

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



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## Contents

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Polity & Governance .....	3
Economy & Banking/Finance .....	18
Geography (Indian & Physical) .....	36
Environment & Ecology .....	45
History (India / World) & Culture .....	81
Science & Technology .....	93
International Relations & Organizations .....	110
Social Development & Government Schemes .....	117
Defence .....	136
Awards, Honours, Personalities, Books, Sports etc. ....	147



## Polity & Governance

### One Nation, One Data Policy

The One Nation, One Data policy aims to unify and standardize data collection and management across various sectors in India, including education, health, and governance. It seeks to create a centralized data ecosystem to improve transparency, policy-making, and resource allocation. The policy encourages integration of disparate databases into a single platform, promoting data sharing among government agencies. It supports evidence-based decision-making and reduces duplication of efforts. The initiative aligns with India's digital governance goals and the National Data Governance Framework. It is expected to enhance efficiency and accountability in public services.

#### WHY IN NEWS?

Education Minister Dharmendra Pradhan mentioned the upcoming adoption of the One Nation, One Data policy in the context of reforming the institutional ranking mechanism for higher education.

### Andaman-Nicobar Choke-point

The **Andaman-Nicobar choke-point** refers to the strategic maritime location near the Andaman and Nicobar Islands, controlling key shipping lanes in the Indian Ocean. It is crucial for regional logistics, undersea cable routes, and military operations. The islands lie near the Malacca Strait, a vital global trade artery. India plans to develop this choke-point into a logistics and Maintenance, Repair, and Overhaul (MRO) hub for shipping, aviation, and undersea cables. This development aims to enhance India's maritime security, economic influence, and connectivity in the Indo-Pacific region. The location has been historically underutilized despite its strategic importance.

#### WHY IN NEWS?

The Andaman-Nicobar choke-point is central to India's Tier I roadmap for establishing a reliable Indian Ocean corridor and expanding regional logistics capabilities in 2025.

### Anti-Narcotics Task Force (ANTF)

The Anti-Narcotics Task Force (ANTF) is a specialized unit established by state of India and Union Territories to combat drug trafficking and abuse. Created following directives in 2021, each ANTF operates under the guidance of the Narcotics Control Bureau (NCB). ANTFs coordinate intelligence sharing, conduct joint operations, and engage in community outreach to reduce drug demand. The task force emphasizes inter-state cooperation and law enforcement synergy. ANTFs also focus on harm reduction strategies alongside supply control. Their creation marked a shift towards a unified, multi-agency approach in India's anti-drug policy framework, aiming to strengthen enforcement and rehabilitation efforts.

#### WHY IN NEWS?

The 2nd National Conference of ANTF Heads from all states and UTs was inaugurated by Union Home Minister Amit Shah in New Delhi, focusing on a unified strategy against drug abuse.



### **Article 143 Advisory Jurisdiction**

Article 143(1) of the Constitution of India empowers the President to seek the Supreme Courts opinion on questions of law or fact of public importance. This advisory jurisdiction allows the Court to provide independent advice but the opinion is not binding. The Court may also decline to give an opinion. Historically, the Court has returned references without answering at least twice. This provision is distinct from appeals or reviews and is meant to clarify constitutional doubts. It is a tool for resolving complex legal questions before they escalate into disputes affecting governance or public interest.

#### WHY IN NEWS?

President Droupadi Murmu invoked Article 143 to seek the Supreme Courts opinion on the powers of the President and Governors in giving assent to Bills, following a ruling on Tamil Nadu Governor R N Ravis delay in granting assent.

### **Article 19(1)(g) of the Constitution of India**

Article 19(1)(g) guarantees the right to practice any profession, or to carry on any occupation, trade, or business, subject to reasonable restrictions. This fundamental right protects economic freedoms but allows the state to impose laws for public interest, morality, or security. Judicial interpretation balances this right against regulatory needs. The clause is often cited in challenges to business restrictions, including bans on online gaming, gambling, or other trades. It is a mainstay for arguments on federalism and economic liberties in Indias constitutional framework.

#### WHY IN NEWS?

The ban on online real money games has been challenged as violating Article 19(1)(g), raising constitutional questions about business rights and federal authority.

### **Article 200**

Article 200 of the Constitution of India outlines the Governors options when a Bill is passed by the State legislature – to assent, withhold assent, return the Bill for reconsideration, or reserve it for the Presidents consideration. Unlike Section 75 of the Government of India Act, 1935, Article 200 omits the phrase in his discretion, implying the Governor must act on the aid and advice of the Council of Ministers. This omission restricts the Governors independent discretion in assenting to or withholding Bills, reinforcing the principle that the Governor acts as a constitutional head rather than an independent authority.

#### WHY IN NEWS?

The Supreme Court of India recently fixed a three-month timeline for Governors to decide on Bills under Article 200, clarifying the limits of their discretion and ensuring timely legislative processes in States.

### **Article 239A**

Article 239A of the Constitution of India provides the framework for the creation of Union Territories with legislatures and councils of ministers. It was introduced via the 35th Amendment in 1975, allowing the central government to establish legislative assemblies



in Union Territories like Puducherry and Delhi. This article gives the Union Territory a degree of self-governance while remaining under the direct authority of the President of India. It is because it offers a constitutional pathway for regions seeking administrative autonomy without full statehood. The Kuki-Zo community's demand for a separate UT under this article is rooted in their desire for political survival and self-administration.

#### WHY IN NEWS?

The Kuki-Zo Councils demand for a separate Union Territory in Manipur is based on Article 239A, which allows for the creation of UTs with legislatures, denoting a constitutional mechanism for autonomy.

### **Article 3 of the Constitution**

Article 3 of the Constitution of India empowers Parliament to reorganize states by forming new states, altering boundaries, or changing names. It allows separation of territories from states, uniting two or more states or parts, and increasing or diminishing state areas. However, it does not authorize converting a state into a Union Territory, as this would violate federal principles. The article enables flexible state reorganization to address political, cultural, or administrative needs. It was used extensively during the States Reorganisation Act of 1956, which increased India's states from 14 to 29.

#### WHY IN NEWS?

The Supreme Court cited Article 3 in the debate over Jammu and Kashmir's statehood restoration and the constitutional limits on converting states into Union Territories.

### **Article 30(1) of Constitution of India**

Article 30(1) grants religious and linguistic minorities the right to establish and administer educational institutions of their choice. This constitutional provision protects minority groups from state interference that could alter the character or management of their schools. It aims to preserve cultural and educational autonomy, ensuring minorities can maintain their identity through education. However, this right is subject to reasonable regulations by the state. The article has been central in legal debates on balancing minority rights with universal education laws like the RTE Act.

#### WHY IN NEWS?

The Supreme Court's recent discussions on whether minority schools must comply with RTE norms, including the Teacher Eligibility Test, involve interpreting Article 30(1) to balance minority autonomy and inclusive education.

### **Article 32 Writ Petitions by States**

Article 32 of the Constitution of India guarantees the right to constitutional remedies to enforce fundamental rights through writ petitions directly to the Supreme Court. Traditionally, this remedy is available to individuals or groups, not states. The Centre opposed states filing writ petitions under Article 32, arguing it is not meant for states to claim fundamental rights for themselves. However, some states, including Andhra Pradesh, defended their right to approach the Supreme Court under Article 32. The debate raises questions about the scope of fundamental rights enforcement and the



federal balance in India's constitutional framework.

#### WHY IN NEWS?

The Supreme Court's April ruling allowed states to file writ petitions under Article 32, a move opposed by the Centre but supported by several opposition-ruled states.

### Article 355

Article 355 of the Constitution of India mandates the Union Government to protect States against external aggression and internal disturbances and ensure that State governments function according to constitutional provisions. It empowers the Union to intervene if a State's governance is impaired. This article is often invoked to justify federal intervention in State affairs to maintain constitutional order. It does not explicitly provide a mechanism for intervention but has been interpreted to allow the Union to direct Governors to perform constitutional duties, such as assenting to Bills.

#### WHY IN NEWS?

Article 355 was referenced in Supreme Court arguments supporting intervention when Governors delay assent to Bills, justifying the imposition of a time limit to uphold constitutional governance in States.

### Assam Accord

The **Assam Accord** was signed in 1985 between the Government of India and leaders of the Assam Movement to address illegal immigration from Bangladesh. It set **March 24, 1971**, as the cut-off date for detecting and deporting illegal migrants. The Accord promised constitutional, legislative, and administrative safeguards to protect the indigenous Assamese people's cultural, social, and political rights. Despite its significance, implementation has been uneven, leading to continued tensions. The Accord also led to the establishment of the **National Register of Citizens (NRC)** in Assam, aimed at identifying illegal immigrants. It remains a mainstay of Assam's migration politics.

#### WHY IN NEWS?

The Assam Accord's promises remain central to ongoing debates about migration, citizenship, and identity in Assam, as the state continues to grapple with illegal immigration and demographic changes amid global migration unrest.

### Chief Electoral Officers (CEOs) Role

Chief Electoral Officers (CEOs) are state-level officials appointed by the Election Commission of India to oversee election management and enforcement of electoral laws. CEOs issue show-cause notices to political parties violating norms, conduct hearings, and submit compliance reports to the Election Commission. Their recommendations influence decisions on party registrations and de-listings. CEOs coordinate between the central Election Commission and local election machinery to ensure electoral integrity and adherence to legal provisions under the Representation of the People Act, 1951.

#### WHY IN NEWS?

CEOs have been directed to issue show-cause notices and conduct hearings for RUPPs identified for non-compliance before final de-listing decisions by the Election Commission.



## Digital India BHASHINI

**Digital India BHASHINI** is an AI-driven multilingual translation platform developed under the Digital India initiative to facilitate real-time communication and access to government services in multiple Indian languages. It aims to bridge language barriers in e-Governance by enabling seamless translation of documents, websites, and citizen interactions. The platform supports regional language inclusivity, enhancing digital literacy and service reach in rural and remote areas. BHASHINI integrates Natural Language Processing (NLP) and Machine Learning to improve translation accuracy over time. It is part of India's broader effort to promote digital inclusivity and empower citizens through language accessibility.

### WHY IN NEWS?

Digital India BHASHINI was brought into light at the 28th National Conference on e-Governance for its role in delivering multilingual, real-time citizen services as part of India's AI-driven governance strategy.

## Directive Principles of State Policy (India)

The **Directive Principles of State Policy** are guidelines enshrined in Part IV of the Constitution of India, adopted in 1950. They are non-justiciable principles intended to guide the government in framing laws and policies aimed at social and economic welfare, including promoting international peace and security. These principles reflect India's commitment to justice, equality, and human rights. Although not legally enforceable, they influence legislative and executive actions. The promotion of peace and security internationally is explicitly mentioned, linking domestic governance with India's foreign policy ethos.

### WHY IN NEWS?

The text references these principles to show India's constitutional commitment to peace amid its muted stance on the 2023-2025 Israel-Palestine conflict.

## Five Case Model

The **Five Case Model** is a project appraisal framework widely used in the U.K. public sector to assess infrastructure investments. It requires five cases – Strategic, Economic, Commercial, Financial, and Management, ensuring comprehensive evaluation of a project's value, feasibility, and risks. The model promotes transparency and accountability in procurement and investment decisions. It has influenced international best practices and is recommended by the UKIIFB report for adoption in India to align procurement processes with global standards and improve investor confidence.

### WHY IN NEWS?

The UKIIFB report recommends India align its infrastructure procurement with the U.K.'s Five Case Model to reduce risks and attract foreign investment.

## Foreigners Regional Registration Officers (FRROs)

Foreigners Regional Registration Officers (FRROs) are designated officials responsible for the registration, regulation, and monitoring of foreign nationals within specific regions in



India. FRROs have authority to issue visas, permits, and extend stays, and they coordinate with local police and immigration authorities. Established under the Immigration and Foreigners Act framework, FRROs ensure compliance with immigration laws, including registration of foreigners and enforcement of visa conditions. They also handle cases of overstaying and illegal entry. Their powers include investigation, detention, and deportation recommendations. FRRO offices operate in major cities and act as regional hubs for foreigners administrative matters.

#### WHY IN NEWS?

The Immigration and Foreigners Act, 2025, formalized the roles and powers of FRROs, designating district SPs/DCPs as local civil authorities and integrating FRROs into the centralized immigration enforcement system.

### Four Cs of Mediation

The **Four Cs of Mediation** refer to four essential elements that define effective mediation – cost-effectiveness, confidentiality, control, and creativity. Cost-effectiveness ensures mediation is an affordable alternative to litigation. Confidentiality protects the privacy of parties and encourages open communication. Control allows disputants to actively shape the outcome rather than having a decision imposed by a judge. Creativity enables tailored solutions that meet the unique needs of the parties involved. These elements collectively make mediation a flexible and efficient dispute resolution mechanism, encouraging amicable settlements and preserving relationships.

#### WHY IN NEWS?

The Chief Minister of Odisha emphasized the Four Cs during the National Mediation Conference to underline mediations benefits in judicial reform and dispute resolution.

### Gram Sabha

The **Gram Sabha** is a village assembly consisting of all adult members registered in the electoral rolls of a village within Indias Panchayati Raj system. It acts as a decision-making body with powers to approve or reject projects affecting local resources, especially forest land. Under the **Forest Rights Act (FRA) 2006**, the Gram Sabha's consent is mandatory for diversion of forest land, ensuring community participation in environmental governance. The quorum requirement ensures that decisions are representative. It functions as a custodian of tribal and forest dwellers' rights, safeguarding ancestral lands from unauthorized use or alienation.

#### WHY IN NEWS?

Gram Sabha consent is central to the legal dispute over the Great Nicobar project, where tribal councils allege their rights were bypassed in forest land diversion approvals.

### International Reference Classification of Occupations

The **International Reference Classification of Occupations (IRCO)** is a standardized framework developed to categorize occupations globally based on skill and qualification requirements. It aims to enable comparability of labor data across countries, facilitating international labor mobility and matching workforce skills with global job demands. The



classification supports policy-making, migration management, and employment services by providing a common language for occupations. It is endorsed by the International Labour Organisation (ILO) and is being developed through international collaboration, including the Government of India. IRCO addresses challenges of demographic deficits and digitalization by easing skill shortages worldwide.

#### WHY IN NEWS?

A Memorandum of Understanding between India and the ILO was signed in September 2025 to collaborate on developing the IRCO, strengthening global skill comparability and enhancing youth employment opportunities.

### **Jan Vishwas Act**

The **Jan Vishwas Act, 2023** was India's first comprehensive law aimed at decriminalising minor offences across various statutes to reduce legal burdens and promote ease of doing business. It targeted over-criminalisation by converting many criminal offences into civil contraventions. The Act covered multiple sectors and aimed to replace punitive measures with administrative penalties. It laid the foundation for trust-based governance by introducing improvement notices and graduated penalties. The Act was a response to the legacy of colonial and socialist-era laws that criminalised minor regulatory lapses, causing judicial backlog and discouraging entrepreneurship.

#### WHY IN NEWS?

The Jan Vishwas (Amendment of Provisions) Bill, 2025, builds upon the 2023 Act by expanding decriminalisation across 355 provisions in 16 central Acts to further ease regulatory compliance and reduce judicial burden.

### **Justice B.V. Nagarathna**

Justice **B.V. Nagarathna** is the first woman judge poised to become Chief Justice of India, with a tenure scheduled for only 36 days from September 24, 2027, to October 29, 2027. She is currently the sole woman judge on the Supreme Court of India's full strength of 34 judges. Nagarathna has been part of the Collegium, the body responsible for judicial appointments, and has expressed dissent on appointments based on seniority and regional representation. Her appointment marks a historic moment but also marks ongoing gender disparity in the Courts composition.

#### WHY IN NEWS?

Justice B.V. Nagarathna's upcoming brief tenure as the first woman Chief Justice of India in 2027 marks gender imbalance and appointment controversies in the Supreme Court.

### **Kelkar Task Force**

The Kelkar Task Force was constituted in 2002 under the chairmanship of **Vijay Kelkar** to recommend reforms in India's tax system, especially indirect taxes. It proposed the introduction of a broad-based Goods and Services Tax (GST) to replace multiple indirect taxes, aiming to improve compliance and revenue efficiency. The Task Force identified challenges related to federal fiscal autonomy and recommended the creation of a GST Council for cooperative federalism. Despite detailed recommendations, political resistance



and concerns over state revenue losses delayed implementation for over a decade. The Task Forces work remains a foundational document in India's tax reform history.

#### WHY IN NEWS?

The Kelkar Task Force is mentioned as a key milestone in the GST journey, laying the groundwork for later reforms and the eventual creation of the GST Council.

### **Kuki-Zo Council**

The **Kuki-Zo Council (KZC)** is a civil society organization based in Churachandpur district, representing the Kuki-Zo communities in Manipur. It plays a key role in local peacebuilding and political advocacy. The KZC has been involved in negotiations with the Government of India, particularly concerning the opening of National Highway-02 for free movement of people and goods. The council emphasizes political demands such as separate administration while cooperating with the government on security and mobility issues. It issued clarifications to avoid misinterpretation of its stance on unrestricted movement across buffer zones.

#### WHY IN NEWS?

The Kuki-Zo Council announced the reopening of National Highway-02 for free movement after talks with the Ministry of Home Affairs, step toward restoring normalcy in conflict-affected Manipur.

### **Land Acquisition Compensation**

Land acquisition compensation in India involves paying landowners for property taken for public projects. Rates vary by location, land use, and government policies. Compensation often includes market value plus additional solatium (compensation for hardship). The process can be lengthy, involving valuation, negotiation, and legal procedures. Delays and disputes are common, especially in large infrastructure projects like dams. The ₹70,000 crore compensation for UKP Phase III land acquisition will be disbursed over three financial years, reflecting the scale of the land involved—1,33,867 lakh acres—and the government's commitment to timely payments to affected farmers.

#### WHY IN NEWS?

The Karnataka Cabinet announced compensation rates and a ₹70,000 crore budget to pay land-losing farmers over three years for land acquisition related to UKP Phase III.

### **Logistics Ease Across Different States (LEADS)**

LEADS is an annual survey initiated by the Government of India to benchmark logistics performance across States and Union Territories. It evaluates factors such as infrastructure, services, and regulatory environment influencing logistics efficiency. The 2025 edition introduces corridor-based assessments focusing on journey time, truck speed, and waiting periods, along with API-enabled section-wise speed evaluations on major roads. LEADS aids in identifying best practices and areas needing improvement, facilitating targeted policy interventions. It supports India's goal of reducing logistics costs, enhancing supply chain competitiveness, and promoting sustainable logistics aligned with Atmanirbhar Bharat and Make in India initiatives.



## WHY IN NEWS?

LEADS 2025 was launched by the Union Minister for Commerce and Industry, Shri Piyush Goyal, marking a decade of the Make in India initiative and emphasizing improved logistics performance across state of Indias.

**Manki-Munda System**

The **Manki-Munda system** is a traditional self-governance structure of the Ho tribe in Jharkhand's Kolhan region. The **Munda** is the hereditary village head responsible for resolving socio-political disputes within a village, while the **Manki** oversees a cluster of 8 to 15 villages. This system predates British rule and originally had no authority over land or revenue matters. The British later recognized and co-opted this system for administrative control, codifying it through **Wilkinson's Rules** in 1833. Despite changes post-Independence, the system persists, blending traditional authority with formal state functions.

## WHY IN NEWS?

Adivasis from the Ho tribe protested in September 2025 against perceived interference by the Deputy Commissioner in their traditional governance, fearing erosion of the Manki-Munda systems autonomy in West Singhbhum district.

**Maritime State Development Council**

The Maritime State Development Council (MSDC) is a centralised policy-making body chaired by the Union Minister of Ports, responsible for directing States on port development policies. It centralises control over maritime governance, requiring States to align with central plans like Sagarmala and PM Gati Shakti. State maritime boards cannot independently adjust frameworks without MSDC approval, limiting fiscal autonomy and flexibility. The council's creation under the Indian Ports Act, 2025, effectively reduces cooperative federalism by subordinating States to central authority in port management and development decisions, impacting the balance of power between the Union and coastal States in India.

## WHY IN NEWS?

The Maritime State Development Council was established by the Indian Ports Act, 2025, recently passed by the Rajya Sabha, sparking debate over centralisation of port governance and the erosion of State autonomy in maritime affairs.

