Index (SHRESTH)** is a national framework launched to benchmark and enhance state drug regulatory systems in India. It evaluates states on 27 indices for manufacturing states and 23 indices for primarily distribution states, covering themes like human resources, infrastructure, licensing, surveillance, and responsiveness. States submit monthly data to CDSCO, which scores and shares results to promote transparency and improvement. SHRESTH is designed as a roadmap, not a scorecard, encouraging uniform implementation of drug regulations and encouraging cross-state collaboration and knowledge sharing to ensure drug safety and quality nationwide.

#### WHY IN NEWS?

SHRESTH was launched virtually by Union Health Secretary Punya Salila Srivastava to strengthen and harmonize drug regulatory systems across state of Indias and union territories, enhancing drug safety and quality standards.

### **State Organ and Tissue Transplant Organisation (SOTTO)**

The **State Organ and Tissue Transplant Organisation (SOTTO)** operates as the key



state-level authority in India for coordinating organ donation and transplantation activities. It functions under the National Organ and Tissue Transplant Organisation (NOTTO) and Regional Organ and Tissue Transplant Organisations (ROTTOs). SOTTO manages waiting lists, matches donors with recipients, and oversees transplant procedures within its state. It also facilitates awareness campaigns and training programs. Each state has a designated SOTTO to streamline organ allocation and ensure equitable distribution. SOTTOs collaborate with hospitals, law enforcement, and transport agencies to optimize organ retrieval and delivery networks, critical for time-sensitive organs like hearts.

#### WHY IN NEWS?

SOTTO's role is brought into light in addressing logistical and administrative challenges that limit heart transplant access in east India, emphasizing the need for improved infrastructure and coordination in organ transplantation systems.

### Swachh Kurukshetra Mission

The **Swachh Kurukshetra - Mera Kurukshetra, Mera Abhimaan** mission is an 11-week cleanliness campaign launched in 2025 to promote hygiene and sanitation in Kurukshetra. It runs from August 24 to November 7 and involves community participation, including citizens and officials. The mission is part of the broader Haryana Shehr Swachhta Abhiyan and focuses on cleaning every street and corner of Kurukshetra. Committees in all 32 wards of Thanesar Municipal Council have been formed to implement the plan. The campaign emphasizes civic responsibility and sustainable cleanliness practices in this sacred city.

#### WHY IN NEWS?

The mission was officially launched by Haryana Chief Minister Nayab Singh Saini as a major effort to improve Kurukshetra's cleanliness and beauty.

### Swarnandhra-Swachhandhra Programme

The **Swarnandhra-Swachhandhra** programme is a state-led initiative aimed at improving urban sanitation and municipal worker welfare in Andhra Pradesh. It integrates sanitation infrastructure development with social security measures for workers. The programme emphasizes health, safety, and financial security for sanitation staff through insurance and salary benefits. It involves collaboration between government departments and private sector partners like Axis Bank. The initiative targets urban local bodies to enhance cleanliness and worker protection, addressing both public health and labor rights. It also promotes zero-balance accounts to encourage financial inclusion among municipal employees and their families.

#### WHY IN NEWS?

The programme was brought into light during the launch of a new accident and health insurance scheme for sanitation workers in Peddapuram by Chief Minister Nara Chandrababu Naidu.



## SWAYAM Portal

**SWAYAM** (Study Webs of Active Learning for Young Aspiring Minds) is an Government of India initiative launched in 2017 to provide free online courses to students across the country. It offers courses from high school to postgraduate levels, covering diverse subjects. The platform integrates video lectures, reading materials, self-assessment tests, and discussion forums. It partners with premier institutions like IITs, IIMs, and central universities. SWAYAM aims to bridge educational gaps by providing quality resources accessible via the internet, especially benefiting remote and underprivileged learners. It supports credit transfer and certification recognized by universities and employers.

### WHY IN NEWS?

SWAYAM has introduced five new free AI-related courses aimed at equipping students with skills in artificial intelligence, machine learning, and data science to meet future job market demands.