**Ministry of Housing and Urban Affairs (MoHUA)**

The **Ministry of Housing and Urban Affairs** is the central government body responsible for urban development, housing policy, and sanitation in India. It oversees flagship programs like Swachh Bharat Mission and Smart Cities Mission. MoHUA formulates policies on urban planning, housing finance, and municipal governance. It also manages urban infrastructure projects and promotes sustainable urbanization. The ministry collaborates with state governments and international organizations to enhance urban living standards. MoHUA's initiatives often involve extensive data-driven monitoring and citizen participation frameworks.



## WHY IN NEWS?

MoHUA launched the Swachh Shehar Jodi initiative in September 2025 to improve urban sanitation through city-to-city mentorship programs.

**Model Code of Conduct**

The **Model Code of Conduct (MCC)** is a set of guidelines issued by the Election Commission of India to regulate political parties and candidates prior to elections. It prohibits the announcement of new projects, use of government resources for campaigning, and inflammatory speeches. MCC enforcement begins with the announcement of election dates and lasts until results are declared. The code aims to ensure free and fair elections but often halts government developmental activities during this period. It is not legally binding but is strictly followed to maintain electoral integrity. Violations can lead to warnings, disqualification, or election delays.

## WHY IN NEWS?

The MCC is brought into light due to its role in delaying infrastructure projects and development during frequent elections in India, contributing to concerns over governance disruptions and economic costs.

**National Awards for e-Governance (NAeG)**

The National Awards for e-Governance (NAeG) recognize exemplary digital initiatives by Central, State, District authorities, Gram Panchayats, and academic/research institutions in India. Established to promote innovation in public service delivery, NAeG awards include gold, silver, and jury distinctions across six categories. The awards show best practices in governance, technology adoption, and citizen-centric services. Recipients are selected through rigorous evaluation by expert juries. NAeG encourages competition and collaboration among government entities, encouraging scalable and sustainable e-governance solutions. The awards contribute to setting benchmarks and inspiring replication of successful projects nationwide.

## WHY IN NEWS?

The 28th National Conference on e-Governance 2025 featured the presentation of NAeG 2025 awards to 19 initiatives, recognizing excellence in digital governance across India.

**National Consumer Disputes Redressal Commission (NCDRC)**

The **National Consumer Disputes Redressal Commission (NCDRC)** is a quasi-judicial body in India established under the Consumer Protection Act, 1986. It addresses consumer complaints and disputes related to goods and services, acting as an appellate authority above state commissions. The NCDRC can issue rulings on unfair trade practices, including gender-based price discrimination. In recent years, it ruled that companies must avoid discriminatory pricing policies, indirectly tackling the Pink Tax issue. The commission's decisions influence consumer rights enforcement and promote fair market practices across India.

## WHY IN NEWS?

The NCDRC ruling on gender-based price discrimination has brought attention to the Pink Tax in India, emphasizing the need for fair pricing policies in consumer goods and



services.

### **National Crime Records Bureau (NCRB)**

The National Crime Records Bureau (NCRB) is an Government of India agency under the Ministry of Home Affairs responsible for collecting and analyzing crime data. Established in 1986, it publishes annual reports on crime statistics, including suicide data important for policy-making. The NCRB's 2022 report recorded over 1.7 lakh suicides in India, with 35% occurring in the 18-30 age group. It uses standardized crime reporting formats, aiding law enforcement and governmental agencies in crime prevention and criminal justice administration. The bureau also supports training programs and crime research.

#### WHY IN NEWS?

NCRB data on suicide rates in 2022 was cited by AIIMS experts to show the scale of mental health challenges among young adults in India.

### **National e-Governance Division (NeGD)**

The **National e-Governance Division (NeGD)** was established in 2009 under the Ministry of Electronics & Information Technology as an independent business division of the Digital India Corporation. It functions as a section 8 not-for-profit company. NeGD supports programme management, technical advisory, and implementation of e-Governance projects at central and state levels. It manages national public digital platforms including DigiLocker, UMANG, OpenForge, API Setu, and others. Its core roles include capacity building, awareness, communication, and technology management under the Digital India Programme, aiming to enhance governance through digital infrastructure and services nationwide.

#### WHY IN NEWS?

NeGD enabled Pan-India integration of e-Government services on DigiLocker and e-District platforms, expanding access to nearly 2,000 services across all 36 States and Union Territories.

### **NetBlocks**

NetBlocks is a global internet observatory and monitoring organization founded in 2017. It specializes in tracking internet shutdowns, disruptions, and cybersecurity incidents worldwide. NetBlocks uses a network of measurement points to collect real-time data on internet connectivity and performance. It provides open-source tools and reports to governments, researchers, and the public. NetBlocks gained prominence by documenting internet blackouts during political events and crises. The organization also monitors undersea cable outages and their impacts on global connectivity. Its data is frequently cited by media and tech companies for transparency and accountability in internet governance.

#### WHY IN NEWS?

NetBlocks reported the internet disruptions caused by undersea cable cuts in the Red Sea near Jeddah, Saudi Arabia, in September 2025.



## **Petroleum and Natural Gas Regulatory Board (PNGRB)**

The **Petroleum and Natural Gas Regulatory Board (PNGRB)** is a statutory body established in 2006 under the Petroleum and Natural Gas Regulatory Board Act, 2006. It regulates refining, transportation, distribution, storage, marketing of petroleum, natural gas, and their products in India. PNGRB ensures consumer protection and promotes competition in the sector. It sets standards for pipeline safety and infrastructure development. The board has quasi-judicial powers to adjudicate disputes and impose penalties. It also facilitates transparent pricing mechanisms and oversees licensing for gas pipelines and city gas distribution networks across the country.

### WHY IN NEWS?

PNGRB is seeking stakeholder comments on an LPG interoperability framework to allow consumers to refill LPG cylinders from multiple PSU distributors, aiming to reduce refill delays and improve service delivery.

## **Presidents Rule in Manipur**

**Presidents Rule** refers to the imposition of direct central government control over a state in India when the state government is unable to function according to constitutional norms. In Manipur, Presidents Rule was imposed in February 2025 after nearly two years of ethnic violence. It marked a delayed intervention, as the violence began in May 2023. The rule transfers executive powers from the elected state government to the Governor appointed by the President of India. This measure is intended to restore law and order but was seen as insufficient in addressing the deep-rooted ethnic and political issues in Manipur.

### WHY IN NEWS?

Presidents Rule was imposed in Manipur amid prolonged ethnic violence and political instability, denoting the central government's delayed response to the crisis.

## **Quality Control Orders (QCOs)**

Quality Control Orders (QCOs) are regulatory mandates issued by Government of India departments such as the Department of Chemicals & Petrochemicals and Ministry of Textiles. These orders specify quality standards for certain products to ensure safety, reliability, and compliance with technical norms. Products subject to QCOs must meet these standards before being sold or exported. QCOs apply to various industrial sectors including textiles, chemicals, and petrochemicals. They help maintain product quality and protect consumers. Compliance with QCOs is mandatory for domestic sales, but under certain schemes like Advance Authorisation, imports for exports may be exempted temporarily.

### WHY IN NEWS?

The EO period extension under Advance Authorisation now includes products under QCOs from DCPC, complementing earlier extensions for textiles QCOs, improving export flexibility.



## Sahyog Portal

The **Sahyog portal** was launched in October 2024 by the Indian Union Home Ministry and is maintained by the Indian Cyber Crime Coordination Centre. It centralizes the issuance of content takedown notices under Section 79(3)(b) of the IT Act, 2000, to internet intermediaries such as telecom operators, ISPs, and social media platforms. By April 2025, it had onboarded 65 intermediaries and nodal officers from all states, union territories, and seven central agencies. Between October 2024 and April 2025, 130 takedown notices were issued through the portal to major platforms including Google, YouTube, Amazon, and Microsoft. The portal automates and streamlines the legal notice process for unlawful online content removal.

### WHY IN NEWS?

The Karnataka High Court dismissed X Corporations petition challenging the Sahyog portal, upholding its validity as a regulatory tool for online content takedown in India.

## Sarkaria Commission

The **Sarkaria Commission (1987)** was a constitutional commission tasked with examining Centre-State relations in India. It recommended that Governors should act on ministerial advice except in rare cases of "patent unconstitutionality," where reservation of Bills for the Presidents consideration is allowed as a discretionary power. The Commission advised that the President should dispose of reserved Bills within six months. It emphasized cooperative federalism and sought to reduce conflicts between the Centre and States by clarifying gubernatorial discretion and recommending timelines for decision-making.

### WHY IN NEWS?

The Sarkaria Commissions recommendations on gubernatorial discretion and timelines were referenced in the Supreme Courts April 2025 judgment on State Bills and the ongoing Presidential reference.

## Shreya Singhal v Union of India (2015)

The Supreme Court of Indias 2015 verdict in **Shreya Singhal v Union of India** struck down Section 66A of the IT Act for being unconstitutional. It clarified that takedown orders under Section 79(3)(b) must be issued pursuant to a court order or government notification and should be limited to grounds similar to Section 69A, such as national security or public order. The judgment emphasized procedural safeguards to prevent arbitrary censorship and protect freedom of speech. It remains a landmark ruling shaping online content regulation and intermediary liability in India.

### WHY IN NEWS?

X Corporation cited this judgment to argue that the Sahyog portals takedown notices violated procedural safeguards established by the Supreme Court.

## Sixth Schedule

The **Sixth Schedule** of the Constitution of India provides for the administration of tribal areas in the northeastern states of Assam, Meghalaya, Tripura, and Mizoram. It grants autonomous district and regional councils with legislative, judicial, and administrative



powers over land, forest management, and customary laws. The schedule aims to protect tribal identity and self-governance. It is rarely extended beyond the northeast, making demands for its application in regions like Ladakh notable. The councils can make laws on social customs, marriage, and inheritance. The Sixth Schedule is distinct from the Fifth Schedule, which covers other tribal areas with less autonomy.

#### WHY IN NEWS?

Sonam Wangchuk is advocating for Ladakh to receive protections under the Sixth Schedule, seeking greater autonomy and safeguards for local tribal communities amid political unrest.

### South Block

South Block is the administrative headquarters of Indias Ministry of External Affairs and Ministry of Defence, located in New Delhi. It is part of the Secretariat Building complex and houses key government offices, including the Prime Ministers Office. The building symbolizes Indias diplomatic and defense policymaking. Its name derives from its geographic position relative to the North Block, which houses the Ministry of Finance and Home Affairs. South Block plays a critical role in shaping Indias foreign policy and defense strategy. It also hosts high-level diplomatic meetings and international negotiations involving India.

#### WHY IN NEWS?

South Block is referenced regarding Indias limited diplomatic leverage to reverse the Trump administrations H-1B visa fee hike impacting Indian nationals.

### Special Intensive Revision (SIR)

The **Special Intensive Revision (SIR)** is an electoral roll updating exercise conducted by the Election Commission of India to remove duplicate, erroneous, or ineligible voter entries and ensure the accuracy of voter lists. SIR involves door-to-door verification and requires applicants to present identity and residence proofs. It aims to uphold the integrity of elections by maintaining clean electoral rolls. The SIR conducted in Bihar in 2025 excluded the EPIC and Aadhaar cards from the list of acceptable documents, an unprecedented move that raised legal and public concerns. SIR is important process for voter registration ahead of elections in states with complex demographics.

#### WHY IN NEWS?

Bihars 2025 SIR excluded EPIC and Aadhaar from valid documents, leading to litigation and Supreme Court scrutiny over the potential disenfranchisement of voters during the revision process.

### Vertical Imbalance

**Vertical imbalance** in fiscal federalism refers to the disparity between a state's revenue-generating capacity and its expenditure responsibilities. In India, richer states like Maharashtra raise nearly 70% of their revenues internally, while poorer states like Arunachal Pradesh generate only about 9%, relying heavily on central government transfers. This imbalance causes dependence on the Union government for fiscal support,



affecting budget autonomy. It influences how states manage welfare, infrastructure, and public services, often leading to borrowing or off-budget mechanisms to meet spending needs. The term is critical in understanding India's intergovernmental fiscal relations and policy design.

#### WHY IN NEWS?

The concept explains why Uttar Pradesh, despite a revenue surplus, still depends on central transfers for 58% of its receipts, denoting fiscal disparities among state of Indias in the recent CAG report.

#### Waqf by User

**Waqf by user** is a form of waqf where property is deemed waqf due to continuous use for charitable or religious purposes without formal declaration. This concept allows government lands or other properties to be considered waqf if used for public benefit over time. It has been upheld by multiple larger benches of the Supreme Court, including in the landmark Babri Masjid judgment. The abolition of waqf by user was justified by the Court due to widespread encroachments on government lands. Waqf boards act as statutory authorities under Article 12, responsible for notifying waqf properties after surveys and recommendations.

#### WHY IN NEWS?

The Supreme Court upheld the abolition of waqf by user in its interim order on the Waqf (Amendment) Act, 2025, citing encroachment issues on government lands.

#### Ward Committees

**Ward Committees** are local governance bodies established under the 74th Constitutional Amendment Act to enable citizen participation in city development plans at the ward level. Their mandate includes facilitating community involvement in urban planning, budgeting, and monitoring of local services. Despite their legal provision, many Indian cities lack functional ward committees or hold irregular meetings, limiting grassroots participation. This absence often results in urban policies skewed towards elite interests and reduces accountability. Effective ward committees can enhance inclusive governance and ensure that urban development reflects the needs of marginalized populations.

#### WHY IN NEWS?

The limited functionality of ward committees in Indian cities restricts participatory urban governance, impacting the inclusiveness of development plans linked to SDG 11.

#### Water User Associations

**Water User Associations (WUAs)** are grassroots organizations formed to manage and distribute water resources at the local level, particularly in irrigation schemes. They enable farmers and community members to participate in water governance, maintenance of irrigation infrastructure, and equitable water sharing. WUAs help reduce water wastage, improve agricultural efficiency, and promote sustainable water use practices. These associations are key to implementing decentralized water management policies and integrating local knowledge with state and national water programs.



## WHY IN NEWS?

WUAs participated in the Sujalam Bharat Summit virtual workshop, sharing field-level experiences and contributing to discussions on scaling efficient water management technologies.

**Economy & Banking/Finance****Assam Polypropylene Plant**

Polypropylene is a thermoplastic polymer used widely in packaging, textiles, automotive parts, and consumer products. The Assam polypropylene plant is one of the few modern facilities in Northeast India, enhancing local manufacturing capacity. Polypropylene production involves polymerizing propylene monomers using catalysts under controlled conditions. The plant supports the **Make in Assam** initiative, aiming to boost regional industrialization and employment. Polypropylene is recyclable and contributes to the circular economy when properly managed. The Assam plant uses advanced technology to reduce environmental impact and improve energy efficiency compared to older plants.

## WHY IN NEWS?

Prime Minister Modi laid the foundation stone for a new polypropylene plant in Assam in September 2025 to strengthen local manufacturing and reduce dependence on imports.

**Bank Mitras**

Bank Mitras are banking correspondents appointed under financial inclusion schemes like PMJDY to extend banking services in rural and remote areas. They act as intermediaries between banks and customers, providing account opening, cash deposits, withdrawals, and loan facilitation. Bank Mitras often use handheld devices or biometric authentication to operate, enabling banking services beyond traditional branches and ATMs. Their presence has increased banking penetration in underserved regions. Many Bank Mitras are local residents, which helps build trust within communities. Challenges include limited digital literacy and infrastructure, but they remain critical in bridging the urban-rural banking gap in India.

## WHY IN NEWS?

Bank Mitras are brought into light as key agents in expanding PMJDYs reach to rural areas, enabling banking services beyond branches and ATMs, and supporting millions of new account holders.

**Certificates of Deposit (CDs)**

Certificates of Deposit are short-term debt instruments issued by banks to raise funds. They have fixed maturity periods ranging from 7 days to one year and offer higher interest rates than savings accounts. CDs are negotiable and can be traded in secondary markets, enhancing liquidity. They are unsecured, relying on the issuing bank's creditworthiness. The Reserve Bank of India regulates their issuance and trading. CDs are popular among mutual funds and institutional investors for short-term investment due to their relatively low risk and predictable returns. The decline in CD issuance often signals shifts in banking liquidity and credit demand.



## WHY IN NEWS?

CD issuance has sharply declined by 84% in the June quarter, prompting mutual funds to seek alternative money market instruments like treasury bills and commercial papers to manage liquidity.

**Compensation Cess Fund**

The **Compensation Cess Fund** was created under the GST regime to compensate states for revenue losses due to GST implementation. It functioned for a fixed period of five years starting from July 2017. During the COVID-19 pandemic, the fund was depleted as state revenues fell sharply. To manage this, the central government provided **interest-free long-term loans** to states. The cess was levied on specific goods like tobacco, coal, and luxury vehicles. The fund is expected to be withdrawn after the five-year timeline, marking shift in intergovernmental fiscal relations in India.

## WHY IN NEWS?

The compensation cess fund period ended recently, coinciding with GST rate rationalization and the withdrawal of the cess, impacting state revenue mechanisms.

**Compensation Cess on Tobacco**

Compensation cess is an additional tax levied on sin goods like tobacco products to compensate states for revenue losses due to GST implementation. Tobacco items such as pan masala, gutka, cigarettes, and bidi currently attract a GST rate of 28% plus this compensation cess. The cess revenue helps states offset GST-related fiscal shortfalls. The government plans to move tobacco products to a 40% GST slab only after repaying loans taken to fund compensation. This cess system ensures steady state revenues despite fluctuating consumption of sin goods.

## WHY IN NEWS?

Tobacco products remain under 28% GST plus compensation cess until government loans are repaid; thereafter, they will move to a 40% special rate slab.

**Digital Public Infrastructure (DPI)**

Indias **Digital Public Infrastructure (DPI)** is a government-backed digital ecosystem enabling interoperable platforms for payments, identity verification, and data exchange. Adopted by over 20 countries, it offers an alternative to dominant US and Chinese technology ecosystems. DPI includes systems like UPI (Unified Payments Interface) and Aadhaar-based identity services, facilitating financial inclusion and efficient public service delivery. It supports cross-border digital corridors linking Asia and Africa. DPI emphasizes open standards, privacy, and scalability, making it a model for digital sovereignty. The system has also been linked to exports of digital services and is considered a strategic asset in Indias geopolitical positioning.

## WHY IN NEWS?

DPIs expansion and exportation into Asia and Africa show Indias growing influence in digital standards and cross-border payment systems in 2025.

**External Commercial Borrowings (ECB)**

External Commercial Borrowings are loans taken by Indian companies from non-resident



lenders in foreign currency. ECBs are used to finance infrastructure, expansion, and other corporate needs. They often have lower interest rates than domestic loans but expose borrowers to currency risk. In 2024-25, India saw a net inflow of \$15.8 billion through ECBs, a sharp rise from previous years that recorded outflows or minimal inflows. ECBs form important part of Indias foreign capital inflows, balancing the reduction in other foreign investments like FPI and FDI.

#### WHY IN NEWS?

ECBs have increased in 2024-25, offsetting declines in other foreign capital inflows, denoting shifts in Indias external financing sources.

### **Female Labour Force Participation Rate (FLFPR)**

The **Female Labour Force Participation Rate (FLFPR)** measures the percentage of women actively engaged in the workforce. In India, it stands at 41.7% as of 2025, but only **18%** of these women are in formal employment. The FLFPR is a critical indicator reflecting economic inclusion and gender equality. Despite improvements, Indias FLFPR remains low compared to global averages. The rate varies widely by region, education, and social factors. It influences policy decisions related to employment, education, and social welfare. Tracking FLFPR helps identify barriers to womens employment and guides targeted interventions for economic empowerment.

#### WHY IN NEWS?

The FLFPR has been brought into light in discussions on Indias gender gap in workforce participation, emphasizing the need for gender-disaggregated data to improve womens formal employment and economic contribution.

### **Financial Fraud Risk Indicator (FRI)**

The **Financial Fraud Risk Indicator (FRI)** is a multi-dimensional risk classification system for mobile numbers based on their association with financial fraud. It categorizes numbers into medium, high, or very high risk using data from telecom and financial institutions, law enforcement agencies, and platforms like Sanchar Saathi. FRI helps financial institutions implement risk checks during digital transactions, preventing fraud. It is generated using AI and big data analytics, integrating inputs from various sources to provide early warning signals about potentially fraudulent mobile numbers. FRI data is shared in real-time between DoT and FIU-IND to enhance fraud detection and prevention.

#### WHY IN NEWS?

FRI data sharing was formalized in a new MoU between DoTs Digital Intelligence Unit and FIU-IND to strengthen Indias fight against telecom-related financial fraud and cyber-crimes.

### **GDP Deflator**

The **GDP deflator** is an economic metric that measures price changes across all goods and services included in GDP, calculated as a weighted average of retail and wholesale price levels. Unlike the Consumer Price Index (CPI), it covers a broader range of goods and services produced domestically. A low GDP deflator indicates minimal inflation or even



deflation in the economy. Recently, Indias GDP deflator was unusually low at **0.9%**, one of the lowest outside the Covid years, which statistically boosted real GDP growth by inflating output figures without corresponding price rises.

#### WHY IN NEWS?

Indias low GDP deflator in Q1 2025-26 contributed to an inflated real GDP growth figure of 7.8%, affecting interpretations of economic strength amid tariff and inflation uncertainties.

### Global Capability Centres (GCCs)

Global Capability Centres are in-house units of multinational companies located in countries like India, performing services such as R&D, design, and back-office operations. India hosts about **1,600 GCCs**, contributing nearly 40% of the country's services exports. They employ a large portion of India's engineering and science graduates, focusing on tasks that multinational firms prefer to keep in-house rather than outsource. GCCs often handle functions like inventory, supply chain, and technology support. Despite growth, most GCCs lack **intellectual property (IP) creation** or senior technology leadership presence, limiting their strategic role within parent companies.

#### WHY IN NEWS?

GCCs in India are expanding rapidly, raising concerns about their impact on domestic IT firms and the quality of jobs created, amid government efforts to promote India as a destination for advanced tech functions.

### Government Final Consumption Expenditure (GFCE)

Government Final Consumption Expenditure (GFCE) includes government spending on goods and services consumed for public benefit. It excludes investments but covers salaries, defense, and public services. In Indias Q1 FY 2025-26, GFCE grew by **9.7% nominally**, more than doubling the previous years rate. This rise contributed substantially to GDP growth, indicating that public consumption, rather than private demand, was a major growth driver. The increase contrasted with more modest private consumption growth, denoting the governments role in sustaining economic momentum.

#### WHY IN NEWS?

Indias strong Q1 FY 2025-26 GDP growth was partly driven by a sharp rise in government consumption expenditure, emphasizing the public sectors influence on economic activity.

### Green Asset-Backed Securities (ABS)

Green Asset-Backed Securities (ABS) are debt instruments where payments are backed by a pool of green assets, such as renewable energy projects or energy-efficient infrastructure. These securities provide investors exposure to environmentally sustainable projects while offering predictable cash flows. Green ABS differ from traditional ABS by adhering to environmental standards and certification processes. They help channel private capital into climate-friendly sectors by securitizing loans or receivables linked to green initiatives. The market for green ABS has grown steadily since the early 2020s, driven by increasing demand for sustainable investment products and regulatory



encouragement globally.

#### WHY IN NEWS?

Green ABS are part of the diverse debt instruments used in India and globally to raise sustainable/green finance, contributing to climate action funding efforts brought into light in recent financial disclosures.

### **Gross Refining Margins (GRMs)**

Gross Refining Margins (GRMs) represent the difference between the cost of crude oil and the price of refined petroleum products. GRMs are a key profitability metric for refineries. Indias GRMs have remained stable despite geopolitical tensions and sanctions affecting global oil markets. Indian refiners process a diverse basket of crude oils, including Russian crude, under compliant and transparent channels. India has been the worlds fourth-largest exporter of petroleum products for decades, maintaining consistent refining margins without profiteering. GRMs influence decisions on crude sourcing, refinery operations, and export volumes, impacting Indias energy security and economic stability.

#### WHY IN NEWS?

GRMs are mentioned to counter allegations of profiteering from Russian crude purchases, emphasizing Indias stable refining margins and compliance with international sanctions.

### **Gross State Domestic Product (GSDP)**

**Gross State Domestic Product (GSDP)** measures the economic output of a state, representing the total value of all finished goods and services produced within a states geographical boundaries in a given period. It is analogous to GDP at the national level but calculated for individual states. GSDP is used to assess the economic health and growth of states, influencing fiscal policy and debt sustainability analysis. It helps compare states economic performance and is crucial for fiscal federalism in India, including allocation of resources and debt-to-GSDP ratio calculations.

#### WHY IN NEWS?

GSDP is used as the denominator in the report's debt-to-GSDP ratio, showing how states debt levels relate to their economic output.

### **Hub-and-Spoke Model in Banking**

The **hub-and-spoke model** in banking organizes branches and back offices as hubs, while business correspondents, financial literacy, and credit counseling centers (FLCCs) act as spokes. This decentralized model enhances outreach by connecting rural and semi-urban account holders to banking services. It facilitates account reactivation, financial education, and grievance redressal. The model supports campaigns to revive dormant accounts by leveraging local intermediaries and institutions like NGOs and lead banks. It is especially useful in regions with limited branch access, improving operational efficiency and customer engagement in financial inclusion initiatives.

#### WHY IN NEWS?

The RBI recommends using the hub-and-spoke model to reactivate dormant PMJDY accounts and improve financial literacy during the July-September 2025 gram panchayat camps.



## India Semiconductor Mission

The **India Semiconductor Mission (ISM)** was launched in 2021 with an initial allocation of ₹76,000 crore to boost India's semiconductor ecosystem. It aims to develop an end-to-end semiconductor value chain, including design, fabrication, and packaging. ISM supports projects across multiple states, with **ten projects worth ₹1.6 lakh crore approved**. The mission promotes partnerships between Indian companies and global semiconductor firms. It focuses on financial incentives, streamlined approvals, and semiconductor-specific policies. ISM's goal is to reduce dependency on imports and make India a competitive chip producer with costs 15-30% lower than global prices.

### WHY IN NEWS?

India Semiconductor Mission reached a decisive phase with ten projects approved and the first made-in-India chip revealed, signaling progress in domestic semiconductor manufacturing.

## International Financial Services Centre (IFSC) Banking Units

International Financial Services Centre (IFSC) Banking Units (IBUs) are specialized banking branches located within designated IFSCs in India, such as the Gujarat International Finance Tec-City (GIFT City). IBUs conduct banking and financial services for non-resident clients and foreign entities, facilitating cross-border transactions and offshore banking. They operate under relaxed regulatory norms compared to domestic branches and can trade in foreign currencies and derivatives like NDDCs. IFSCs aim to attract global financial services and enhance India's position as an international financial hub by offering tax benefits and streamlined compliance for IBUs.

### WHY IN NEWS?

IBUs of authorized Category-I banks have been permitted to transact in non-deliverable derivative contracts involving the rupee, a regulatory framework now extended to standalone primary dealers by the RBI.

## Marginal Propensity to Consume (MPC)

The **marginal propensity to consume (MPC)** measures the proportion of additional income that a household spends on consumption rather than saving. It varies across income groups, with lower-income households typically having a higher MPC. In fiscal policy, MPC is crucial for determining the effectiveness of tax cuts or transfers in stimulating demand. If income tax or GST benefits accrue more to higher-income groups, the overall MPC may be lower, leading to less consumption growth and more savings or investment in financial markets. This influences the multiplier effect of fiscal stimulus on the economy.

### WHY IN NEWS?

India's recent tax concessions and GST reforms aim to boost consumption, but the impact depends on the MPC of beneficiaries, which may moderate the stimulus effect on demand growth.



## Maritime Development Fund

The **Maritime Development Fund** is a \$3 billion government-backed financial pool designed to boost India's maritime sector. About 45% of the fund is allocated specifically for shipbuilding and ship repair projects, while 20% targets building Indian tonnage. The fund supports infrastructure upgrades, technological modernization, and capacity expansion to position India as a global maritime hub. It also facilitates loans, subsidies, and grants for private and public sector maritime enterprises. The fund is a key part of the Maritime India Vision, aimed at increasing the sector's contribution to national GDP and global competitiveness by 2047.

### WHY IN NEWS?

The fund's allocation and strategic importance were emphasized by government officials during INMEX SMM India 2025, reflecting India's commitment to maritime sector growth.

## Maritime Investment Fund

The **Maritime Investment Fund** is a Rs.20,000 crore component of the Maritime Development Fund, with 49% government participation. It provides long-term financing to shipbuilding and maritime infrastructure projects, enhancing project viability and attracting private investment. The fund supports greenfield and brownfield shipyard development, infrastructure expansion, and technological upgrades. It aims to reduce dependency on short-term loans, stabilize cash flows, and promote sustainable growth in the maritime sector. The fund is structured to encourage public-private partnerships and risk-sharing mechanisms, encouraging innovation and competitiveness in India's shipbuilding industry.

### WHY IN NEWS?

The Maritime Investment Fund was approved as part of the comprehensive Rs.69,725 crore package to strengthen India's maritime sector, providing critical long-term financing for infrastructure and capacity expansion.

## Midwestern States (US Corn Belt)

The US Corn Belt is a region in the Midwest known for intensive corn production, including Iowa, Illinois, Nebraska, Minnesota, Indiana, South Dakota, North Dakota, Kansas, Missouri, Ohio, and Wisconsin. It accounts for the majority of US corn output, benefiting from fertile soil, favorable climate, and advanced farming technology. The Corn Belt's agriculture is highly mechanized and relies heavily on genetically modified seeds. This region supplies both domestic consumption and exports, making it crucial to the US economy. Corn grown here is used for food, livestock feed, ethanol fuel, and industrial products. The Corn Belt's productivity influences global corn markets and trade policies.

### WHY IN NEWS?

US corn exports from Midwestern states face challenges due to India's import restrictions on GM corn and high tariffs.

## Mines Sector Projects

India's Mines sector includes the extraction of minerals like coal, iron ore, bauxite, and



limestone, which are crucial for industrial growth. Recent projects focus on increasing production efficiency, mechanization, and sustainable mining practices. The government has introduced the **Mineral Auction Policy** to promote transparency and private sector participation. Mining leases are now granted through e-auctions, reducing delays and corruption. Environmental clearances and land acquisition remain critical challenges. Advanced technologies such as remote sensing and GIS are increasingly used for exploration and monitoring. The sector contributes to GDP and employment in mineral-rich states.

#### WHY IN NEWS?

Mines sector projects were reviewed at the PRAGATI meeting due to their importance in infrastructure development and their contribution to the economy.

#### **Minimum Support Price (MSP) for Cotton**

The Minimum Support Price (MSP) for cotton is a government-set price to protect farmers from price fluctuations and ensure fair income. It is fixed annually based on production costs, market trends, and demand-supply factors. MSP for cotton procurement by CCI is typically announced before the sowing season. The MSP applies to a standard cotton bale weighing **170 kg** in India, differing from the candy unit used in trade. MSP influences cropping patterns, with farmers often choosing cotton based on MSP attractiveness compared to other crops. It is a critical tool in agricultural policy for crop price stabilization.

#### WHY IN NEWS?

CCI procured about 1 crore bales of cotton at MSP for the 2024-25 season, supporting farmers amid fluctuating domestic prices and rising imports.

#### **Narasimham Committee**

The Narasimham Committee, chaired by M. Narasimham in the early 1990s, was very important in reforming India's banking sector. It recommended operational autonomy for the Reserve Bank of India, strengthening prudential norms, reducing non-performing assets, and encouraging market-based reforms. The committee's suggestions led to the adoption of international banking standards and improved financial discipline. It emphasized deregulation of interest rates and recapitalization of banks. Its recommendations laid the foundation for India's modern banking reforms and helped integrate the Indian financial system with global markets.

#### WHY IN NEWS?

The committee is referenced for its role in pushing RBI autonomy and market-based reforms that shaped India's financial regulatory framework.

#### **National Co-operative Exports Limited (NCEL)**

National Co-operative Exports Limited (**NCEL**) is a government-backed umbrella organization focused on promoting exports through cooperative societies across India. It serves as a platform to consolidate the export potential of cooperatives dealing in agricultural and processed food products. NCEL facilitates market access, quality



compliance, and capacity building for its member cooperatives. It plays important role in integrating rural producers with international markets, aiming to enhance value realization and improve farmer incomes. NCEL operates under the Ministry of Cooperation and coordinates with other export promotion bodies to streamline export processes and infrastructure support.

#### WHY IN NEWS?

NCEL signed an MoU with APEDA to enhance cooperative-led agricultural exports, aiming to strengthen India's global market presence and improve economic benefits for farmer-members.

### **National Critical Minerals Mission**

The **National Critical Minerals Mission** is an Government of India initiative launched to reduce dependence on imports of rare earths and other critical minerals. It aims to develop domestic production, processing, and value chains for minerals essential to advanced manufacturing and clean energy technologies. The ₹34,000-crore mission includes partnerships with Japan and South Korea to improve technology and supply security. It focuses on exploration, mining, refining, and recycling of critical minerals. The mission also promotes innovation in extraction and processing methods, targeting increase in India's contribution to global rare earth output, currently under 1%.

#### WHY IN NEWS?

India's National Critical Minerals Mission is spotlighted as part of efforts to close the rare earth supply gap and reduce strategic vulnerabilities exposed by China's export controls in 2025.

### **NBFC-MFIs**

**NBFC-MFIs** are Non-Banking Financial Companies that specialize in microfinance lending. Unlike banks, NBFC-MFIs are not allowed to accept deposits but provide collateral-free loans to low-income households. They operate primarily in semi-urban and rural areas and are regulated by the Reserve Bank of India under specific guidelines. NBFC-MFIs play a vital role in financial inclusion by supporting nearly eight crore households. They face challenges such as funding constraints, regulatory compliance, and credit risk management. Their portfolios often include non-qualifying assets, which require careful handling to maintain financial health.

#### WHY IN NEWS?

NBFC-MFIs are struggling with reduced funding from banks and stricter credit ratings, impacting their ability to sustain lending amid recent sector challenges.

### **North American Free Trade Agreement (NAFTA) Corn Impact**

NAFTA, implemented in 1994, created a free trade zone between the U.S., Canada, and Mexico. Following NAFTA, Mexico increased imports of cheap U.S. corn, which was often genetically modified. This influx led to the displacement of over one million Mexican corn farmers, who lost their livelihoods and shifted to factory work in the U.S. Despite controversy, Mexico continues to import around 25 million tonnes of U.S. corn annually.



The agreement altered Mexico's agricultural landscape and food sovereignty, raising concerns about dependency on U.S. agricultural imports and the socio-economic impact on rural communities.

#### WHY IN NEWS?

India references Mexico's experience as a cautionary tale in resisting U.S. corn imports amid ongoing trade negotiations.

### OCP Group

The **OCP Group** is a Moroccan state-owned phosphate mining company and the world's largest exporter of phosphate rock, phosphoric acid, and phosphate-based fertilizers. It controls about **70% of the world's phosphate reserves**. OCP has strategic partnerships worldwide, including equity stakes in Indian fertilizer companies like Paradeep Phosphates. The group plays a critical role in global agriculture by supplying raw materials essential for fertilizer production. OCP is heavily supported by the Moroccan government and aims to expand its footprint through joint ventures and international collaborations, focusing on sustainability and innovation in phosphate mining and fertilizer production.

#### WHY IN NEWS?

OCP Group is mentioned due to its strategic role in India-Morocco fertilizer partnerships, critical for India's food security and fertilizer supply diversification.

### One-Time Settlement (OTS) Scheme

One-Time Settlement (OTS) schemes are financial arrangements allowing defaulting borrowers to settle their dues with lenders by paying a lump sum less than the total outstanding amount. Banks impose specific eligibility criteria, including upfront payments, to qualify for OTS. The scheme aims to recover non-performing assets efficiently. The **State Bank of India's 2020 OTS scheme** explicitly lists ineligible cases under clause 2.1, excluding certain defaulters. Borrowers must meet all conditions, including a mandatory upfront payment, to have their OTS applications processed. Courts cannot compel banks to grant OTS benefits if eligibility criteria are unmet.

#### WHY IN NEWS?

The Supreme Court set aside a High Court order directing SBI to reconsider Tanya Energys OTS proposal, emphasizing strict adherence to eligibility and upfront payment requirements under the 2020 OTS scheme.

### OPEC+ Supply Tranche

The **1.65 million barrels per day tranche** is volume of oil production that OPEC+ had initially withheld until the end of 2026 but is now being partially restored starting October 2025. This tranche is being released in monthly increments, totaling 137,000 barrels a day initially. The phased return aims to balance market stability with reclaiming market share. OPEC+ members coordinate production levels to influence global oil prices and supply. The tranche's release schedule depends on market conditions, reflecting a cautious approach to avoid price crashes or inventory gluts in key consuming regions.

#### WHY IN NEWS?

OPEC+ decided to accelerate the phased return of a previously withheld 1.65 million



barrels per day tranche starting October 2025, signaling cautious optimism about the global oil market and supply-demand balance.

### Operation Twist

Operation Twist is a monetary policy tool where a central bank simultaneously buys long-term government bonds and sells short-term bonds to influence the yield curve. It aims to lower long-term interest rates without changing the overall money supply. The term originated in the U.S. in 1961 when the Federal Reserve sought to stimulate the economy by “twisting” the yield curve. The Reserve Bank of India (RBI) has considered Operation Twist to manage bond yields and borrowing costs. It helps reduce long-end yields, stabilizing the bond market while maintaining liquidity conditions.

#### WHY IN NEWS?

The RBI may use Operation Twist to manage rising long-term bond yields amid inflation concerns and higher government borrowing in 2025.

### Optiemus Electronics

Optiemus Electronics is an Indian telecommunications and manufacturing company with nearly 30 years of industry experience. It specializes in mobile devices and electronics components, operating under the broader Optiemus Group. The company collaborates internationally, notably with Corning Incorporated, USA, to produce high-quality tempered glass for mobile devices. Optiemus has pioneered India’s first indigenous tempered glass manufacturing facility in Noida, aiming to reduce import dependency and boost local production. The company’s phased expansion plans include scaling production capacity from 25 million to 200 million units annually, creating thousands of direct jobs and supporting the Make in India initiative.

#### WHY IN NEWS?

Optiemus Electronics inaugurated India’s first tempered glass manufacturing facility for mobile devices in Noida, marking a step in domestic electronics manufacturing and import substitution.

### Permanent Retirement Account Number (PRAN)

The **Permanent Retirement Account Number (PRAN)** is a unique identifier assigned to subscribers of the National Pension System (NPS) and Unified Pension Scheme (UPS). It functions as a permanent account for managing pension contributions and accumulations throughout an employee’s career. Under NPS, contributions are 10% by the employee and 14% by the employer of basic pay plus dearness allowance, while under UPS, both employee and employer contribute 10% each. PRAN facilitates portability of pension accounts across jobs and is required for all government employees under these schemes.

#### WHY IN NEWS?

PRAN is central to managing contributions and pension benefits as employees decide whether to opt for UPS or continue with NPS before the September 30, 2025 deadline.

### Perpetual Bonds

Perpetual Bonds are fixed-income securities with **no maturity date**. They pay interest



indefinitely and can be redeemed only at the issuers option, typically after a specified period. These bonds often have a **step-up feature**, increasing the coupon rate if not called after a set time, incentivizing redemption. They combine features of debt and equity, classified as Tier-I capital for regulatory purposes in banks and financial institutions. Investors receive stable income, but the principal is at risk if the issuer defaults. Perpetual bonds are used by companies to strengthen capital without diluting equity.

#### WHY IN NEWS?

IREDA issued perpetual bonds with a 7.70% annual coupon and a 50 basis points step-up after 10 years to boost its Tier-I capital for renewable energy financing.

### **Pink Tax**

The **Pink Tax** refers to the price difference where products or services marketed to women cost more than similar ones for men. It is not an actual tax but a pricing phenomenon affecting items like personal care, clothing, toys, and services such as haircuts and dry cleaning. Originating in California in 1994, studies show women pay 7-13% more on average for comparable goods. The Pink Tax disproportionately impacts women economically, especially where income gaps exist. It is a global issue, with the UN urging member states to eliminate gender-based price discrimination since 2017.