## UDISE+ Database

The **Unified District Information System for Education Plus (UDISE+)** is an integrated database system maintained by India's Ministry of Education. It collects detailed data on schools, enrollment, infrastructure, teachers, and student performance nationwide. UDISE+ supports policy-making, planning, and monitoring of education programs. It replaced the older UDISE system in 2018 to improve data quality and timeliness by using online data entry and validation. The database is linked to digital initiatives like APAAR and Digilocker for better academic record management. UDISE+ data is used by educational institutions, government agencies, and researchers to analyze trends and allocate resources.

### WHY IN NEWS?

The APAAR ID system integrates with UDISE+ to ensure accurate, verifiable student data across schools, aiding CBSE's new board exam registration process.

## WASH (Water, Sanitation, and Hygiene)

WASH stands for Water, Sanitation, and Hygiene, an integrated approach to improving health and living conditions worldwide. It focuses on access to safe drinking water, hygienic sanitation, and proper hygiene practices. Between 2015 and 2024, global coverage of safely managed drinking water increased from **68% to 74%**, and safely managed sanitation coverage rose from **48% to 58%**. WASH inequalities persist, especially in rural areas, ethnic minorities, and people with disabilities. The WHO/UNICEF Joint Monitoring Programme (JMP) tracks WASH progress globally, emphasizing marginalized groups often missed in national statistics.

### WHY IN NEWS?

The 2025 WHO/UNICEF report released during World Water Week focuses on WASH inequalities and progress from 2000 to 2024, stressing the need for accelerated action.

## Defence



## Andaman and Nicobar Command

The **Andaman and Nicobar Command (ANC)** is the only tri-service theater command of the Indian Armed Forces, integrating the Army, Navy, and Air Force units under a single command structure. Established in 2001, it is headquartered at Port Blair and is strategically located near the Malacca Strait, a critical maritime chokepoint. The ANC oversees defense and security operations across the Andaman and Nicobar Islands, including surveillance and maritime interdiction. It also plays a vital role in disaster relief and humanitarian assistance in the region. The command enhances India's strategic reach in the Indo-Pacific region.

### WHY IN NEWS?

The ANC organised 'Aarohan - Dweep to Delhi,' a cultural and educational tour for 30 tribal students from the islands to promote national integration and expose them to urban and historical landmarks in Delhi.

## Assam Rifles

The Assam Rifles is one of India's oldest paramilitary forces, established in 1835. It operates primarily in the northeastern states, focusing on counter-insurgency, border security, and humanitarian aid. The force is under the administrative control of the Ministry of Home Affairs but operationally controlled by the Indian Army. It is known as the "Sentinels of the Northeast" and has a unique dual role of military and civil administration in remote tribal areas. The Assam Rifles recruits heavily from local populations, enhancing its effectiveness in difficult terrains. It has a long history of involvement in disaster relief and civil assistance in the region.

### WHY IN NEWS?

The Assam Rifles recently conducted a joint relief operation with the Indian Air Force to deliver essential supplies to remote villages in Manipur cut off by landslides.

## BrahMos Cruise Missile

The **BrahMos** is a supersonic cruise missile developed jointly by India and Russia, capable of being launched from land, sea, and air platforms. It travels at speeds of Mach 2.8 to 3.0, making it one of the fastest cruise missiles globally. BrahMos has a range of approximately 300 km and is known for its precision strike capability. The missile is named after the Brahmaputra and Moskva rivers. India has exported BrahMos to the Philippines, marking defense trade milestone. The missile system enhances maritime and coastal defense through its versatility and speed.

### WHY IN NEWS?

The Philippines has received two batches of BrahMos missiles from India, as part of defense modernization and increased bilateral military cooperation.

## Common Hypersonic Glide Body (C-HGB)

The **Common Hypersonic Glide Body (C-HGB)** is the unpowered, maneuverable warhead component used in U.S. hypersonic missile systems like the Army's LRHW and the Navy's Conventional Prompt Strike (CPS). It separates from its rocket booster after reaching high



altitude and speed, then glides at hypersonic velocities (above Mach 5) to its target along an unpredictable trajectory. The C-HGB is designed to withstand extreme heat generated during flight using advanced thermal protection systems. It enhances missile survivability by evading traditional missile defenses and enables rapid, precise strikes at long range.