#### WHY IN NEWS?

The Pink Tax remains relevant due to ongoing consumer advocacy and rulings like Indias NCDRC mandating fair pricing, denoting persistent gender-based price discrimination in products and services worldwide.

### **PM MITRA Park**

The Pradhan Mantri Mega Integrated Textile Region and Apparel (PM MITRA) Park is an initiative to create large-scale textile manufacturing hubs across seven state of Indias. The Dhar district park spans **2,158 acres** and will feature 81 plug-and-play units, a **20 Mega Liters per Day (MLD) effluent treatment plant**, and a **10 Megavolt-amperes (MVA) solar power plant**. It aims to provide continuous water and electricity supply, modern roads, and housing/social facilities for workers, especially women, making it an ideal industrial township. It supports cotton producers and has attracted investment proposals exceeding **Rs 23,146 crore**.

#### WHY IN NEWS?

Prime Minister Narendra Modi laid the foundation stone of the first PM MITRA Park in Dhar, Madhya Pradesh, marking the launch of this flagship textile infrastructure project.

### **Price Stabilisation Fund (PSF)**

The **Price Stabilisation Fund (PSF)** is a government-managed financial mechanism designed to stabilize prices of essential commodities like onions. It supports the procurement and storage of surplus produce to prevent sharp price fluctuations. The PSF finances the building of buffer stocks during surplus production and subsidizes their release during shortages to protect both farmers and consumers. It is funded through



government allocations and contributions from stakeholders. The fund plays a critical role in India's agricultural price policy but faces challenges in timely procurement, storage capacity, and coordination with market dynamics, often impacting its effectiveness in price regulation.

#### WHY IN NEWS?

The PSF is central to the ongoing onion price crisis in Maharashtra, where buffer stock releases by government agencies have lowered market prices, worsening farmers' distress during a period of surplus production and price decline.

### **Primary Agricultural Credit Societies (PACS)**

Primary Agricultural Credit Societies (PACS) are grassroots cooperative institutions in India that provide credit and other financial services to farmers and rural communities. Established under the Cooperative Societies Act, they serve as the first tier in the rural credit system, linking local farmers to formal banking channels. PACS often handle input supply, storage, and marketing activities besides credit. They play a critical role in rural economic development by enabling collective bargaining and reducing dependency on informal moneylenders. Despite their importance, PACS face challenges like political interference, limited autonomy, and inadequate modernization, which restrict their ability to function as true economic engines.

#### WHY IN NEWS?

The text discusses transforming PACS from mere scheme implementers into economic engines under Bihar's Cooperative Economic Framework to boost rural employment and value addition.

### **Private Final Consumption Expenditure (PFCE)**

PFCE measures the total value of goods and services consumed by households and Non-Profit Institutions Serving Households (NPISHs) using the commodity flow method. It includes free or subsidised services like education, healthcare, and meals provided by employers, NGOs, or government schemes. PFCE relies on market prices updated from administrative sources such as GST and tax filings. It captures economic value rather than actual household spending, explaining its higher estimates compared to survey data. NPISHs' consumption is indirectly covered, and outdated ratios like trade margins and wastage rates affect accuracy. Periodic revisions and surveys are recommended for better precision.

#### WHY IN NEWS?

PFCE is central to India's GDP calculation, but its estimates diverge from household survey data, raising concerns over consumption measurement and policy targeting in 2025.

### **Producer Price Index (PPI)**

A Producer Price Index (PPI) measures average changes in selling prices received by domestic producers for their output. It includes input and output PPIs reflecting prices of intermediate consumption and final goods. India currently lacks a formal PPI and uses the Wholesale Price Index (WPI) as a proxy, which is compiled at basic prices and closely



resembles an output PPI. The absence of a dedicated PPI limits precise deflation of intermediate consumption and output in GDP estimation. Establishing a PPI would improve accuracy in measuring real GVA by better capturing sector-specific price changes.

#### WHY IN NEWS?

Discussions on improving India's GDP estimation show the need for a dedicated Producer Price Index to better deflate intermediate inputs and outputs, supplementing the current reliance on WPI.

### Production Linked Incentive (PLI) Scheme

The **Production Linked Incentive (PLI) scheme** is an Government of India initiative aimed at boosting domestic manufacturing and reducing import dependence. It mandates a minimum of 50% local value addition for automobile and auto component manufacturers to qualify for financial incentives. The scheme targets sectors critical for economic growth and technology advancement. PLI incentivizes companies through direct financial support based on incremental production. Introduced in 2020, it covers multiple sectors including electronics, pharmaceuticals, and automobiles. The scheme encourages supply chain localization and innovation. Non-compliance with local value addition requirements results in disqualification from incentives, impacting competitiveness and cost structures.

#### WHY IN NEWS?

PLI scheme eligibility is threatened as Indian automakers import entire components from China and Vietnam due to rare earth magnet shortages, reducing domestic value addition below the 50% mandated threshold.

### Rabi Onions

Rabi onions are a variety cultivated during the winter cropping season in India, typically sown from October to December and harvested between February and April. They are known for their longer shelf life compared to Kharif onions but are susceptible to quality deterioration if stored improperly. Maharashtra is a major producer of Rabi onions. These onions usually fetch higher prices in the market due to their availability in the off-season. However, storage challenges, including moisture and temperature control, affect their quality and market value. Rabi onion production is critical for balancing supply-demand cycles in the Indian onion market.

#### WHY IN NEWS?

Farmers are struggling to sell stored Rabi onions as quality deterioration and buffer stock releases have driven prices below production costs, prompting widespread protests in Maharashtra.

### Reciprocal Tariffs

Reciprocal tariffs refer to import duties imposed by one country in response to tariffs or trade barriers set by another country, aiming to create a balance in trade relations. Recently, the US imposed a **50% additional tariff** on Indian imports, including a controversial 25% tariff on Russian crude oil imported by India, despite China and Europe



not facing similar duties. These tariffs are used as a tool to exert economic pressure and negotiate better trade terms, but can trigger retaliatory measures and disrupt global supply chains. They often impact multiple layers of producers and exporters.

#### WHY IN NEWS?

The US announced reciprocal tariffs against India in 2025, affecting India's largest export market and prompting urgent policy responses from the Government of India.

### **Sarfaesi Act**

The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (Sarfaesi Act), empowers banks and financial institutions in India to recover non-performing assets without court intervention. It allows lenders to auction secured assets after issuing a demand notice to defaulters. The Act is a key tool in managing bad loans and enforcing security interests. The process includes issuing a 60-day notice before taking possession of the collateral. It facilitates quicker recovery, reducing the burden on courts. The Act excludes unsecured loans and applies only to secured creditors.

#### WHY IN NEWS?

Tanya Energy faced proceedings under the Sarfaesi Act due to defaulting on loan repayment, enabling SBI to enforce security interest after the Supreme Court's ruling.

### **Scheduled Commercial Banks (SCBs)**

Scheduled Commercial Banks (SCBs) in India are banks included in the Second Schedule of the Reserve Bank of India Act, 1934. They must maintain a minimum paid-up capital and reserves and comply with RBI regulations. SCBs include public sector banks, private sector banks, foreign banks, and regional rural banks. They are authorized to operate current and savings accounts, accept deposits, and provide loans. SCBs play a critical role in financial inclusion and economic development. Their operations are closely monitored by RBI to ensure financial stability. The distinction from non-scheduled banks lies in their eligibility for RBI refinancing and membership in clearinghouses.

#### WHY IN NEWS?

SCBs credit and deposit growth in rural India over 25 years lags behind urban and metropolitan areas, denoting challenges in banking penetration in rural sectors according to RBI data from 2025.

### **Sin Goods GST**

Sin goods refer to products considered harmful or socially undesirable, such as tobacco, alcohol, and luxury items. Under GST, these goods attract higher tax rates to discourage consumption and generate revenue. The GST rate on sin goods is proposed to increase to **40%**, higher than the standard highest bracket of 28%. This differential taxation aims to balance public health concerns with revenue needs. The sin goods category under GST includes luxury cars, tobacco products, and aerated drinks. The higher rate also serves as a compensatory mechanism for states losing revenue from other sectors.

#### WHY IN NEWS?

The GST reform proposal includes moving sin goods to a 40% tax bracket, affecting pricing



and consumption patterns.

### **Special Purpose Vehicles (SPVs)**

Special Purpose Vehicles (SPVs) are legal entities created for specific investment projects to isolate financial risk and optimize tax and regulatory conditions. Indian oil companies have used SPVs registered in overseas financial hubs like Singapore to invest in Russian oil and gas assets. SPVs facilitate foreign direct investment by separating the parent company's liabilities and streamlining cross-border transactions. However, these vehicles complicate dividend repatriation due to jurisdictional issues and international sanctions. SPVs often have limited operational functions and exist solely to hold assets or manage investments, making them vulnerable to geopolitical disruptions and legal complexities.

#### WHY IN NEWS?

Indian companies use of SPVs in Singapore to hold stakes in Russian oil projects complicates the repatriation of dividends, as payments involve multiple jurisdictions affected by Western sanctions.

### **Standing Deposit Facility (SDF)**

The Standing Deposit Facility (SDF) is an RBI monetary policy tool introduced in 2018 to absorb excess liquidity from the banking system without collateral. It allows banks to park surplus funds with the RBI at a fixed interest rate, currently set at 5.25%. Unlike the Liquidity Adjustment Facility (LAF), SDF does not require securities as collateral, making it a flexible liquidity management instrument. SDF helps maintain short-term interest rates and supports monetary policy transmission. It complements other tools like the Marginal Standing Facility (MSF) and repo rate in managing liquidity and inflation.

#### WHY IN NEWS?

The RBI's current policy rates include the SDF at 5.25%, playing a role in liquidity management amid inflation and bond market fluctuations in 2025.

### **STEM International Students**

International students in STEM fields contribute over **\$40 billion annually** to the U.S. economy. More than half of these students pursue science, technology, engineering, and mathematics degrees. These students represent a highly skilled, global intellectual elite who invest years and finances in U.S. education. The \$100,000 visa fee signals reduced post-graduation work opportunities in the U.S., potentially deterring top talent. Countries like Canada, Australia, and the UK have developed attractive immigration pathways for these graduates. The U.S.'s increased barriers risk losing future innovators to competitor nations amid rising global competition for technological talent.

#### WHY IN NEWS?

The visa fee policy threatens the retention of international STEM graduates in the U.S., impacting the country's future innovation capacity and economic contributions.

### **UN Conference on Trade and Development (UNCTAD)**

The **UN Conference on Trade and Development (UNCTAD)** was established in 1964 as a permanent intergovernmental body of the United Nations. It focuses on trade,



investment, and development issues, especially for developing countries. UNCTAD produces reports analyzing global trade trends, investment flows, and policy impacts. It promotes a rules-based international trading system and provides technical assistance to developing nations. UNCTAD has brought into light the weakening of the global trading system due to rising protectionism and tariffs, emphasizing the need for multilateral cooperation and bilateral negotiations to mitigate trade conflicts.

#### WHY IN NEWS?

UNCTAD has reported on the destabilization of global trade caused by U.S. tariffs and rising protectionism, underscoring challenges to the rules-based trading system.

### **Unified Logistics Interface Platform (ULIP)**

The **Unified Logistics Interface Platform (ULIP)** enables secure API integration across over 30 digital systems in Indias logistics sector. As of August 2025, it has facilitated more than 160 crore digital transactions. ULIP supports real-time data sharing among stakeholders, improving transparency and operational efficiency. It integrates customs, transport, warehousing, and freight systems, reducing paperwork and delays. ULIP is a key component of the National Logistics Policys digital infrastructure, promoting seamless interoperability. The platforms design supports scalability for future logistics innovations and compliance with international standards for data security and interoperability.

#### WHY IN NEWS?

ULIP is brought into light as a major achievement under the National Logistics Policys third anniversary, showcasing its role in digital integration and transaction facilitation in Indias logistics ecosystem.

### **US Secondary Sanctions on Iran**

US secondary sanctions target non-US entities conducting business with Iran, aiming to isolate Iran economically. These sanctions extend beyond direct US-Iran transactions, penalizing third-party countries and companies that engage with Irans energy, banking, and shipping sectors. They have impacted Iran's oil exports and foreign investments. Secondary sanctions deter international companies, including Indian firms, from engaging with Iran due to fear of US penalties. These sanctions complicate Iran-India trade relations, especially in energy. Despite waivers and negotiations, secondary sanctions remain a major barrier to full economic cooperation between Iran and India.

#### WHY IN NEWS?

US secondary sanctions continue to obstruct Iran-India economic ties in 2025, limiting trade and investment despite strong bilateral interest and ongoing diplomatic efforts.

### **US Treasury Bills (T-Bills)**

US Treasury Bills are short-term government debt securities with maturities of one year or less, issued by the US Department of the Treasury to finance government spending. They are sold at a discount and mature at face value, with the difference representing interest earned. T-Bills are considered one of the safest investments due to the US government's creditworthiness. Foreign governments and institutions hold large amounts as part of



their foreign exchange reserves. The largest holders include Japan, the UK, China, and India. Holdings fluctuate based on geopolitical and economic factors affecting the US dollar's valuation and yield changes.

#### WHY IN NEWS?

India's holdings of US T-Bills fell from \$242 billion in June 2024 to \$227 billion in June 2025 as part of a global trend to diversify foreign exchange reserves away from the US dollar.

### Washington Consensus

The **Washington Consensus** is a set of 10 economic policy prescriptions considered the standard reform package promoted for crisis-wracked developing countries by Washington, D.C. institutions like the IMF, World Bank, and US Treasury during the 1980s and 1990s. It emphasizes fiscal discipline, tax reform, liberalization of trade and investment, privatization, deregulation, and secure property rights. The term was coined by economist **John Williamson** in 1989. Its application often led to austerity measures in debtor nations. The consensus has been criticized for ignoring social impacts and was challenged after the 2008 financial crisis when governments abandoned strict fiscal discipline.

#### WHY IN NEWS?

The Washington Consensus is referenced as its principles were undermined by Western governments during the 2008-09 financial crisis, leading to a shift towards state intervention and Keynesian economics.

### Ways and Means Advances (WMA)

**Ways and Means Advances (WMA)** are short-term loans provided by the Reserve Bank of India (RBI) to the central and state governments to bridge temporary mismatches in cash flow. There are two types – normal WMA and special WMA, the latter backed by government securities. The limit for WMA is fixed annually by RBI and varies for each state based on their fiscal performance. Interest on WMA is charged at the bank rate, and if the government exceeds the limit, it must pay a penal interest. WMAs help maintain smooth government functioning without disrupting market liquidity.

#### WHY IN NEWS?

WMA is mentioned as a key component of states public debt, denoting short-term borrowing used by states to manage cash flow amidst rising debt levels.

### White Goods Components

White goods refer to large household appliances like air conditioners and LED lights in this context. Components and sub-assemblies include compressors, condensers, printed circuit boards, and LED drivers. Many of these components were not manufactured in India in sufficient quantities before the PLI scheme. The scheme aims to develop the entire value chain domestically, reducing import dependency. Manufacturing these components locally helps in cost reduction, supply chain resilience, and technology development. The initiative supports both new applicants and existing manufacturers willing to expand investments in these components.



## WHY IN NEWS?

The PLI Scheme for white goods encourages production of AC and LED light components domestically, with a renewed application window announced in September 2025.

**Geography (Indian & Physical)****Barren Island Volcano**

Barren Island is **Indias only active volcano**, located in the Andaman and Nicobar Islands. It covers an area of 8.34 square kilometers and is uninhabited. The island lies at the junction of the **Indian and Burmese tectonic plates**, about 140 km from Port Blair. Its first recorded eruption was in **1787**, with subsequent eruptions in 1991, 2005, 2017, 2022, and recently in 2025. The eruptions are generally minor and volcanic activity is monitored due to its remote location and ecological significance. The island is a part of a volcanic arc in the northeastern Indian Ocean.

## WHY IN NEWS?

Minor volcanic eruptions occurred twice within eight days in September 2025 at Barren Island, renewing interest in Indias only active volcano in the Andaman and Nicobar Islands.

**Donyl Polo Airport**

Donyl Polo Airport is located in Itanagar, Arunachal Pradesh. It recently inaugurated a new terminal building spanning 4100 sq m, increasing its passenger handling capacity to 1 million annually and peak hour capacity to 800. The airport plays a key role in connecting Arunachal Pradesh with major cities like Delhi. It also features the UDAN Yatri café, a creche for toddlers, and the AVSAR shop, which promotes skilled artisans of the region by providing retail space within the terminal. The airport supports the governments vision of enhancing regional connectivity and economic integration through aviation.

## WHY IN NEWS?

The new terminal building at Donyl Polo Airport was inaugurated during the conference, marking upgrade in infrastructure and passenger services in Arunachal Pradesh.

**Farakka Barrage**

The **Farakka Barrage** is a dam on the Ganges River located in India, built to divert water into the Hooghly River to improve Kolkatas port navigation. Constructed in the 1970s, it has altered the river's natural flow, especially during dry seasons. The barrage has reduced water flow downstream into Bangladesh, increasing salinity in the soil and water. This has threatened the **Sundarbans**, the worlds largest mangrove forest, and impacted agriculture and fisheries in Bangladesh. It remains a contentious transboundary water management issue between India and Bangladesh.

## WHY IN NEWS?

The Farakka Barrages impact on the Ganges flow contributes to ecological damage and water scarcity in Bangladesh, exacerbating the rivers overall decline.

**Ghaggar-Hakra River System**

The **Ghaggar-Hakra river system** is a seasonal river flowing through India and Pakistan, often identified with the ancient Saraswati River mentioned in the Rig Veda. It supported



many Harappan civilization sites, with the largest concentration of settlements along its banks. The river is mostly dry but was once a major watercourse during the Bronze Age. Archaeological evidence suggests the river's drying contributed to the decline of the Harappan civilization. The Ghaggar-Hakra basin covers parts of Haryana, Punjab, Rajasthan, and Pakistan's Cholistan Desert, denoting its historical significance for early urban settlement in South Asia.

#### WHY IN NEWS?

The Ghaggar-Hakra river system is central to debates on the Harappan civilization's origins and its possible link to the Vedic Saraswati, a key point in the conference on deciphering the Harappan script in New Delhi.

### **Gobind Sagar Reservoir**

**Gobind Sagar Reservoir** is a large artificial lake created by the Bhakra Dam on the Sutlej River in Himachal Pradesh. It has a storage capacity of about 9.34 billion cubic meters (7.57 million acre-feet), making it one of the largest reservoirs in Asia. The reservoir supports irrigation, hydroelectric power generation, and flood control. It was named after the tenth Sikh Guru, Guru Gobind Singh. The reservoir's vast size influences regional water management and agriculture downstream. Its creation submerged several villages and altered local ecosystems. Gobind Sagar is also a popular site for recreational fishing and boating.

#### WHY IN NEWS?

Gobind Sagar reservoir was referenced in discussions about India's water storage capacity and hydro projects amid the suspension of the Indus Water Treaty and ongoing water management challenges.

### **Harsil Valley**

Harsil Valley is a high-altitude Himalayan valley located in Uttarakhand, along the Bhagirathi River. It is known for its **pristine natural beauty**, apple orchards, and as a gateway for treks to Gangotri Glacier. The valley's fragile ecology is vulnerable to landslides and mudslides due to steep slopes and unstable terrain. Unregulated construction, including hotels and housing on fragile slopes, has increased disaster risk. The region also holds cultural significance with ancient temples and is a part of the Char Dham pilgrimage circuit. The valley experiences heavy snowfall and intense monsoon rains, making it prone to natural calamities.

#### WHY IN NEWS?

A deadly mudslide in Harsil Valley in 2025 was triggered by construction on unstable terrain, causing loss of life and property damage amid heavy monsoon rains.

### **India-Myanmar-Thailand Trilateral Highway**

The India-Myanmar-Thailand Trilateral Highway is a 1,360-kilometer road project aimed at connecting Moreh in India to Mae Sot in Thailand via Myanmar. It is part of India's Act East policy to enhance regional connectivity and economic integration with Southeast Asia. The highway was envisioned to facilitate trade, tourism, and cultural exchange, reducing



transport time and costs. Construction began in the early 2010s but has faced delays due to political instability in Myanmar and infrastructure challenges. The highway intersects with ASEAN transport networks and is expected to boost India's strategic presence in the Indo-Pacific region once fully operational.