#### WHY IN NEWS?

The C-HGB is central to the Dark Eagle missile system deployed to Australia, marking a milestone in U.S. hypersonic weapon operational testing and Indo-Pacific deterrence efforts.

### Crystal Maze Missile (ROCKS)

The **Crystal Maze** missile, also known as ROCKS, is an Israeli ballistic missile tested by the Indian Air Force from a Su-30 MKI. It is a long-range missile designed for precision strikes and was tested from the Andaman and Nicobar Islands. India attempted to integrate Crystal Maze during the Balakot air strikes but was unsuccessful at that time. The missile complements other standoff weapons like Rampage and BrahMos in India's arsenal, offering a ballistic missile option for deep strike missions.

#### WHY IN NEWS?

The IAF's successful test of the Crystal Maze missile and its integration efforts are part of broader moves to enhance long-range precision strike capabilities.

### Defence Public Sector Undertakings (DPSUs)

Defence Public Sector Undertakings (DPSUs) are government-owned corporations in India engaged in the production of defence equipment and systems. Established post-independence, DPSUs include entities like Hindustan Aeronautics Limited and Bharat Electronics Limited. They contribute to India's defence manufacturing, accounting for **57.50%** of total production in 2024-25. DPSUs focus on aerospace, electronics, naval systems, and armaments. They operate under the Ministry of Defence and have a strategic role in self-reliance. Despite the rise of private players, DPSUs maintain dominance due to established infrastructure and government support. They also engage in joint ventures with foreign and private firms.

#### WHY IN NEWS?

DPSUs accounted for 57.50% of India's total defence production in 2024-25, maintaining a dominant role amid increasing private sector participation.

### Depsang and Demchok

Depsang and Demchok are two friction points along the India-China border in eastern Ladakh. Both locations were sites of military standoffs and clashes during the 2020 border conflict. The disengagement agreement for these points was finalized on October 21, 2024, ending the last major friction areas between the two countries. These areas are strategically sensitive due to their proximity to the Line of Actual Control (LAC) and vital supply routes. The disengagement involved withdrawal of troops and establishing buffer zones to reduce tensions and prevent further conflict escalation.

#### WHY IN NEWS?

The 2024 disengagement agreement at Depsang and Demchok has enabled renewed



dialogue and the revival of diplomatic and cultural exchanges between India and China.

### **Depsang Plateau**

The Depsang Plateau is a high-altitude region in eastern Ladakh near the Line of Actual Control (LAC) between India and China. It is strategically due to its proximity to the Siliguri Corridor, India's narrow land connection to its northeastern states. The area has witnessed multiple military stand-offs, including the 2013 Chinese incursion that escalated tensions. The plateau's harsh terrain and extreme weather conditions complicate troop deployments and logistics. It is part of the broader border dispute between India and China, with both sides asserting overlapping claims. The plateau remains a sensitive flashpoint in ongoing border negotiations.

#### WHY IN NEWS?

Cited as one of the last two locations where India and China agreed to complete disengagement in their border standoff by October 2024.

### **Exercise Aarogya Setu**

Exercise Aarogya Setu is the first-ever civil-military medical fusion exercise conducted by the Indian Army, held in Rupai, Doomdooma, Tinsukia district, Assam. It involved collaboration between the Army Medical Corps, senior civil doctors from leading hospitals, Primary Health Centres (PHCs), and the Northern Frontier Railway Hospital. The exercise focused on joint medical response during disasters and war-like situations. It emphasized casualty evacuation, medical cooperation, and disaster preparedness. The event encouraged trust and resilience between military and civilian medical services, setting a precedent for future integrated medical operations in conflict and emergency scenarios.

#### WHY IN NEWS?

Exercise Aarogya Setu was organised for the first time to enhance cooperation between Army and civil medical services in Assam, focusing on disaster and wartime medical response.

### **Exercise Achook Prahar**

Exercise Achook Prahar is a joint military drill conducted by the Indian Army and the Indo-Tibetan Border Police to simulate battlefield conditions. The exercise involves coordinated use of mortars, machine guns, rockets, and grenades to test firepower, accuracy, and tactical synergy. It emphasizes interoperability between the Army and paramilitary forces in high-altitude environments. The exercise aims to validate joint operational preparedness and battlefield effectiveness in the challenging terrains of Arunachal Pradesh. It provides realistic training scenarios to enhance combat readiness and strengthen border security against potential threats.