#### WHY IN NEWS?

The highway is referenced as a stalled corridor in the northeast, with trade routes disrupted by Myanmar's political situation and increased border security.

### Indira Point

**Indira Point** is the southernmost point of India, located on Great Nicobar Island. Formerly known as Pygmalion Point, it was renamed after Prime Minister Indira Gandhi following her visit in 1984. It lies approximately 145 km from Indonesia's Aceh Province, making it strategically important for maritime security. The point was severely affected by the 2004 Indian Ocean tsunami, which submerged parts of it and altered the coastline. Indira Point hosts a lighthouse and is a key location for monitoring shipping lanes in the Indian Ocean. It is also a tourist destination with sensitive ecological zones nearby.

#### WHY IN NEWS?

Indira Point is near the site of the proposed Great Nicobar Island Development Project, making it relevant to strategic and environmental discussions.

### Kameng Region

The **Kameng region** is located in the western part of Arunachal Pradesh, characterized by **high-altitude Himalayan terrain** with elevations ranging from 1,000 to over 4,000 meters. It includes the East Kameng and West Kameng districts. The area is rich in biodiversity, hosting dense forests and rare wildlife species such as the Mishmi takin and red panda. It has strategic importance due to its proximity to the India-China border. The region experiences heavy rainfall and extreme cold, making military operations and logistics challenging. Indigenous tribes such as the Nyishi and Miji inhabit this region with distinct cultural practices.

#### WHY IN NEWS?

The Indian Army conducted Exercise Yudh Kaushal 3.0 in the Kameng region to demonstrate preparedness for next-generation warfare in extreme Himalayan conditions.

### Kangpokpi District

Kangpokpi is a district in Manipur, predominantly inhabited by Kuki-Zo communities. It is strategically important as National Highway-2 passes through it, connecting the Imphal Valley to Nagaland and Assam. The district has been a flashpoint in ethnic conflicts between Kuki-Zo and Meitei groups. Kangpokpi hosts several insurgent camps, which have been subjects of negotiation for relocation under peace agreements. The area's geography makes it vital for trade and transportation in Northeast India. Development and security in Kangpokpi are critical for maintaining regional stability and ensuring the uninterrupted flow of goods and people along NH-2.

#### WHY IN NEWS?

Kangpokpi district's National Highway-2 was reopened after agreements between the



Kuki-Zo Council and the government, ending a two-year disruption affecting the Meitei population.

### **Katchatheevu Island**

Katchatheevu is a tiny, uninhabited island (**less than half a square mile**) in the Palk Straits, legally part of Sri Lanka since the 1974 India-Sri Lanka Maritime Boundary Treaty. It hosts only the church of St. Anthony, where Tamil Nadu fishermen hold an annual festival. The island's sovereignty was settled based on historical administrative control dating back to Portuguese, Dutch, and Tamil Jaffna kingdom rule. International law principles such as **pacta sunt servanda** (treaties must be honored) affirm the treaty's binding nature. Fishing rights near Katchatheevu are separate from sovereignty, governed by historic usage recognized in Indian and Sri Lankan law.

#### WHY IN NEWS?

Katchatheevu remains a contentious symbol in the India-Sri Lanka fisheries dispute, but legal experts emphasize its sovereignty is settled and unrelated to fishing rights conflicts discussed in 2025 diplomatic talks.

### **Levees and River Sinuosity**

Levees are natural or artificial embankments along riverbanks formed by sediment deposition during floods. Vegetation promotes levee formation by stabilizing banks and trapping sediments. Levees influence river sinuosity, which is the measure of how winding a river's course is. Vegetated levees limit lateral migration of river bends, reducing sinuosity, whereas unvegetated rivers tend to have bends that migrate downstream without lateral movement, increasing sinuosity. This affects sedimentary deposits and river channel stability. Levee formation and vegetation thus play a very important role in controlling river morphology and floodplain dynamics.

#### WHY IN NEWS?

Stanford researchers showed how vegetation-driven levees affect meandering river bends, challenging previous interpretations of sedimentary records.

### **Lothal**

Lothal was a prominent port city of the **Indus Valley Civilization** around 5,000 years ago, located in present-day Gujarat. It was a major trading hub and ship-repair center, known for its advanced dockyard system, one of the world's earliest. Excavations revealed a well-planned city with a grid layout, sophisticated drainage, and bead-making workshops. The site links maritime trade with Mesopotamia and other ancient civilizations. Lothal's dockyard is considered the earliest known example of a man-made harbor.

#### WHY IN NEWS?

Lothal is the location for the new National Maritime Heritage Complex, which aims to revitalize its maritime legacy.

### **Meghalayan Age Caves**

The **Meghalayan Age Caves** in Meghalaya, especially the Mawmluh Cave, serve as the global stratotype section and point (GSSP) for the Meghalayan Age, the most recent



subdivision of the Holocene Epoch. This age began approximately 4,200 years ago, marked by global climatic event causing droughts and societal changes worldwide. The caves preserve geological and climatic evidence crucial for understanding Holocene climate transitions. The Meghalayan Age was officially ratified by the International Commission on Stratigraphy in 2018, making these caves a key geological reference point for scientists studying recent Earth history.

#### WHY IN NEWS?

The Meghalayan Age Caves were included in Indias UNESCO Tentative List, emphasizing their global geological significance and role as the official reference for the Meghalayan Age.

### Mizo Hills

The **Mizo Hills** are a mountainous region in northeast India, predominantly in Mizoram state, covering about **8,000 square miles**. They are part of the Lushai Hills and are characterized by dense forests, steep terrain, and diverse tribal communities. The Mizo people have a distinct culture, language, and customs. The region was once part of British Indias Assam province before Mizoram became a separate state in 1987. The area was historically isolated, with limited infrastructure, making it a challenge during the first general elections in 1951-52. The Mizo Hills are known for their unique festivals like Chapchar Kut and their contributions to India's biodiversity.

#### WHY IN NEWS?

Referenced as one of the challenging and backward regions that participated enthusiastically in Indias first general elections despite geographical and infrastructural hardships.

### Monsoon Trough

The monsoon trough is an elongated **low-pressure area** extending over the Indian subcontinent during the monsoon season. It forms part of the Intertropical Convergence Zone (ITCZ) and is critical in driving the southwest monsoon winds. The troughs position influences the distribution and intensity of monsoon rainfall. When it shifts south of its normal position, rainfall patterns change, often reducing precipitation in some areas while increasing it in others. The monsoon trough interacts with other atmospheric systems, such as western disturbances, sometimes causing extreme weather events like floods and landslides in the Himalayan foothills.

#### WHY IN NEWS?

The monsoon trough is currently positioned south of normal, interacting with a western disturbance to cause prolonged heavy rainfall in northwest India.

### Naga Hill Ophiolite

The **Naga Hill Ophiolite** in Nagaland represents a rare geological phenomenon where oceanic crust and upper mantle rocks have been thrust onto continental crust. Ophiolites provide critical evidence for plate tectonics and mid-ocean ridge processes. The Naga Hill Ophiolite is for its well-preserved sequence of ultramafic to mafic rocks, including



peridotites, gabbros, and pillow basalts. This ophiolite complex offers vital information about the tectonic evolution of the northeastern Indian subcontinent and the closure of the Tethys Ocean during the Mesozoic era.

#### WHY IN NEWS?

The Naga Hill Ophiolite was added to the UNESCO Tentative List, denoting its importance for understanding tectonic and oceanic crust formation processes.

### **Penna River**

The **Penna River** is a major river in the state of Indias of Karnataka and Andhra Pradesh, flowing for approximately 597 kilometers before emptying into the Bay of Bengal. It originates from the Nandi Hills in Karnataka and passes through several districts, including Nellore. The river basin supports agriculture and local ecosystems but is prone to seasonal flooding during monsoon periods. The river's flow is regulated by multiple dams and reservoirs, including the Somasila and Kandaleru projects. The Penna River basin spans about 55,213 square kilometers, making it an important water resource for irrigation and drinking water in the region.

#### WHY IN NEWS?

Eighteen youngsters were stranded on an island in the middle of the Penna River during sudden floods in Nellore district, Andhra Pradesh, prompting a seven-hour rescue operation involving police and irrigation officials.

### **Rurban Landscape**

The term rurban describes Kerala's unique blend of rural and urban features where villages and towns seamlessly merge, creating a continuous socio-economic fabric. This landscape defies traditional urban-rural divides, with intertwined agriculture, trade, and urban services. The concept reflects Kerala's demographic shift, with an urbanization rate projected to exceed 80% by 2050. Rurban areas often face complex governance challenges due to mixed land uses and infrastructure needs. The KUPC leverages this concept to design policies that respect local identities while addressing urban growth and climate risks, emphasizing organic ecosystems rather than conventional urban sprawl.

#### WHY IN NEWS?

Kerala's urban policy integrates the rurban concept to tailor development strategies that balance rapid urbanization with ecological and cultural continuity in the state's unique settlement pattern.

### **Shimla, Himachal Pradesh**

Shimla is the capital city of Himachal Pradesh, located in the northwestern Himalayas at an altitude of approximately 2,200 meters. It served as the summer capital of British India until 1947. Shimla is known for its colonial architecture, including the Viceregal Lodge and Christ Church. It is a prominent tourist destination famous for its temperate climate, scenic views, and as a center for education and government administration. Shimla hosts many important government meetings and conferences due to its strategic location and pleasant weather. The city has a population of around 170,000 as per the 2021 census.



## WHY IN NEWS?

Shimla hosted the 196th ESIC meeting on 26th June 2025, where the Amnesty Scheme 2025 was approved under the chairmanship of the Union Minister for Labour & Employment.

**Sirarakhong Village**

Sirarakhong is a village located in the Ukhrul district of Manipur. It is renowned for its cultivation of the **Sirarakhong Hathei chilli**, which has earned a GI tag for its unique flavor. The village is inhabited predominantly by the Tangkhul Naga tribe, known for preserving traditional agricultural practices and rich cultural heritage. Sirarakhong's economy largely depends on agriculture, handicrafts, and recently, agro-tourism boosted by festivals such as the Hathei Chilli Festival. The village is also involved in various environmental conservation efforts, including tree plantation drives aligned with national campaigns.

## WHY IN NEWS?

Sirarakhong Village hosted the 14-day-long 14th Sirarakhong Hathei Chilli Festival, denoting its cultural and agricultural significance.

**Swaraj Dweep (Havelock Island)**

Swaraj Dweep, formerly known as Havelock Island, is part of the Andaman and Nicobar Islands and lies approximately 140-150 km from Barren Island. It is one of the nearest inhabited islands to Barren Island. Swaraj Dweep is known for its pristine beaches, coral reefs, and rich biodiversity. It was renamed in 2018 to honor the Indian independence movement. The island is a popular tourist destination and serves as a logistical base for scientific expeditions to nearby uninhabited islands like Barren Island. It has limited but growing infrastructure supporting eco-tourism and marine research.

## WHY IN NEWS?

Swaraj Dweep is mentioned as the nearest inhabited island to Barren Island, which experienced volcanic eruptions in September 2025.

**Tinsukia District**

Tinsukia is an eastern district of Assam, known for its rich natural resources including oil, coal, and tea plantations. It is a commercial and industrial hub due to these resources. The district has a diverse population with multiple indigenous communities, including the Moran, Tai Ahom, and Adivasi groups. Tinsukia is also home to several Oil India Limited and Coal India Limited operations. The area has frequently been a center for ethnic and political movements related to indigenous rights and resource control. Its strategic location near Arunachal Pradesh and Assam's tea belt enhances its economic importance.

## WHY IN NEWS?

Tinsukia district is the site of the economic blockade led by the Moran community, affecting transportation of vital resources and drawing government attention to ethnic demands.

**V.O. Chidambaranar Port**

V.O. Chidambaranar Port, also known as Tuticorin Port, is a major port in Tamil Nadu,



established in 1974. It handles diverse cargo including coal, salt, and seafood exports. The port is named after freedom fighter V.O. Chidambaram Pillai, who pioneered Swadeshi shipping. It is one of the few ports in India with an Outer Harbour project aimed at increasing capacity. The port is equipped with specialized terminals for coal, liquid cargo, and container handling. It has been a key node in the Sagarmala initiative, focusing on port modernization and connectivity improvements.

#### WHY IN NEWS?

VOC Port inaugurated Indias first port-based Green Hydrogen Pilot Project and laid foundations for green methanol bunkering, aiming to become a green bunkering hub in South India.

### Varkala Cliff

The **Varkala Cliff**, also known locally as **Sivagiri Thuruthu**, is a unique geological formation on Keralas coast, dating back to the Mio-Pliocene era, approximately 5 to 23 million years ago. It consists mainly of **laterite and sedimentary rock layers** containing fossils and ancient climate records. Unlike other Kerala beaches, it is the only place where cliffs rise directly from the Arabian Sea. The cliff is highly vulnerable to erosion due to the porous nature of laterite and is threatened by unregulated construction and climate-driven sea surges. It is a rare outdoor archive of Earths geological history.

#### WHY IN NEWS?

UNESCO has placed the Varkala Cliff on its tentative World Heritage list, recognizing its geological and cultural significance amid concerns over erosion and unregulated tourism development.

### Vijoyagar Circle

Vijoyagar is one of the most remote administrative circles in Arunachal Pradesh, located near the border with Myanmar. It lies at an altitude of approximately 1,200 meters and is part of a region known for dense evergreen rainforests. The area is biologically rich but difficult to access due to limited infrastructure. It is inhabited by indigenous communities and is important for biodiversity conservation, especially for orchids and other endemic flora. Vijoyagar plays role in cross-border ecological studies due to its proximity to Myanmars Kachin State.

#### WHY IN NEWS?

Vijoyagar gained attention when researchers discovered the presence of *Gastrochilus pechei* there, marking a new botanical record for India.

### Western Disturbance

Western disturbances are **extratropical storms** originating in the Mediterranean region that move eastward, bringing winter rainfall to northwestern India and Pakistan. They primarily affect the western Himalayan region during winter months, causing snowfall and rain. These systems are **caused by westerly winds** and are distinct from the monsoon. Occasionally, they interact with the monsoon trough, leading to unusual heavy rainfall in summer. Their frequency and intensity vary yearly, influenced by global weather patterns.



Western disturbances contribute to the water supply for agriculture in northwest India during the rabi cropping season.

#### WHY IN NEWS?

Western disturbances are currently interacting with the monsoon trough, causing heavy to extremely heavy rainfall and increasing flood risks in north India's hill states.

### Western Himalayas

The Western Himalayas span **Jammu and Kashmir, Himachal Pradesh, and Uttarakhand**. This region experiences complex climatic conditions due to its elevation and topography. It receives less monsoon rainfall than the eastern Himalayas but is vulnerable to extreme precipitation events like cloudbursts. The terrain includes steep slopes prone to landslides and flash floods when heavy rains occur. The Western Himalayas have recorded some of the highest 24-hour rainfall totals in India, such as **630 mm in Udhampur**. The region's hydrology is critical for rivers like the Chenab and Yamuna, impacting millions downstream.

#### WHY IN NEWS?

Heavy rainfall and landslides in the Western Himalayas have caused damage and fatalities during the recent monsoon, denoting the region's vulnerability to extreme weather events.

### Ziro Valley

Ziro Valley is a **bowl-shaped valley** located in the lower Subansiri district of Arunachal Pradesh, nestled in the eastern Himalayan foothills. It is known for its scenic beauty, rich biodiversity, and indigenous tribal cultures, particularly the Apatani tribe. The valley's geography supports sustainable agriculture, including unique wet rice cultivation practiced by the Apatanis. Ziro Valley hosts the annual Ziro Music Festival, attracting visitors nationwide. It is recognized for its cultural and ecological significance and is part of efforts to promote eco-tourism and preserve tribal traditions in Arunachal Pradesh.

#### WHY IN NEWS?

Ziro Valley is mentioned as the homeland of the Apatani tribe, where traditional customs like nose plugs and facial tattoos originated and continue to hold cultural importance.

### Zojila Pass

Zojila Pass is a strategic mountain pass in the Himalayas connecting Ladakh with Kashmir Valley. It stands at approximately **3,528 meters (11,575 feet)** altitude and is a vital link for military and civilian traffic. The pass is known for extreme weather conditions, often closing in winter due to heavy snowfall. Recently, it was reopened in just **31 days** after winter closure, a record time achieved through intensive engineering and technological efforts. The pass is critical for national security and regional economy, serving as a gateway to Ladakh's remote areas.

#### WHY IN NEWS?

Zojila Pass was reopened rapidly in April 2025 after winter closure, demonstrating enhanced high-altitude connectivity efforts by Project Vijayak.



## Environment & Ecology

### Aflatoxins

Aflatoxins are toxic compounds produced by the fungi **Aspergillus flavus** and **Aspergillus parasiticus** that contaminate crops like groundnuts and grains in warm, humid environments. They are genotoxic and carcinogenic, with **Aflatoxin B1** classified as a potent liver carcinogen. Aflatoxins cause serious health risks in humans and animals, including liver damage and immune suppression. Detection requires precise sampling and testing protocols due to uneven distribution in crops. Global food safety agencies regulate aflatoxin levels to protect public health and facilitate international trade.

#### WHY IN NEWS?

Indonesia suspended imports of Indian groundnuts due to higher aflatoxin levels, raising concerns over food safety and testing standards.

### Amrit Sarovar

An **Amrit Sarovar** is a traditional or newly constructed pond intended to conserve water and recharge groundwater in rural India. These ponds serve multiple functions – irrigation support, drinking water source for livestock, and ecosystem preservation. Historically, sarovars played a vital role in Indian villages but many fell into disrepair. The Amrit Sarovar initiative revives this practice by creating or restoring 75 ponds per district, encouraging community ownership and environmental balance. These water bodies also help mitigate drought effects and support rural livelihoods through sustainable water management.

#### WHY IN NEWS?

The Amrit Sarovar concept is central to the Government's water conservation strategy under the Amrit Sarovar Mission, brought into light during the recent national workshop.

### Artificial Nest Boxes

Artificial nest boxes are man-made structures designed to replicate natural tree cavities used by cavity-nesting birds like the yellow-crested cockatoo. These boxes provide safe breeding sites in environments where natural hollows have been lost due to tree trimming, storms, or deforestation. Materials used are typically wood or durable composites, with design features to mimic temperature and humidity conditions of natural nests. Installation locations are chosen to balance protection from predators and human disturbance. Artificial nest boxes have been successfully used worldwide to aid endangered cavity-nesting species, improving reproductive success and population stability.

#### WHY IN NEWS?

Hong Kong conservationists are deploying artificial nest boxes to mitigate habitat loss for yellow-crested cockatoos in urban parks, aiming to boost breeding success and population numbers.

### Atlantic Meridional Overturning Circulation (AMOC)

The AMOC is a major component of the global thermohaline circulation, transporting



warm surface waters from the tropics northward in the Atlantic Ocean. It cools and sinks in the North Atlantic, returning southward as a deep, cold current. This circulation regulates climate by redistributing heat and nutrients globally. The AMOC has weakened to its lowest level in 1,600 years, mainly due to freshwater input from melting Greenland ice and Arctic regions, which reduces water density and sinking. Its collapse would disrupt weather patterns, cool the Northern Hemisphere, increase sea ice around Greenland, and shift tropical rain belts southward.

#### WHY IN NEWS?

A recent study warns the AMOC tipping point could be reached within decades, making its shutdown inevitable after 2100, with major climate impacts expected.

#### Atmospheric Lifetime of CFCs

Chlorofluorocarbons (CFCs) have an atmospheric lifetime of up to **100 years**, meaning they persist in the atmosphere for a century after release. Their long lifespan allows them to reach the stratosphere, where they catalyze ozone depletion. This longevity delays the full recovery of the ozone layer despite the Montreal Protocol's phase-out measures. CFCs were widely used in refrigeration, air conditioning, and aerosol propellants before being regulated. The slow breakdown of CFCs explains why the Antarctic ozone hole is projected to recover only by **2066**.