#### WHY IN NEWS?

Exercise Achook Prahar took place from August 25 to 28, 2025, demonstrating seamless coordination and combat prowess between the Indian Army's Spear Corps and the ITBP in Arunachal Pradesh.



## Exercise Bright Star

Exercise Bright Star is a **biennial multilateral military exercise** initiated in 1980, primarily hosted by Egypt in partnership with the United States. It is one of the largest tri-service exercises in the Middle East, involving land, air, and naval forces from several countries. The exercise focuses on enhancing interoperability, joint planning, and operational capabilities in various warfare domains. Over the decades, it has evolved to include live firing, command post exercises, and subject matter expert interactions. Bright Star encourages military cooperation and regional stability among participating nations, reflecting geopolitical alliances and defense diplomacy.

### WHY IN NEWS?

Exercise BRIGHT STAR 2025 is scheduled from August 28 to September 10, with India participating alongside other friendly nations to demonstrate operational capabilities.

## Exercise Maitree

**Exercise Maitree** is an annual joint military training exercise between the armies of **India and Thailand**, initiated in 2006. It focuses on counter-terrorism operations in semi-urban terrain at the company level. The exercise aims to enhance interoperability, strengthen military cooperation, and share tactical knowledge. It is conducted alternatively in India and Thailand, with the 14th edition scheduled in **Umroi, Meghalaya**. The exercise operates under a United Nations mandate, emphasizing peacekeeping and regional security. It contributes to strengthening bilateral relations and improving preparedness for multinational operations.

### WHY IN NEWS?

The 14th edition of Exercise Maitree is scheduled from September 1 to 14, 2025, at Umroi, Meghalaya, focusing on joint counter-terrorism operations between India and Thailand.

## Exercise Samanvay Shakti

Exercise Samanvay Shakti is a Military-Civil Integration Exercise initiated by the Indian Army to enhance coordination between security forces, government departments, and civil institutions. It focuses on addressing complex regional challenges through unified efforts. The exercise involves practical rehearsals to improve readiness, communication, and standard operating procedures. Participants include the Indian Army, Air Force, police, intelligence agencies, disaster response forces, medical officials, and public sector companies like OIL India and IOCL. It emphasizes disaster management, healthcare, education, infrastructure, narcotics control, and employment opportunities in the armed forces. The exercise encourages trust and national integration in Assam and Manipur.

### WHY IN NEWS?

Exercise Samanvay Shakti 2025 was inaugurated in Assam's Tinsukia district and is ongoing in Manipur, aiming to improve synergy between military and civil agencies for regional security and development.

## Grey Zone Threats

Grey Zone Threats refer to hostile activities that fall between peace and conventional war,



involving coercion, subversion, and ambiguity. These threats include cyberattacks, disinformation campaigns, proxy warfare, and economic pressure, designed to destabilize without triggering full-scale conflict. They exploit legal and political loopholes, making responses complex. Grey Zone strategies are increasingly relevant in modern security, especially in regions with contested sovereignty or geopolitical tension. Military doctrines now emphasize countering such threats through integrated civil-military approaches, intelligence fusion, and technological innovation.

#### WHY IN NEWS?

Grey Zone Threats are a major theme at RAN SAMWAD-2025, reflecting their growing importance in contemporary warfare discussions.

### **Headquarters Integrated Defence Staff**

The **Headquarters Integrated Defence Staff (HQ IDS)** was established in 2001 to promote jointness among the Indian Army, Navy, and Air Force. It acts as the secretariat for the Defence Committee of the Cabinet and the Chiefs of Staff Committee. HQ IDS is responsible for coordinating joint planning, operations, and training to enhance interoperability among the services. It also manages joint logistics, intelligence sharing, and defence acquisitions. The organization plays a critical role in India's military modernization and strategic decision-making, serving as a bridge between the Ministry of Defence and the three armed services.

#### WHY IN NEWS?

HQ IDS personnel are participating in the multilateral Exercise BRIGHT STAR 2025 to improve joint operational coordination among Indian armed services and allied nations.

### **iDEX Initiative**

The Innovations for Defence Excellence (iDEX) initiative is an Government of India program launched to encourage innovation and technology development in defence by engaging startups and private industry. It provides funding, mentorship, and market access to firms working on defence solutions, including AI/ML and classified data integration. iDEX aims to reduce import dependence by promoting indigenous technologies. It operates under the Department of Defence Production and supports projects that align with India's strategic autonomy goals. The initiative encourages public-private partnerships within a secure framework to accelerate defence modernization and innovation.

#### WHY IN NEWS?

iDEX is mentioned as a critical mechanism to expand efforts for secure, classified data integration and AI-driven defence technologies, supporting India's vision for a unified intelligence backbone.

### **INS Udaygiri**

INS Udaygiri is an indigenously built stealth frigate of the Indian Navy, part of the Project 17A class. It features advanced stealth technologies, including reduced radar cross-section and infrared signatures. The ship is equipped with state-of-the-art sensors, anti-



submarine warfare capabilities, and surface-to-air missile systems. It enhances the Navy's blue-water operational reach and resilience. Built at Mazagon Dock Shipbuilders Limited, it represents step in India's self-reliance in defense manufacturing. The frigate is designed for multi-role operations, including maritime security, anti-piracy, and power projection in the Indian Ocean Region.

#### WHY IN NEWS?

INS Udaygiri was recently commissioned by Defence Minister Rajnath Singh at the Eastern Naval Command, symbolizing India's push for indigenous naval capabilities amid growing regional maritime challenges.

### **Integrated Air Command and Control System (IACCS)**

The **Integrated Air Command and Control System (IACCS)** is an indigenous Indian Air Force network for real-time coordination of air defense assets. It integrates radar, communication, and command systems to provide a comprehensive air picture and enable rapid responses to aerial threats. IACCS played important role during Operation Sindoor by coordinating air strikes and neutralizing drone swarms targeting civilian and religious sites. It supports layered defense involving surface-to-air missiles and legacy systems like Pechora and Osa-AK, enhancing situational awareness and operational efficiency across India's airspace.

#### WHY IN NEWS?

IACCS was instrumental in Operation Sindoor's success, enabling precise air operations and defense against drone attacks during the May 2025 conflict with Pakistan.

### **Integrated Test Range (Chandipur)**

The **Integrated Test Range (ITR)** at Chandipur, Odisha, is a premier missile testing facility of India, established in 1982. It covers over 2,200 square kilometers along the Bay of Bengal coast. The ITR supports testing of surface-to-surface, surface-to-air, and air-to-surface missile systems. Its coastal location allows missiles to be tested safely over the sea. The range includes advanced radar tracking, telemetry, and electro-optical systems for real-time data acquisition. It has been very important in the development of the Agni, Prithvi, and Akash missile series. Chandipur's ITR is one of the few missile test ranges worldwide with extensive instrumentation.

#### WHY IN NEWS?

The Agni-5 missile was test-fired from the Integrated Test Range at Chandipur, Odisha, validating all operational and technical parameters.

### **Limited Area Defense**

Limited Area Defense is a missile defense concept aimed at protecting specific population centers or critical infrastructure from missile threats. It involves deploying radars, interceptors, and launchers locally to provide a last line of defense against missiles that evade higher layers. This layer may incorporate existing systems like the Patriot missile defense system combined with new common launchers capable of firing current and future interceptors. It focuses on countering a broad spectrum of threats including



hypersonic weapons, cruise missiles, and short-range ballistic missiles. The concept enhances layered defense by adding localized protection within the broader Golden Dome architecture.

#### WHY IN NEWS?

Limited Area Defense is the fourth intercept layer in the Golden Dome plan, designed to shield U.S. population centers from missile attacks using integrated radar and interceptor systems.