#### WHY IN NEWS?

Experts in India cite the long atmospheric lifetime of CFCs as a reason why ozone layer recovery will take decades despite current global efforts.

#### Bhagirathi EcoSensitive Zone (BESZ)

The **Bhagirathi EcoSensitive Zone** spans **4157 sq km** between Gangotri and Uttarkashi in Uttarakhand, designated to protect the rivers ecology and watershed near its origin. It contains **238 glaciers** whose retreat is accelerated by climate change. The zone restricts construction to preserve fragile Himalayan terrain but has faced violations, including multistorey buildings in Maneri and Jamak villages. The Uttarkashi-Gangotri national highway widening project involves felling **13,000 trees** in BESZ, with additional deforestation planned. The zone's slopes are unstable, prompting alternate project design suggestions by scrutiny committees to mitigate environmental damage.

#### WHY IN NEWS?

BESZ is in focus due to environmental damage from the Char Dham road widening project, which violates protection norms and contributes to landslides and floods in Uttarakhand.

#### Bhakra Nangal Dam

The **Bhakra Nangal Dam** is a concrete gravity dam on the Sutlej River in Himachal Pradesh. It is one of the highest gravity dams in the world, standing at 226 meters tall. Commissioned in 1963, it serves multiple purposes including irrigation, hydroelectric power generation, and flood control. The dam supports the Bhakra Nangal Project, which irrigates over 10 million hectares across northern India. The reservoir created by the dam,



Gobind Sagar, is a major freshwater resource. The dams flood control function is critical during monsoon seasons, monitored continuously by dedicated cells to prevent downstream flooding.

#### WHY IN NEWS?

The Bhakra Nangal Dams water levels are being monitored round-the-clock by a Flood Control and Water Level Monitoring Cell due to the recent floods impacting northern state of Indias.

### **Bharat Electricity**

Bharat Electricity is a global energy forum based in India that focuses on energy policy, market trends, and sustainable development. It serves as a platform for industry experts, policymakers, and stakeholders to discuss challenges and innovations in the energy sector. The forum emphasizes renewable energy integration, energy security, and economic impacts of energy policies. It has gained recognition for its role in denoting India's energy paradox, especially the gap between renewable capacity and actual demand. Bharat Electricity also collaborates with international agencies to promote best practices in grid management and energy transition strategies.

#### WHY IN NEWS?

Bharat Electricity was mentioned as the forum where a senior expert brought into light Indias paradoxical energy crisis involving unused renewable capacity despite growing demand.

### **Bio Mining Tenders**

Bio mining is a waste management technique involving the excavation and processing of old landfill sites to recover usable materials and reduce waste volume. Delhi has awarded two phases of bio mining tenders covering **60 lakh metric tonnes** of accumulated waste, aiming to clear garbage mountains by 2028. This method improves landfill stability, reduces methane emissions, and allows recycling of organic and inorganic components. The third phase tender is expected by October 2025. Bio mining is part of Delhis technology-driven waste disposal plan, complementing methane capture pilots and strict waste segregation enforcement to ensure sustainable urban sanitation.

#### WHY IN NEWS?

Bio mining tenders form a major part of Delhis strategy to tackle legacy waste and landfill fires as announced by the new government.

### **Bio-Decomposer (Pusa Institute)**

The bio-decomposer developed at the Indian Agricultural Research Institute (IARI), commonly known as Pusa Institute, is a microbial solution that converts crop stubble into manure. This technology offers an eco-friendly alternative to stubble burning, which causes severe air pollution in Delhi and neighboring states. The bio-decomposer works by accelerating the decomposition of wheat and rice straw residues within 15-20 days. It is cost-effective, reduces farmers dependency on burning, and enriches soil fertility. The technology has been promoted for scaling up across northern India with government



support and financial incentives for farmers to reduce pollution from agricultural fires.

#### WHY IN NEWS?

Delhi's government plans to expand use and share this technology with neighboring states to curb stubble burning and improve air quality.

### **Blue Dragon (*Glaucus atlanticus*)**

The **blue dragon** is a small pelagic sea slug, measuring about four centimeters, known scientifically as *Glaucus atlanticus*. It floats upside down on the ocean surface using an air bubble in its stomach. Its dorsal side is blue for camouflage against the sea, while its ventral side is white to blend with sunlight from below. Blue dragons feed on venomous siphonophores like the Portuguese man o' war, storing their stinging cells in finger-like appendages. Their sting is more potent than the jellyfish they consume and can cause pain, redness, nausea, and vomiting in humans but is not fatal.

#### WHY IN NEWS?

Blue dragons have appeared in large numbers on Spanish beaches, including Lanzarote and Guardamar del Segura, causing beach closures and surprising locals and scientists due to their rare presence in the Mediterranean Sea.

### **Central Asian Flyway (CAF)**

The **Central Asian Flyway** is a major migratory bird route spanning over **30 countries**, connecting breeding grounds in Central Asia to wintering areas across South Asia. It supports millions of migratory birds annually, including vultures and raptors. The flyway links ecosystems and disease risks across borders, making it crucial for biodiversity and public health. It is recognized under the **Convention on Migratory Species** and plays a key role in regional disease preparedness. Carcass dumps and poorly managed landfills along the flyway can become zoonotic spillover hotspots, denoting the need for coordinated conservation and health strategies.

#### WHY IN NEWS?

The Central Asian Flyway is central to regional efforts in vulture conservation and pandemic prevention, emphasizing cross-border collaboration to reduce zoonotic spillover risks in South Asia.

### **Cephalopods**

Cephalopods are a class of mollusks including squid, cuttlefish, and octopus. They are characterized by bilateral body symmetry, a prominent head, and a set of arms or tentacles. Cephalopods have advanced nervous systems and complex eyes, making them among the most intelligent invertebrates. They use jet propulsion for movement and can change color rapidly through chromatophores for camouflage or communication. Cephalopods are important in marine ecosystems as both predators and prey. India is exporter of cephalopods, especially to the EU and East Asian markets, where these species are valued for culinary uses.

#### WHY IN NEWS?

The EU's listing of new Indian fishery establishments marks increased exports of aquaculture shrimps and cephalopods like squid, cuttlefish, and octopus.



## Chenab River Overflow

The Chenab River is a major tributary of the Indus River system, flowing through the Jammu region of Jammu & Kashmir. It originates in the upper Himalayas and traverses difficult mountainous terrain. The river is prone to seasonal flooding during the monsoon due to rapid snowmelt and heavy rainfall. It supports agriculture and hydroelectric projects but also poses flood risks to downstream settlements. Floodwaters can cause landslides and infrastructure damage in the region. The Chenab's flow is regulated by several dams and barrages, yet extreme weather events often lead to overflow and associated disasters.

### WHY IN NEWS?

Heavy rains caused the Chenab River to overflow, triggering landslides and floods in Jammu, resulting in fatalities and injuries.

## Coastal Regulation Zone 1A (CRZ 1A)

**CRZ 1A** is a coastal classification under India's Coastal Regulation Zone Notification that designates ecologically sensitive areas such as mangroves, coral reefs, and turtle nesting sites as no-development zones. Construction and industrial activities are prohibited in CRZ 1A to protect biodiversity and coastal ecosystems. Great Nicobars proposed port site partly falls within CRZ 1A, which includes critical turtle nesting habitats and coral reefs. Despite a National Green Tribunal order enforcing these protections, authorities have attempted to reclassify the area through a high-powered committee to allow construction. The committee's report remains undisclosed, raising transparency issues.

### WHY IN NEWS?

The port construction's violation of CRZ 1A regulations is central to environmental and legal disputes surrounding the Great Nicobar project.

## Cross River Gorilla

The **Cross River gorilla** (*Gorilla gorilla diehli*) is a subspecies of western gorilla found only in the mountainous forests between Nigeria and Cameroon. Fewer than **300 individuals** remain in the wild, making it the rarest African great ape. They inhabit elevations between **1,500 and 3,500 meters**, including the Cross River basin, Afi Mountains, Mbe Mountains, and Takamanda National Park. Physically, they have brownish-grey to black fur, hairless faces, and a distinctive red crest on their cone-shaped heads. Adult males develop silverbacks. Their diet includes leaves, nuts, berries, and lianas, and they build nests on the ground or trees seasonally.

### WHY IN NEWS?

The Cross River gorilla is critically endangered, with conservation efforts intensifying due to habitat loss, poaching, and disease threats. Recent attention marks their rarity and the urgent need to protect their shrinking population.

## Deccan Traps

The **Deccan Traps** are one of the largest volcanic features on Earth, covering about 500,000 square kilometers in west-central India. Formed around 66 million years ago,



these extensive lava flows are linked to the mass extinction event that wiped out the dinosaurs. The traps consist mainly of basalt and are layered in multiple flows, creating a step-like landscape. The region around Panchgani and Mahabaleshwar is noted for some of the best-preserved lava sequences. The Deccan Traps also influence local biodiversity and climate patterns and are part of the Koyna Wildlife Sanctuary, a UNESCO World Heritage Site.

#### WHY IN NEWS?

The Deccan Traps at Panchgani and Mahabaleshwar were recently added to UNESCO's Tentative List of World Heritage Sites, denoting their geological and ecological importance.

#### Deforestation-Induced Warming Pixels

Scientists use **1 km<sup>2</sup> pixels** to measure forest cover loss and associated temperature changes. Pixels with at least 2% forest loss between 2001 and 2020 were analyzed globally in tropical regions. About **60%** of pixels experiencing warming exceeding 4.4°C above the mean overlapped with deforested areas. This pixel-based approach allows precise spatial mapping of deforestation impacts on local land surface temperatures. Average warming in deforested pixels was over 0.70°C annually, compared to 0.20°C in forested pixels. This method helps quantify the direct thermal effects of forest loss on microclimates.

#### WHY IN NEWS?

The study used pixel-level satellite data to link deforestation to local temperature increases, revealing that extreme warming hotspots coincide with areas of forest loss in tropical regions.

#### Delhi Preservation of Trees Act (DPTA), 1994

The **Delhi Preservation of Trees Act, 1994** is a legal framework aimed at protecting trees within the National Capital Territory of Delhi. It defines a tree as a woody plant with a trunk at least 5 centimeters in diameter at 30 centimeters above ground and at least 1 meter in height. The Act regulates tree felling, transplanting, and pruning activities, requiring prior permission from authorities. It also establishes penalties for unauthorized cutting. The law aims to maintain ecological balance and urban greenery amid rapid urbanization and infrastructure development in Delhi.

#### WHY IN NEWS?

The Delhi Forest Department reiterated the Act's definition of a tree to prevent miscounting branches or shoots as separate trees, ensuring uniform application of the law in tree management and preservation.

#### Dhordo Village

Dhordo is a remote village located in the Kutch district of Gujarat. It is globally recognized by the United Nations World Tourism Organisation (UNWTO) as the **Best Tourism Village**. The village is known for its unique desert landscape and proximity to the Rann of Kutch salt marshes. Dhordo has recently become fully solar-powered, making it the **fourth solar village in Gujarat**. The village's solar initiative includes **81 homes equipped with solar**



**rooftops**, generating 177 kilowatts of power and producing approximately 2.95 lakh units annually. This supports sustainable development and local prosperity through clean energy.

#### WHY IN NEWS?

Dhordo village has become fully solar-powered, with Prime Minister Narendra Modi dedicating this achievement during the 'Samudra Se Samridhi' event on September 20, 2025, marking a milestone in Gujarat's renewable energy efforts.

### Dhussi Bundhs

Dhussi bundhs are traditional **earthen embankments** constructed along rivers in Punjab to control flooding. Made from compacted soil, they act as the first line of defense against river overflows during monsoon seasons. Their effectiveness depends on regular maintenance and reinforcement. Illegal mining and erosion weaken these bundhs, increasing flood risk. Historically, dhussi bundhs have been crucial in protecting agricultural land and villages from inundation. Despite modern flood control measures, many communities still rely on these structures. Strengthening and desilting near these bundhs can reduce flood damage. The term "dhussi" is region-specific to Punjab and adjacent areas.

#### WHY IN NEWS?

Dhussi bundhs in Punjab have been blamed for failing during the 2025 floods, with illegal mining weakening them and calls for urgent strengthening to prevent future flood disasters.

### Dugong Conservation Reserve

The Dugong Conservation Reserve, established in **September 2022** in Tamil Nadu, spans **448.34 sq. km.** in northern Palk Bay. It protects over **12,250 hectares** of seagrass meadows, essential for the dugong (Dugong dugon), a marine mammal listed as Vulnerable by the IUCN. The reserve was created under the **Wildlife Protection Act, 1972**. It focuses on habitat protection, sustainable fisheries, and community-led conservation. The reserve uses innovative techniques like **bamboo and coconut rope frames** to restore seagrass beds, enhancing the ecosystem for dugongs and other marine species.

#### WHY IN NEWS?

The IUCN officially recognized India's first Dugong Conservation Reserve at the 2025 World Conservation Congress, marking international endorsement of its marine conservation efforts.

### E20 Fuel

E20 fuel is a motor fuel blend containing **20% ethanol** and **80% petrol**. It reduces greenhouse gas emissions by approximately 65% for sugarcane-based ethanol and 50% for maize-based ethanol compared to petrol. India achieved E20 adoption five years ahead of schedule in 2025, making it the primary fuel option at nearly **90,000 fuel stations**. Most Indian vehicles before April 2025 were designed for E10, and engines require modifications like rubber parts and gaskets to handle E20 efficiently. E20 helps reduce



crude oil imports and aligns with India's net-zero emissions target by 2070.

#### WHY IN NEWS?

India announced the nationwide rollout of E20 fuel in 2025, accelerating the ethanol blending target to reduce emissions and foreign oil dependence, sparking debate on vehicle compatibility and environmental impacts.

### **EMBER Project**

The EMBER project is a DARPA-funded research initiative exploring biological and green technologies to process rare earth elements (REEs) using microbes. It aims to develop environmentally friendly alternatives to traditional solvent extraction methods, which are chemically intensive and generate hazardous waste. The project targets industrial scalability but remains years away from commercial deployment. EMBER seeks to reduce the environmental footprint of REE processing while maintaining efficiency. This biological approach could transform supply chains by enabling domestic recycling and extraction from waste streams. The project represents a strategic attempt to innovate beyond China's dominant chemical processing techniques.

#### WHY IN NEWS?

The EMBER project is brought into light as a promising but still immature technology in the global race to develop sustainable rare earth processing methods amid supply chain challenges in 2025.

### **Energy Conservation Building Code (ECBC)**

The Energy Conservation Building Code (ECBC) is an Government of India initiative aimed at improving energy efficiency in commercial buildings. It sets minimum energy performance standards for building design, materials, and systems including lighting, HVAC, and insulation. ECBC promotes the integration of renewable energy, smart metering, and AI-based energy management tools. The code applies to new constructions and major renovations, encouraging sustainable building practices. It supports certification programs like GRIHA and LEED by providing a regulatory framework. ECBC is periodically updated to incorporate evolving technologies and align with national energy efficiency goals.

#### WHY IN NEWS?

ECBC is noted for its role in integrating AI and data analytics into sustainable building design and energy management, supporting India's push for energy-efficient, green-certified real estate amid rising AI-related energy consumption.

### **Flood Gates**

Flood gates are mechanical barriers installed in dams, canals, or river embankments to control water flow and prevent flooding. They regulate water discharge during heavy rains or high river levels to protect downstream areas. Flood gates can be manually or automatically operated and are critical in managing water levels in reservoirs and irrigation systems. They help mitigate flood damage by controlling the speed and volume of water release. Their design varies depending on the location and purpose, including



radial gates, sluice gates, and vertical lift gates. Proper operation requires coordination between irrigation and disaster management authorities.

#### WHY IN NEWS?

The Irrigation Department staff closed flood gates to reduce water flow and assist in the rescue of youths trapped on an island in the Penna River during sudden flooding.

### Fossil Fuel Production Gap

The fossil fuel production gap refers to the difference between the amount of fossil fuels governments plan to produce and the amount consistent with climate targets to limit warming to 1.5°C or 2°C. This gap has widened from 110% over 1.5°C limits in 2023 to 120% in 2025. It quantifies the overproduction that undermines global efforts to reduce greenhouse gas emissions. The gap includes coal, oil, and natural gas production and is tracked globally and by country. Addressing this gap is critical for meeting Paris Agreement goals and achieving net zero emissions by mid-century.

#### WHY IN NEWS?

The 2025 report marks an increased fossil fuel production gap, signaling governments continued plans to produce more fossil fuels than climate targets allow.

### Ganges-Brahmaputra Aquifer

The **Ganges-Brahmaputra basin** contains one of the world's fastest-depleting aquifers, with groundwater levels falling by **15-20 millimeters annually**. This basin supports over 650 million people and is vital for irrigation and drinking water. Much of the groundwater is contaminated with arsenic and fluoride, posing serious health risks and reducing agricultural productivity. Over-extraction for agriculture and industry accelerates depletion. The aquifers decline threatens food security and livelihoods across northern India and Bangladesh, where smaller tributaries are drying up during summer months.

#### WHY IN NEWS?

Rapid depletion and contamination of the Ganges-Brahmaputra aquifer is worsening water scarcity amid the Ganges Rivers drying crisis.

### Gangotri Glacier

The **Gangotri Glacier** is the largest glacier in the Himalayas and the primary source of the Ganges River. It has retreated nearly **one kilometre in just two decades** due to rising temperatures. This glacier is part of the greater Himalayan glacial system often called the **water towers of Asia**, which feed major rivers across the continent. Melting glaciers cause initial floods from glacial lakes but ultimately reduce dry-season water flow downstream. The retreat of Gangotri impacts water availability for millions, affecting agriculture, drinking water, and ecosystems reliant on the Ganges basin.

#### WHY IN NEWS?

The Gangotri Glacier's rapid retreat is a key factor driving the unprecedented drying of the Ganges River, threatening water security and livelihoods across South Asia.

### Gokul Jalashay

Gokul Jalashay is an **oxbow lake** located on the southern edge of the river Ganga in Buxar district, Bihar. It acts as a natural buffer during floods, protecting nearby villages. The



wetland supports over **50 bird species** and sustains local communities through fishing, farming, and irrigation. Each year, villagers organize a traditional festival to collaboratively remove weeds and clean the catchment area, maintaining the wetland's health. Its ecological role in flood control and biodiversity conservation is vital for the region's environmental stability and livelihoods.

#### WHY IN NEWS?

Gokul Jalashay was recently designated as a Ramsar site, denoting its international importance as a wetland and India's commitment to wetland conservation.

### Green Buffers

Green buffers are vegetative zones consisting of trees, shrubs, and grasslands designed to reduce noise pollution by absorbing and deflecting sound waves. They act as natural sound barriers, lowering noise levels in adjacent residential or sensitive areas. The effectiveness depends on the width, density, and type of vegetation. Green buffers also provide additional environmental benefits like air purification, temperature regulation, and biodiversity support. In urban planning, green belts are used to separate high-noise zones such as traffic corridors from quieter residential neighborhoods. Their noise-mitigation potential is increasingly studied but requires scientific assessment and community involvement for optimal implementation.

#### WHY IN NEWS?

Limited experiments with green buffers in Indian cities show promise in noise reduction, prompting calls for broader, scientifically guided urban planning interventions to mitigate chronic noise pollution.

### Green Hydrogen Valley

The **Green Hydrogen Valley** in India is a modern initiative inspired by the ancient Indus Valley civilization, aiming to create a sustainable green hydrogen ecosystem. It involves the establishment of green energy corridors, innovation hubs, and skilling ecosystems primarily in Andhra Pradesh. The Amaravati Declaration is a key policy framework supporting this valley, promoting green hydrogen production, storage, and utilization. This initiative integrates government ministries, industries, and academic institutions to develop indigenous green hydrogen technologies and infrastructure, encouraging a self-reliant green economy and supporting India's 2030 renewable energy goals.

#### WHY IN NEWS?

The Green Hydrogen Valley is brought into light for its role in India's transition to green energy, backed by Andhra Pradesh's green hydrogen policy and the Amaravati Declaration, marking a step in the country's energy transformation.