#### Operation Alert

**Operation Alert** is a security initiative launched by the Border Security Force (BSF) along the Rajasthan border to enhance vigilance during sensitive periods such as Independence Day. It involves **intensified patrols, drills, and a comprehensive review of standard operating procedures (SOPs)** to counter potential threats. The operation typically runs for a specified period, here from 11 August to 17 August, focusing on strict border management and real-time threat neutralization. It uses **advanced surveillance gadgets** to collect intelligence and monitor cross-border activities, enabling dynamic counterplanning. The operation aims to maintain heightened readiness during national events.

#### WHY IN NEWS?

The BSF launched Operation Alert on 11 August 2025 to strengthen border security ahead of Independence Day, with intensified patrols and SOP reviews until 17 August.

#### Operation Mahadev

Operation Mahadev was a joint counter-terrorism mission conducted by the Indian Army, Jammu and Kashmir Police, and the Central Reserve Police Force (CRPF). It took place near Dachigam National Park in Srinagar and targeted terrorists involved in the April 22 Pahalgam attack. The operation resulted in the killing of three terrorists identified as Suleman Shah alias Faisal Jaat, Hamza Afgani, and Jibran Bhai. The mission was protracted and coordinated, involving intense firefights to neutralize the threat. Operation Mahadev is noted for its coordination between multiple security agencies to respond to terrorist threats in Kashmir.

#### WHY IN NEWS?

Operation Mahadev successfully neutralized three terrorists responsible for the deadly April 22 Pahalgam attack that killed 26 civilians.

#### Operation ShivShakti

Operation ShivShakti is an anti-infiltration mission conducted by the Indian Army in the Poonch sector of Jammu and Kashmir. It relies on **precise intelligence inputs** from both the Indian Army's intelligence units and the Jammu and Kashmir Police (JKP). The operation targets terrorists attempting to cross the Line of Control (LoC). In one instance, it led to the elimination of two terrorists and the recovery of three weapons. The operation emphasizes **swift action and accurate firepower** to prevent infiltration and maintain security along the sensitive border area.



## WHY IN NEWS?

Operation ShivShakti was recently launched to counter infiltration attempts in the Poonch sector, resulting in the killing of two terrorists trying to cross the LoC.

**Ordnance Factory Board (OFB)**

The Ordnance Factory Board (OFB) was a government agency responsible for manufacturing defence equipment and ammunition in India. Established in 1775, it operated 41 factories across the country. OFB contributed **14.49%** of India's defence production in 2024-25. In 2021, OFB was reorganized into seven different Public Sector Undertakings (PSUs) to improve efficiency and accountability. The factories produced a wide range of products including small arms, artillery, explosives, and vehicles. OFB played important role in supplying the Indian Armed Forces and supporting indigenization efforts in defence manufacturing.

## WHY IN NEWS?

OFB contributed 14.49% of total defence production in 2024-25, despite its recent restructuring into multiple PSUs.

**Project Kusha**

Project Kusha is an indigenous Indian defense initiative led by DRDO to develop a long-range air defense missile system. It aims to create a missile capable of intercepting high-speed aerial threats at extended ranges, complementing existing systems like the S-400. The project focuses on advanced propulsion, seeker technology, and electronic counter-countermeasures to enhance interception success against stealth and maneuvering targets. It is intended to boost India's layered air defense network and reduce reliance on foreign missile systems. Development milestones include successful testing of key subsystems and integration with Indian radar platforms.

## WHY IN NEWS?

The IAF is pressing for rapid progress on Project Kusha to strengthen its long-range air defense capabilities as part of a broader modernization effort following Operation Sindoor.

**Quick Reaction Teams (QRT)**

Quick Reaction Teams (QRT) are rapid response units within the CISF designed to react swiftly to security breaches at critical installations. These teams receive specialized training in counter-terrorism, hostage rescue, and emergency response. QRTs are equipped with advanced weaponry and tactical gear to ensure immediate action during incidents. They operate at airports, industrial units, and other sensitive locations. The QRT concept was introduced to enhance the force's ability to neutralize threats before escalation. Women commandos are now being integrated into QRTs to improve operational diversity and effectiveness.

## WHY IN NEWS?

Women commandos trained at the RTC Barwaha will be deployed in CISF's Quick Reaction Teams to strengthen security at high-risk sites.