### Green Methanol Bunkering Facility

Green methanol is methanol produced using renewable energy sources, typically from captured carbon dioxide and green hydrogen. It is considered a sustainable marine fuel alternative to conventional fossil fuels, reducing greenhouse gas emissions. Bunkering refers to the supply of fuel for ships. The green methanol bunkering facility planned at



VOC Port will have a capacity of 750 cubic meters and aims to serve vessels operating in the Coastal Green Shipping Corridor. This initiative supports India's maritime decarbonization goals and aligns with international efforts to reduce shipping emissions.

#### WHY IN NEWS?

Foundation was laid for a ₹35.34 crore Green Methanol Bunkering and Refuelling Facility at VOC Port, enhancing its role in clean maritime fuel supply.

### Grey Rhino Event

A **grey rhino event** describes a highly probable, high-impact risk that is often ignored despite clear warning signs. The term was coined to show predictable crises that receive insufficient attention until they cause damage. Unlike black swan events, which are rare and unpredictable, grey rhinos are visible threats like financial bubbles, climate change, or environmental disasters. The Mundakkai-Chooralmala landslide was classified as a grey rhino event due to prior warnings about landslide risks in the area and ongoing environmental degradation. Recognizing grey rhino events helps improve risk management and policy planning.

#### WHY IN NEWS?

The landslide in the Western Ghats was identified as a grey rhino event in the 2025 report, emphasizing ignored warnings and the need for proactive disaster prevention measures.

### Grey-headed Flying Squirrel

The grey-headed flying squirrel (*Petaurista philippensis*) is a large gliding rodent found in the forests of South and Southeast Asia, including the Himalayas. It has a grey head and reddish-brown body, with a patagium membrane that allows it to glide between trees over distances up to 100 meters. It is nocturnal and feeds on fruits, nuts, and leaves. This species prefers dense forest canopies and is important for seed dispersal. It is not considered threatened but faces habitat pressures from deforestation. Its ability to glide helps it escape predators and move efficiently in mountainous terrain.

#### WHY IN NEWS?

The grey-headed flying squirrel was documented at 4,506 meters in Arunachal Pradesh, marking the highest elevation record for the species in India or globally.

### Hanle Dark Sky Reserve (HDSR)

The **Hanle Dark Sky Reserve** is located in eastern Ladakh at an altitude of 4250 meters. It was officially notified by the Government of Ladakh in December 2022. HDSR focuses on **curtailing light pollution** and **promoting astro-tourism** to benefit local communities. It is centered around the Indian Astronomical Observatory operated by the Indian Institute of Astrophysics. The reserve is known for its **Bortle-1 dark skies**, the darkest sky scale rating, which provides excellent conditions for observing faint celestial objects. HDSR combines scientific research with socio-economic development and cultural preservation.

#### WHY IN NEWS?

The third edition of the HDSR Star Party was held in September 2025, attracting astronomy enthusiasts across India to experience its dark skies and participate in astrophotography and educational activities.



## Harela Festival

The **Harela festival** is an ancient agricultural celebration observed primarily in Uttarakhand, marking the onset of the monsoon and the new sowing season. It involves plantation drives where saplings are planted to symbolize growth and prosperity. Traditionally, the festival includes rituals that honor nature and seek blessings for a bountiful harvest. Communities engage in eco-friendly practices during Harela, such as sustainable farming and forest conservation. The festival also serves as a social event to strengthen community bonds and promote environmental awareness in the fragile Himalayan ecosystem. It usually falls in July or August, coinciding with the monsoon season.

### WHY IN NEWS?

Harela festival activities, including mandatory plantation drives, were brought into light as part of community-led ecological resilience efforts at the 12th Sustainable Mountain Development Summit in Uttarakhand.

## Heat Action Plans (HAPs)

Heat Action Plans are state or city-level strategies developed in India to mitigate heatwave impacts. They include early warning systems, public awareness campaigns, heat shelters, and information dissemination. First implemented in Ahmedabad in 2013, HAPs aim to reduce heat-related morbidity and mortality, especially among vulnerable populations. These plans often involve coordination between health, meteorological, and disaster management departments. Despite their effectiveness, many HAPs face challenges like underfunding, poor institutional coordination, and weak legal frameworks. HAPs are increasingly recognized as critical public health tools in response to rising heatwaves due to climate change.

### WHY IN NEWS?

state of Indias and cities are expanding HAPs to protect workers and vulnerable populations from extreme heat amid rising temperatures and inadequate cooling access.

## Hidden Sugar

Hidden sugar refers to sugars added to processed foods and beverages that are not immediately obvious to consumers. Common sources include **breakfast cereals, sauces, ketchup, fruit juices, and health bars**. Hidden sugar contributes to excess daily sugar intake, often surpassing recommended limits unknowingly. One serving of soft drinks can exceed the entire daily safe sugar intake. Hidden sugars provide empty calories with no essential nutrients and are linked to obesity, type 2 diabetes, fatty liver, heart disease, and dental decay, especially in children. Awareness of hidden sugar is crucial for healthier dietary choices.

### WHY IN NEWS?

The role of hidden sugar in excessive consumption was emphasized during National Nutrition Week 2025 to raise awareness about its health impacts and encourage better food labeling and consumer vigilance.



## Himalayan Brown Bear

The Himalayan brown bear (***Ursus arctos isabellinus***) is a subspecies of the brown bear found primarily in the western Himalayas and Central Asia. It is smaller and lighter in color compared to other brown bear subspecies like the Kodiak or grizzly bears. This bear inhabits alpine and subalpine zones, often between **2,700 to 4,000 meters**. Its population is declining due to habitat loss, climate change, and human encroachment. The species is known for its elusive behavior and is a potential umbrella species for the Himalayan ecosystem. It undergoes hyperphagia in autumn to prepare for winter hibernation.

### WHY IN NEWS?

Increasing human-bear conflicts and climate change impacts on the Himalayan brown bear were brought into light following a recent bear attack on Quratulain Balouch.

## Himalayan Institute of Alternatives Ladakh (HIAL)

The Himalayan Institute of Alternatives Ladakh (HIAL) is a research and educational institute established to promote sustainable development and alternative technologies in the Himalayan region. It focuses on renewable energy, climate adaptation, and indigenous knowledge systems. HIAL collaborates with international universities and research bodies but does not hold Foreign Contribution (Regulation) Act (FCRA) clearance, restricting its ability to receive foreign funding legally. The institute works on projects involving environmental conservation and local community engagement. It is relatively new and less known outside academic and environmental circles.

### WHY IN NEWS?

The CBI is investigating HIAL for suspected violations of FCRA regulations due to its acceptance of foreign funds without proper clearance.

## Hirakud Wetland

Hirakud Wetland borders Debrigarh Wildlife Sanctuary with over 100 km of shared boundary, offering an amphi-terrestrial habitat of wetlands, grasslands, and forests. It hosts over 300 bird species, including 120 migratory species. During October to March, over 400,000 birds use it as a stopover en route to Chilika Lake. The wetland was designated a Ramsar site recently, enhancing its global conservation status. Recently, migratory birds were observed breeding in summer there, indicating improved habitat conditions.

### WHY IN NEWS?

Hirakud Wetlands Ramsar designation and its role in supporting migratory birds contribute to the ecological importance of the newly declared Debrigarh Tiger Reserve.

## Indian Ocean Dipole (IOD)

The Indian Ocean Dipole is a climate phenomenon characterized by differences in sea surface temperature between the western and eastern Indian Ocean. A positive IOD brings warmer waters to the western Indian Ocean and cooler waters to the east, while a negative IOD reverses this pattern. It influences regional weather patterns, including rainfall and droughts in surrounding countries. The IOD affects coral health by



contributing to thermal stress and coral bleaching during its positive phase. It operates on interannual timescales and interacts with other climate phenomena like El Niño, impacting marine ecosystems and fisheries.

#### WHY IN NEWS?

Coral microatoll growth interruptions corresponded with negative IOD events, linking the phenomenon to historical coral stress and bleaching episodes in the Indian Ocean region.

### **Indian Ocean Precipitation Effect**

Warming in the Indian Ocean causes increased precipitation, which reduces rainfall over the Atlantic Ocean. This leads to higher salinity in the tropical Atlantic waters. Saltier water sinks faster as it moves northward, potentially accelerating the AMOC circulation temporarily. However, this effect depends on the relative warming rates of other tropical oceans, especially the Pacific. If the Pacific warms to match the Indian Ocean, the salinity-driven boost to AMOC could stop. This dynamic interaction between ocean basins influences the stability and strength of the Atlantic circulation.

#### WHY IN NEWS?

The Indian Oceans role in modulating AMOC slowdown marks complex inter-ocean feedbacks affecting climate predictions related to Atlantic circulation collapse.

### **International Earth Science Olympiad (IESO)**

The **International Earth Science Olympiad (IESO)** is an annual global competition initiated in 2003 by the International Geoscience Education Organization (IGEO). It targets secondary school students (Classes IX–XII) to promote Earth Science education worldwide. The competition includes theoretical, practical, and team tasks, testing knowledge in geology, meteorology, oceanography, and environmental science. India has participated since 2007 and hosted the 10th edition in 2013 at Mysore. Each year, countries send top students selected through national Olympiads. The event encourages international collaboration and encourages youth to pursue careers in Earth Sciences and related fields.

#### WHY IN NEWS?

The 18th IESO was held in Jining, China, in August 2025, where the Indian team won seven medals and a 3rd prize in the I-GYM Reporter category, denoting Indias growing strength in Earth Sciences education.

### **International Vulture Awareness Day**

International Vulture Awareness Day is observed annually on the first Saturday of September to promote the conservation of vultures worldwide. Established in 2014, it aims to raise awareness about vulture population declines caused by poisoning, habitat loss, and negative social perceptions. Activities include educational events, campaigns, and citizen science projects. The day emphasizes vultures ecological importance as scavengers that prevent disease transmission. In India, it often involves collaboration between NGOs, academic institutions, and government bodies, focusing on species like the slender-billed vulture and the white-rumped vulture.

#### WHY IN NEWS?

The launch event of The Vulture Network portal in Assam was timed ahead of



International Vulture Awareness Day 2025 to maximize outreach and engagement in vulture conservation efforts.

### Invisible Fat

Invisible fat refers to fat naturally present within foods such as cereals, pulses, oilseeds, milk, eggs, and meat that is not visible as added or surface fat. It contributes to total dietary fat and essential fatty acid intake. Invisible fat is chemically similar to visible fats but is embedded within the food matrix, making it harder to quantify or remove. Its presence affects the nutritional profile of diets, especially in populations relying on staple foods. Invisible fat plays a key role in providing essential fatty acids necessary for cellular structure and function.

#### WHY IN NEWS?

Invisible fat is discussed in relation to overall fat intake and nutritional considerations in the debate over eliminating trans-fats and regulating dietary fats.

### Jal Sanchay Jan Bhagidari

The **Jal Sanchay Jan Bhagidari** is a community-driven water conservation initiative under the larger **Jal Shakti Abhiyan – Catch the Rain** campaign by the Government of India. It emphasizes participation from local communities, government bodies, industries, NGOs, and resident welfare associations to promote groundwater recharge and sustainable water management. The program encourages construction of traditional rainwater harvesting structures like **taankas** and stepwells, alongside modern methods such as check dams and gabion structures. It aims to combat water scarcity and groundwater depletion through collective action and decentralized water conservation efforts.

#### WHY IN NEWS?

Bidar district won the Jal Sanchay Jan Bhagidari Award for outstanding contribution to water conservation and community participation under this initiative.

### Jatinga Ecological Zone

Jatinga is a unique ecological transition zone located on the forested slopes of the **Barail Hills** in **Dima Hasao district**, Assam. It is notable for its diverse montane forest habitat, which supports many endemic and specialized species, including newly discovered reptiles like *Cyrtodactylus vanarakshaka*. Jatinga is also famous for its unusual bird phenomenon, where birds mysteriously die or become disoriented during certain weather conditions. The region serves as a critical biodiversity hotspot and ecological corridor within northeast India, linking various forest ecosystems and supporting a wide range of flora and fauna.

#### WHY IN NEWS?

Jatinga is the location where the new gecko species *Cyrtodactylus vanarakshaka* was discovered, denoting its ecological importance.

### Jhelum River Flooding

The Jhelum River originates from the Verinag spring in Kashmir and flows through the Kashmir Valley before entering Pakistan. It is a tributary of the Indus River system and plays a vital role in regional agriculture and hydropower. The river is prone to seasonal



flooding, especially during the monsoon, caused by heavy rainfall and snowmelt. Flooding impacts urban areas like Srinagar and Budgam, often necessitating evacuations and relief camps. The river's floodplains are fertile but vulnerable to inundation. Flood management includes embankments, early warning systems, and coordinated disaster response between Indian and Pakistani authorities.

#### WHY IN NEWS?

The Jhelum River overflowed in Budgam district, Jammu and Kashmir, causing floods and prompting evacuation advisories in Srinagar due to heavy monsoon rains in September 2025.

### **Kadamb Tree**

The **Kadamb tree** (*Neolamarckia cadamba*) is native to South and Southeast Asia and is known for its fragrant, spherical orange-yellow flowers. It grows rapidly, reaching up to 45 meters in height. The tree has cultural significance in Indian mythology and is associated with Lord Krishna. Its wood is used in furniture and paper production. Kadamb trees thrive in moist, tropical climates and help prevent soil erosion. The tree has medicinal properties, including antimicrobial and anti-inflammatory effects. It is also valued for its ability to improve air quality by absorbing pollutants.

#### WHY IN NEWS?

A Kadamb sapling was gifted by King Charles III to Prime Minister of India Narendra Modi, symbolizing the UK-India environmental partnership and Modis Ek Ped Maa Ke Naam initiative.

### **Kamlang Tiger Reserve**

Kamlang Tiger Reserve, located in Arunachal Pradesh's Lohit district, covers diverse habitats including dense forests and riverine areas. It supports a rich variety of flora such as **Dipterocarpus retusus**, **Mesua ferrea**, and multiple bamboo species. The reserve provides ideal ecological conditions for rare butterflies like *Pirdana hyela major*. It was established to protect tigers and other wildlife but is also for its lepidopteran diversity. The reserve's elevation ranges create microhabitats supporting various endemic and rare species, making it a vital conservation area in Northeast India.

#### WHY IN NEWS?

Kamlang Tiger Reserve was the site of the first Arunachal Pradesh record of *Pirdana hyela major*, emphasizing its ecological importance.

### **Kattunayikar Tribes**

The Kattunayikar are an indigenous tribal community residing in the Wayanad district of Kerala, known for their deep knowledge of local biodiversity. They traditionally use wild tubers like "chola kizhangu" in their diet. The tribe practices shifting cultivation and has a rich oral tradition related to forest resources. They play an important role in conserving the shola forests and possess ethnobotanical knowledge vital for identifying new plant species. Their traditional ecological knowledge is increasingly recognized in biodiversity conservation and sustainable forest management in the Western Ghats.



## WHY IN NEWS?

The Kattunayikar tribes traditional name and use of *Dioscorea balakrishnanii* (“chola kizhangu”) were integral to the discovery and identification of this new tuber species in Wayanad forests.

**Kikar and Babool Trees**

Kikar (*Acacia nilotica*) and Babool (*Acacia nilotica* or related species) are thorny trees native to the Indian subcontinent, often found in arid and semi-arid regions. Both species produce multiple shoots or branches emerging close to the ground, sometimes mistaken for separate trees. They are nitrogen-fixing species, improving soil fertility. Kikar wood is used for fuel and fencing, while Babool gum has industrial applications. These trees are drought-resistant and play a role in preventing soil erosion. Their multiple basal shoots have caused confusion in tree counting under legal frameworks like the DPTA.

## WHY IN NEWS?

Earlier, multiple basal branches of Kikar and Babool were counted as separate trees, leading to overestimation in official tree counts, prompting recent clarifications from the Delhi Forest Department.

**Kosi Barrage**

The **Kosi Barrage** is hydraulic structure on the Kosi River, built to control flooding and regulate water flow in Bihar. It consists of a long series of gates that manage river discharge and prevent floodwaters from inundating surrounding areas. The barrage also supports irrigation by channeling water into canals such as the Western Kosi Canal. Constructed in the 1960s, it has faced challenges due to sedimentation and shifting river courses, necessitating ongoing maintenance and upgrades to enhance flood control and water management.

## WHY IN NEWS?

The Kosi Barrage was inspected during the aerial survey by the Union Jal Shakti Minister as part of the broader review of flood control and river linking infrastructure in Bihar.

**Kosi-Mechi Link Project**

The **Kosi-Mechi Link Project** is a major river interlinking initiative in Bihar, designed to divert surplus water from the Kosi River to the Mechi River through a **76-kilometre-long channel**. It aims to reduce flooding and provide irrigation to **2.14 lakh hectares** of agricultural land across districts including Supaul, Saharsa, Madhubani, Khagaria, and Katihar. The project includes components like the Kosi Barrage and Western Kosi Canal. It is part of a broader effort to manage floodwaters, enhance water distribution, and improve agricultural productivity in flood-prone areas of Bihar.

## WHY IN NEWS?

The Union Jal Shakti Minister CR Patil conducted an aerial survey of the Kosi-Mechi Link Project to review its progress ahead of Prime Minister Narendra Modis visit to Purnia.

**Kudremukh Peak**

Kudremukh Peak, located in the Chikmagalur district of Karnataka, is part of the Western Ghats mountain range and rises to an elevation of approximately 1,630 meters. It is



known for its rich biodiversity and is a hotspot for endemic species, including rare plants like *Impatiens selvasinghii*. The peak is part of a trekking route that attracts tourists and nature enthusiasts. Kudremukh was formerly a mining area but has been converted into a protected region to conserve its unique flora and fauna. The area's ecosystem is sensitive to human activity, especially from increasing tourism.

#### WHY IN NEWS?

Kudremukh Peak is in the spotlight due to the discovery of a new plant species along its trekking path, raising awareness about the environmental impact of tourism in the region.

### **Kurichiya and Kattunaikka Tribes**

The Kurichiya and Kattunaikka are indigenous tribal communities native to the Wayanad region of Kerala. Traditionally forest dwellers, they have extensive knowledge of local flora and fauna. Both communities have been integral to recent forest restoration efforts, trained as ecological stewards to manage invasive species like *Senna spectabilis*. Their involvement goes beyond labor, encompassing monitoring, seedling destruction, and biodiversity protection. The Kurichiya are known for their ancient martial traditions, while the Kattunaikka have a deep connection to forest-based livelihoods. Their participation in the Wayanad model represents a blend of traditional ecological knowledge and modern conservation methods.

#### WHY IN NEWS?

Kurichiya and Kattunaikka youth are key participants in Kerala's first science-based community eradication of *Senna spectabilis*, helping restore the Wayanad forests.

### **Kyasanur Forest Disease**

Kyasanur Forest Disease (KFD) is a **tick-borne viral haemorrhagic fever** endemic to South India, caused by the Kyasanur Forest Disease virus (KFDV), a member of the Flavivirus family. It was first identified in 1957 in the Kyasanur forest region of Karnataka. The disease affects monkeys and humans, with symptoms including fever, headache, muscle pain, and bleeding. Transmission occurs primarily through bites from infected ticks of the genus *Haemaphysalis*. KFD outbreaks are seasonal, peaking during dry months. Vaccines exist but require periodic boosters. The disease poses ecological and public health challenges due to its zoonotic nature and impact on wildlife.

#### WHY IN NEWS?

Authorities are investigating the possibility of a KFD outbreak after unexplained deaths of macaques near Palode, prompting toxicology tests and sample analysis at high-security labs.

### **Mahendragiri Hills**

The **Mahendragiri Hills** are located in the Gajapati district of Odisha, rising over **1,500 metres above sea level**. Declared a **Biodiversity Heritage Site in 2022**, they encompass **4,250 hectares** of protected forest, including Idongiri and Mahendra reserve forests. The hills support **1,348 plant species** and **388 animal species**, many endemic and threatened. Indigenous Saora and Kondh tribes inhabit the area. The site hosts ancient



**Panchpandava temples** and attracts pilgrims. Despite ecological significance, development projects threaten the fragile ecosystem. The Wildlife Institute of India recommended biosphere reserve status in the 1980s, but it remains ungranted.

#### WHY IN NEWS?

Environmentalists warn that large-scale construction and tourism projects in Mahendragiri threaten its fragile ecosystem and biodiversity, despite its protected status and cultural significance.