## Raksha Mantri

The **Raksha Mantri** is the Government of India minister responsible for the Ministry of Defence, overseeing the country's defense policy, armed forces, and defense production. The position is a Cabinet rank, often held by a senior political leader. The Raksha Mantri plays a key role in military modernization, strategic defense planning, and international defense cooperation. The office is located in South Block, New Delhi, part of the Secretariat Building. The term Raksha Mantri literally means Defence Minister in Hindi and is unique to India's administrative nomenclature.

### WHY IN NEWS?

The Defence Minister met the tribal students during their visit to South Block, emphasizing the importance of human values and national strength during the 'Aarohan' program.

## Spear Corps

The **Spear Corps** is a specialized corps of the Indian Army, focused on high-altitude warfare and rapid offensive operations. It operates primarily in the eastern sector, including Arunachal Pradesh, where terrain is mountainous and challenging. The corps is equipped with advanced artillery, infantry, and mechanized units to conduct swift, coordinated strikes. It integrates intelligence, surveillance, and reconnaissance (ISR) assets for battlefield awareness. The Spear Corps was conceptualized to enhance India's offensive capabilities along the China border. It plays a critical role in joint exercises with paramilitary forces like the ITBP to improve interoperability in harsh climatic conditions.

### WHY IN NEWS?

The Spear Corps conducted Exercise Ahook Prahar alongside the ITBP in Arunachal Pradesh from August 25-28, 2025, showcasing joint firepower and operational preparedness under simulated battlefield conditions.

## Starlink Smuggling in India

Starlink devices have been confiscated by Indian security forces from insurgent groups and drug trafficking networks. These satellite internet terminals offer encrypted, borderless communication, making them attractive for illicit use in remote and conflict-affected regions. The devices bypass traditional internet infrastructure, complicating surveillance and control efforts. Their smuggling presents new challenges for law enforcement and national security agencies. India's experience puts stress on the dual-use nature of satellite internet technology, where civilian tools can be exploited for illegal activities. Regulatory and operational controls are evolving to address these security concerns.

### WHY IN NEWS?

The article discusses the security implications of Starlink devices being smuggled into India and used by insurgents and criminals.

## Sudarshan Chakra Mission

The Sudarshan Chakra mission is an indigenous multi-layered air defence system aimed at



detecting, acquiring, and neutralising enemy air vectors using both soft kills (electronic/cyber measures) and hard kills (missiles, lasers). It integrates Quick Reaction Surface-to-Air Missiles (QRSAM), Very Short Range Air Defence System (VSHORADS), and 5-kilowatt lasers. The system will combine multi-domain ISR inputs from ground, air, maritime, undersea, and space sensors to provide a fused real-time threat picture. It relies heavily on artificial intelligence, big data, quantum technologies, and a whole-of-nation approach to protect India's strategic and civilian sites.

#### WHY IN NEWS?

Chief of Defence Staff General Anil Chauhan discussed the Sudarshan Chakra mission at Ran Samwad 2025, detailing India's efforts to develop its own 'Iron Dome' equivalent air defence system.

### **Super Garuda Shield**

**Super Garuda Shield** is an annual joint military exercise hosted by the Indonesian National Armed Forces since 2009. Initially a bilateral drill between Indonesia and the United States, it expanded in 2022 to include troops from a dozen other countries such as Australia, Japan, and the United Kingdom. The exercise involves around **6,500 troops** and focuses on strengthening regional military cooperation and interoperability. It includes combat training and live-fire drills conducted in Jakarta and Sumatra. The exercise serves as a platform to demonstrate collective commitment to sovereignty and deterrence against regional threats.

#### WHY IN NEWS?

The 2025 Super Garuda Shield exercise began in Indonesia with expanded participation, denoting growing military cooperation amid rising regional tensions involving China's activities in the South China Sea.

### **Swarm Drones**

Swarm drones are groups of autonomous unmanned aerial vehicles operating collaboratively using AI algorithms. India has developed indigenous swarm drone technology for military applications such as surveillance, reconnaissance, and coordinated attacks. These drones communicate and adapt in real-time to dynamic battlefield conditions. Swarm technology enhances operational flexibility, force multiplication, and reduces risk to human personnel. India's Defence Research and Development Organisation (DRDO) has successfully tested swarm drones, integrating them with AI-based predictive maintenance systems for platforms like the Sukhoi-30 MKI. Swarm drones represent a shift towards networked, intelligent warfare systems.

#### WHY IN NEWS?

Swarm drones are cited as an outcome of India's increased R&D budget for AI/ML, reflecting progress in indigenous advanced defence technologies.

### **Warship Design Bureau (WDB)**

The Warship Design Bureau is the Indian Navy's in-house organization responsible for designing naval vessels. Established over five decades ago, it has designed over **100**



**warships**, including the Project 17A frigates. The WDB integrates advanced naval architecture, stealth technology, and indigenous systems to meet operational requirements. It collaborates closely with Indian defense manufacturers and shipyards, contributing to the **Aatmanirbhar Bharat** initiative. The bureau's designs emphasize modular construction and indigenous technology integration, reducing dependency on foreign suppliers. It plays a critical role in enhancing India's maritime defense capabilities by delivering versatile, modern warships.

#### WHY IN NEWS?

The WDB designed the Udaygiri frigate, which is the 100th ship designed by the bureau, showcasing India's progress in indigenous warship design.

### **Awards, Honours, Personalities, Books, Sports etc.**

#### **Kho-Kho**

Kho-Kho is a traditional Indian tag sport played by two teams of twelve players, with nine active on the field. Originating in ancient India, it involves chasing and tagging opponents while running and dodging in a rectangular court. The game is governed by the **Kabaddi Federation of India** and is included in national and regional sports events. Kho-Kho requires agility, speed, and teamwork. It has seen modernization with standardized rules and professional leagues such as the Ultimate Kho Kho league launched in 2022 to popularize the sport nationally and internationally.

#### WHY IN NEWS?

Kho-Kho is part of the sports competitions during the National Sports Day 2025 celebrations, denoting indigenous games alongside modern sports.

#### **Prof. V. Ramalingaswami**

Prof. V. Ramalingaswami (1921-2001) was a prominent Indian medical scientist known for his work in nutrition and public health. He served as the Director-General of the Indian Council of Medical Research and contributed to combating malnutrition in India. Ramalingaswami was instrumental in establishing research protocols for iodine deficiency disorders and was the first Asian to become Director-General of the ICMR. He received the Padma Vibhushan in 1974. His birth anniversary is commemorated annually by ICMR to honor his pioneering contributions to Indian medical research and public health policy.

#### WHY IN NEWS?

The ICMR-SHINE Initiative event on 8th August 2025 commemorates the birth anniversary of Prof. V. Ramalingaswami, recognizing his legacy in Indian medical research.

#### **Sant Kabir Handloom Awards**

The Sant Kabir Handloom Awards honor master weavers and contributors to the Indian handloom sector. Established by the Government of India, the awards are named after Sant Kabir, a 15th-century poet and saint known for his couplets promoting social harmony and spirituality. The awards recognize exceptional skill, innovation, and efforts to preserve traditional weaving techniques. Recipients receive a citation, a shawl, and a cash prize. The awards aim to encourage artisans to sustain handloom crafts amid industrial



competition and promote cultural heritage through excellence in weaving.

WHY IN NEWS?

Recently, the Sant Kabir Handloom Awards will be presented to 5 awardees during the National Handloom Day event at Bharat Mandapam.

## Science & Technology

### Gaganyatri Group Captain Subhanshu Shukla

Group Captain Subhanshu Shukla is an Indian Air Force officer and member of the Gaganyatri mission team. He conducted three Department of Biotechnology-backed experiments aboard the International Space Station. These experiments focus on space biotechnology and biomanufacturing, exploring biological processes in microgravity to advance scientific understanding and applications on Earth. His work supports the collaboration between DBT and ISRO, aiming to integrate space science with biotechnology for innovations in health, agriculture, and environmental sustainability. The experiments contribute to India's growing role in space-based biotech research.

WHY IN NEWS?

Shukla's space experiments were brought into light during the BioE3 Policy anniversary event, emphasizing India's expanding biotechnology research in space.