### **Makhana**

Makhana, also known as fox nuts or *Euryale ferox*, is an aquatic crop primarily cultivated in Bihar, which accounts for about **90% of India's total production**. It is grown in water bodies like ponds and lakes in districts such as Madhubani, Darbhanga, and Purnea. Makhana seeds are harvested, dried, and popped like popcorn to produce edible snacks rich in protein and low in fat. The crop has medicinal uses in Ayurveda, including anti-inflammatory and antioxidant properties. The newly established **National Makhana Board** aims to promote production, technology, processing, market expansion, and exports, boosting the livelihoods of farmers in the region.

#### WHY IN NEWS?

The Prime Minister announced the formation of the National Makhana Board to promote production, technology, and market development for makhana farmers in Bihar, enhancing the crop's economic impact.

### **Melioidosis**

Melioidosis is an infectious disease caused by the bacterium **Burkholderia pseudomallei**, commonly found in soil and water in tropical regions. It can infect humans through skin wounds, inhalation, or ingestion. Symptoms range from localized abscesses to severe pneumonia and septicemia. Early diagnosis is critical as untreated melioidosis has a high fatality rate. The bacterium is intrinsically resistant to many antibiotics, requiring prolonged treatment with specific drugs like ceftazidime or meropenem. The disease is endemic in Southeast Asia and Northern Australia but is underreported globally. Environmental factors, such as heavy rainfall and soil disturbance, increase infection risk.

#### WHY IN NEWS?

Melioidosis caused 29 deaths in Turakapalem village near Guntur, Andhra Pradesh, leading to a public health emergency declaration and extensive medical intervention.

### **Microplastics in Human Placenta**

Microplastics are plastic particles smaller than 5 millimeters. A 2021 study published in Environment International reported the presence of microplastics in the human placenta, marking the first evidence of such infiltration. Microplastics can enter the human body through ingestion of contaminated food or water and accumulate in tissues. These particles may cause health issues including inflammation, hypothyroidism, and respiratory problems. Plastics degrade into microplastics in landfills and the environment, contaminating soil, water, and food chains. Microplastics also disrupt microbial



ecosystems, affecting broader environmental stability.

#### WHY IN NEWS?

The discovery of microplastics in human placenta is cited to emphasize the health risks posed by the continued use of single-use plastics in Karnataka and beyond.

### Mini Cloudbursts

Mini cloudbursts are defined as rainfall events delivering **approximately 5 cm of rain per hour**, which is less than the strict cloudburst threshold of 10 cm per hour over 20-30 square kilometers. These events have been observed to be increasing in frequency in India since at least 2018, based on studies from the Indian Institute of Tropical Meteorology, Pune. Mini cloudbursts can cause localized flooding and landslides despite being smaller in scale than full cloudbursts. Monitoring is difficult due to limited meteorological station coverage in many regions, and forecasting remains challenging even with satellite data.

#### WHY IN NEWS?

The India Meteorological Department noted a rise in mini cloudbursts during the 2025 monsoon, including a recent event in Chennai, denoting challenges in forecasting and disaster preparedness.

### Mission LiFE

Mission LiFE (**Lifestyle for Environment**) is a global environmental movement launched by PM Narendra Modi at COP26 in 2021. It promotes individual and community behavioral changes to conserve natural resources and live in harmony with nature. The mission draws from India's cultural heritage and encourages sustainable lifestyle choices. Mission LiFE aims to mobilize mass participation worldwide to address climate change through eco-friendly practices and conservation efforts, linking personal habits to global environmental impact.

#### WHY IN NEWS?

Mission LiFE is referenced as an aligned initiative supporting sustainable agricultural practices and climate change adaptation alongside the Clean Plant Programme in India's 2025 horticulture strategy.

### Mission Mausam

Mission Mausam is an initiative by the Indian Ministry of Earth Sciences aimed at improving weather forecasting and understanding the Indian Ocean's climate impact. It integrates atmospheric, oceanic, and climatic data to enhance monsoon prediction accuracy. The project includes installing advanced radars, buoys, and satellites to monitor weather patterns. It also focuses on historical and cultural maritime data to study long-term climate trends. Mission Mausam collaborates with neighboring countries for regional climate resilience. The program's data aids in disaster management, particularly in flood and cyclone-prone areas, improving early warning systems and agricultural planning in India and surrounding regions.

#### WHY IN NEWS?

The India Meteorological Department announced plans to install four additional radars



under Mission Mausam in Jammu and Kashmir to improve weather forecasts and early warnings following unprecedented rainfall and floods.

### **Mountain Pass Mine**

Mountain Pass is the only active rare earth mine in the United States, located in California. It primarily extracts neodymium and praseodymium, two critical rare earth elements used in magnets for electric vehicles and defense technologies. While it produces raw minerals, the mine depends heavily on China for downstream processing and magnet manufacturing. The US Department of Defense invested \$400 million in MP Materials, the mine's operator, to establish a domestic magnet manufacturing facility to reduce reliance on Chinese supply chains. Mountain Pass symbolizes US efforts to regain strategic autonomy in rare earth production amid China's global dominance.

#### WHY IN NEWS?

Mountain Pass is central to US initiatives in 2025 to build domestic rare earth supply chains and mitigate dependence on China, backed by Pentagon investments.

### **Nanjarayan Bird Sanctuary**

The Nanjarayan Bird Sanctuary is located near Tirupur city in Tamil Nadu. It hosts a variety of migratory and resident bird species, with 192 species documented as of 2025. The sanctuary features an inland water body that serves as a habitat for both common and rare birds. It is notable for attracting species typically found in coastal or Arctic regions, such as the Red-necked Phalarope. The sanctuary supports avian biodiversity through seasonal migrations and provides opportunities for birdwatching and ecological research. It is maintained and monitored by local nature societies and forest officials.

#### WHY IN NEWS?

The sanctuary was in the news for the first-ever sighting of the rare Red-necked Phalarope, marking its 192nd documented bird species and denoting its ecological significance.

### **National Action Plan for Vulture Conservation (2016-25)**

Indias **National Action Plan for Vulture Conservation (NAPVC)** was launched in 2016 to address the drastic decline in vulture populations caused mainly by diclofenac poisoning. The plan targets habitat protection, captive breeding, and safe veterinary drug use. It integrates conservation with public health by recognizing vultures role in carcass disposal and disease control. The plans completion in 2025 marks a transition point to embed vulture conservation within broader pandemic preparedness frameworks. It includes strategies for community involvement, research, and cross-sector coordination under the One Health approach.

#### WHY IN NEWS?

The NAPVC is nearing completion, prompting discussions on expanding conservation efforts to enhance pandemic resilience through integrated health and biodiversity policies.



### **National Ambient Noise Monitoring Network (NANMN)**

The **National Ambient Noise Monitoring Network (NANMN)** was launched by India's Central Pollution Control Board in 2011 to provide real-time urban noise data. It uses sensors mounted typically 25 to 30 feet high, which violates the 2015 CPCB guidelines recommending lower placements for accuracy. NANMN's data is scattered across multiple dashboards but remains underutilized for enforcement. The network faces challenges such as fragmented institutional responsibility, lack of accountability, and political inertia. Despite its decade-long existence, NANMN functions more as a passive repository than an active regulatory tool, limiting its impact on noise pollution control in Indian cities.

#### WHY IN NEWS?

NANMN is brought into light for its underperformance and lack of enforcement utility amid rising urban noise pollution in India, as discussed in 2025 reports on public health and environmental governance failures.

### **National Bureau of Fish Genetic Resources (NBFGR)**

The NBFGR is an Government of India research institute under the Indian Council of Agricultural Research, specializing in fish genetic resource conservation and management. It operates regional centers, including one in Kochi, focusing on biodiversity cataloging, species identification, and sustainable fisheries. The bureau has discovered **16 new species** from the Indian coast, contributing to marine biodiversity knowledge. It employs modern techniques such as morphological analysis, vertebral counts, and mitochondrial DNA sequencing for species validation. NBFGR's research supports sustainable marine resource management and conservation policy formulation in India.

#### WHY IN NEWS?

NBFGR researchers from Kochi identified the new snake eel species *Apterichtus kanniyakumari*, demonstrating their role in expanding India's marine biodiversity catalog and promoting sustainable marine ecosystem management.

### **National Centre for Sustainable Coastal Management (NCSCM)**

The National Centre for Sustainable Coastal Management (NCSCM) is an autonomous institute under the Ministry of Environment, Forest and Climate Change. It specializes in coastal mapping, monitoring, and sustainable management of coastal ecosystems. NCSCM uses advanced geospatial technologies to map coastal land parcels and mangrove cover, aiding projects like TN-SHORE. Its data supports ground-truthing and decision-making for ecosystem restoration. NCSCM also conducts research on coastal vulnerability, climate change impacts, and policy formulation to promote sustainable coastal development in India.

#### WHY IN NEWS?

NCSCM provided coastline mapping data to identify land parcels for mangrove restoration under the Tamil Nadu Coastal Restoration Mission approved in September 2025.

### **National Institute of Solar Energy (NISE)**

The **National Institute of Solar Energy (NISE)** is an autonomous institute under India's



Ministry of New and Renewable Energy (MNRE). Established in 2013, it serves as the national R&D and training hub for solar energy technologies. NISE develops standards, testing facilities, and capacity-building programs for solar PV, thermal, and hybrid systems. It plays a key role in policy support and implementing Indias solar mission. NISE uses advanced GIS and satellite data for solar potential assessments. It also hosts international training programs, including women-focused initiatives, to encourage global cooperation and promote skilled workforce development in solar manufacturing.

#### WHY IN NEWS?

NISE released the updated Solar PV Potential Assessment Report and launched Indias first training program on solar cell and module manufacturing in 2025.

### **Nicobar Megapodes**

The **Nicobar megapodes** are a group of rare ground-dwelling birds endemic to the Nicobar Islands. Unlike most birds, megapodes incubate their eggs using environmental heat sources like volcanic soil, sun-warmed sand, or decomposing vegetation. They build large nesting mounds that can reach several meters in diameter. These birds are important for maintaining island biodiversity and are indicators of ecological health. The Nicobar megapodes are threatened by habitat loss due to development and invasive species. Conservation efforts include habitat protection and monitoring, with recent plans integrating their preservation into large infrastructure projects on Great Nicobar Island.

#### WHY IN NEWS?

Conservation plans for Nicobar megapodes are part of the environmental mitigation measures in the Great Nicobar Island Development Project.

### **Numaligarh Biorefinery**

The Numaligarh biorefinery is the **first bamboo-based biorefinery in India**, located in Assam. It produces 49,000 tonnes per annum of bioethanol, 11,000 TPA of acetic acid, and 19,000 TPA of furfural from bamboo feedstock. The project integrates advanced biorefinery processes to convert bamboo, a fast-growing and abundant biomass resource in Northeast India, into biofuels and chemicals. It supports the Indian Governments Ethanol Blending Programme and aims to reduce fossil fuel dependence. The facility is a flagship model for sustainable bioenergy and chemical production using non-food biomass.

#### WHY IN NEWS?

Engineers India Limited announced the mechanical completion of this pioneering bamboo-based biorefinery project at Numaligarh, Assam.

### **Parivesh Portal**

The Parivesh Portal is an online platform developed by the Ministry of Environment, Forest and Climate Change, Government of India, to streamline environmental clearances. It enables applicants to submit proposals for forest and environmental clearances digitally, facilitating transparency and faster processing. The portal integrates various regulatory requirements under the Forest (Conservation) Act, 1980, and the Environment Protection



Act, 1986. It tracks application status, allows document uploads, and supports inter-departmental coordination. Use of Parivesh is mandatory for projects involving forest land diversion or environmental impact, ensuring compliance with legal frameworks.

#### WHY IN NEWS?

Authorities have instructed project proponents to file applications for forest clearances on the Parivesh portal before proceeding with road construction within the tiger reserve.

### Peak Water Point

The **peak water point** refers to the moment when a glacier's annual meltwater runoff reaches its maximum before declining due to glacier shrinkage. After this peak, the glacier produces less meltwater each year as its mass diminishes. This phenomenon is in small-glacier regions where water supply initially increases but then decreases, impacting downstream water availability. Peak water is important concept in understanding long-term water resource sustainability in glacier-fed river basins. It affects hydrology, ecology, and human water use, especially in mountainous and polar regions dependent on glacier meltwater.

#### WHY IN NEWS?

2024 marked the third consecutive year of widespread glacier loss, with many small-glacier regions nearing or passing their peak water points, signaling shifts in future water availability.

### Periyar Tiger Reserve

The **Periyar Tiger Reserve (PTR)** is located in Thekkady, Kerala, and was established in 1978. It covers approximately **925 square kilometers** and is known for its rich biodiversity, including the Bengal tiger, Asian elephant, and Indian bison. PTR is centered around the Periyar Lake, an artificial reservoir created in 1895. The reserve is a popular ecotourism destination, offering boat safaris and trekking. It is managed by the Kerala Forest Department and is part of the Nilgiri Biosphere Reserve. Conservation efforts focus on habitat protection and anti-poaching measures to preserve its endangered species.

#### WHY IN NEWS?

PTR is under scrutiny due to financial irregularities involving the unauthorized diversion of tourism income into a Park Welfare Fund without government approval.

### Pilibhit Tiger Reserve

Pilibhit Tiger Reserve is located in Uttar Pradesh, covering an area of approximately **602 square kilometers**. It was declared a tiger reserve in 2008 and is part of the Terai Arc Landscape, a critical biodiversity hotspot. The reserve supports a variety of fauna including Bengal tigers, leopards, and several rare species like the Red Coral Kukri snake. It features dense forests, grasslands, and wetlands, providing a diverse habitat. The reserve plays a vital role in **tiger conservation** and is managed by the Uttar Pradesh Forest Department.

#### WHY IN NEWS?

The recent sighting and release of the rare Red Coral Kukri snake occurred near this reserve, denoting its ecological significance.



## PM10 Particulate Matter

PM10 refers to airborne particulate matter with a diameter of 10 micrometers or less. These particles can penetrate the respiratory system, causing health issues like asthma and cardiovascular diseases. PM10 sources include dust, vehicle emissions, construction activities, and industrial processes. The National Ambient Air Quality Standards (NAAQS) in India set the acceptable annual average PM10 concentration limit at **60 µg/m<sup>3</sup>**. Many Indian cities exceed this limit, with Delhi reporting levels as high as **203 µg/m<sup>3</sup>**. Reduction of PM10 is a key target under NCAP but carries lower ranking weight in Swachh Vayu Survekshan.

### WHY IN NEWS?

PM10 levels increased in Indore in 2024-25 despite its top ranking in air quality action, while some cities with lower PM10 levels ranked lower, illustrating the complex evaluation metrics.

## PM2.5 Particulate Matter

PM2.5 refers to atmospheric particulate matter smaller than **2.5 micrometers** in diameter, capable of penetrating deep into the lungs and bloodstream. These particles originate from combustion sources like vehicles, industry, biomass burning, and dust. PM2.5 is a key indicator of air pollution severity and has been linked to respiratory and cardiovascular diseases. The WHO's safe limit for PM2.5 is **5 µg/m<sup>3</sup>**, but many regions, especially in northern India, exceed this by large margins. PM2.5's small size allows it to evade most air filters and remain airborne for long periods, increasing exposure risk.

### WHY IN NEWS?

The report marks that all Indians live in areas exceeding the WHO PM2.5 safe limit, with northern India being the most polluted globally.

## Rabi Crop

The **rabi crop** is a winter-sown agricultural crop grown in India, typically sown in October-November and harvested in March-April. Major rabi crops include wheat, barley, peas, and mustard. The cropping season depends on the retreat of the southwest monsoon and cooler temperatures. Preparation for rabi sowing often involves clearing fields of the previous crops residue, sometimes through stubble burning. Rabi crops are crucial for India's food security and rural economy, especially in northern states. The timing and success of rabi crops are sensitive to climatic conditions and agricultural practices in the preceding months.

### WHY IN NEWS?

Rabi crop preparation is linked to stubble burning, a major source of pollution, leading to legal and regulatory scrutiny amid worsening air quality in North India.

## Radioactive Rhino Horn

Radioactive rhino horn involves injecting harmless radioactive isotopes into rhino horns to aid in tracking and detecting illegal trafficking. This technique helps customs and law enforcement identify smuggled horns across borders. The isotopes used emit detectable



radiation without harming the animal or the horns physical properties. This method complements other anti-poaching measures such as microchipping, GPS tracking, and horn removal. It was developed to address the high black-market value of rhino horn, which drives poaching. Radioactive tagging does not prevent poaching but aims to disrupt illegal trade networks by increasing the risk of detection.

#### WHY IN NEWS?

South Africa and conservation groups have adopted radioactive isotope injections in rhino horns to combat illegal trafficking and improve law enforcements ability to track smuggled horns.

### **Rainforest Alliance Certification (Coffee)**

Rainforest Alliance Certification is a sustainability standard for agricultural products, including coffee. It requires adherence to environmental, social, and economic criteria to promote biodiversity, reduce chemical use, conserve water, and improve livelihoods. Certified plantations implement scientific estate management, soil protection, and drainage systems to prevent erosion and enhance soil fertility. The certification encourages people-first practices and sustainable agriculture, ensuring minimal disruption during adverse weather. It is recognized globally and helps farms access premium markets by demonstrating commitment to responsible farming.

#### WHY IN NEWS?

Kelachandra Coffee, a Rainforest Alliance Certified plantation in Karnataka, reported minimal disruption during heavy 2025 monsoon rains due to sustainable practices.

### **Ramgarh Vishdhari Tiger Reserve**

Ramgarh Vishdhari Tiger Reserve (RVTR) is located in Rajasthan, and is one of the state's prominent tiger reserves. It covers an area of approximately 252 square kilometers and was declared a tiger reserve in 2019. The reserve hosts a variety of habitats, including dry deciduous forests and wetlands, supporting apex predators like tigers and leopards. RVTR is notable for its diversity of small wild cat species, including Jungle Cat, Rusty-spotted Cat, Asiatic Wildcat, Caracal, and now Fishing Cat. The reserve plays important role in regional biodiversity conservation and ecological balance.

#### WHY IN NEWS?

RVTR gained attention after a Fishing Cat was recorded on camera for the first time, increasing its small cat species count to five and denoting the reserve's ecological importance.

### **Ramsar Wetland City Accreditation**

The **Ramsar Wetland City Accreditation** is a distinction awarded by the Ramsar Convention to urban centers that demonstrate outstanding efforts in wetland conservation and sustainable management. It emphasizes biodiversity protection, flood control, and pollution absorption. Cities must engage communities and integrate wetlands into urban planning to qualify. The program began in 2018 to show the importance of wetlands in urban environments. Accreditation lasts for five years and



requires periodic review. Only a select number of cities worldwide have received this recognition, promoting global awareness of urban wetland ecosystems.

#### WHY IN NEWS?

Udaipur was awarded the Ramsar Wetland City Accreditation in 2025 for its exemplary urban wetland conservation and management efforts, joining a global group of sustainably managed wetland cities.

### **Run-of-the-River Hydroelectricity**

Run-of-the-river hydroelectric projects generate power without large reservoirs by using the natural flow of rivers. These projects typically divert river water through tunnels or canals to turbines before returning it downstream. They have a smaller environmental footprint compared to large dams but are highly dependent on river flow, which can fluctuate seasonally. The Dhauliganga project uses this method with four 70 MW units. Such projects are vulnerable to monsoon rains, landslides, and glacial bursts, which can disrupt water flow or damage infrastructure, as seen in the 2013 and 2021 incidents in Uttarakhand.

#### WHY IN NEWS?

The Dhauliganga hydroelectric project, a run-of-the-river facility, was impacted by monsoon-triggered landslides that trapped workers and caused operational challenges.

### **Rusty-spotted Cat (*Prionailurus rubiginosus*)**

The Rusty-spotted Cat is one of the smallest wild cat species, native to India and Sri Lanka. It weighs between 0.9 to 1.6 kg and measures about 35 to 48 cm in body length. This nocturnal carnivore prefers dense scrub and forest habitats and primarily hunts small mammals, birds, and insects. The species is listed as Near Threatened on the IUCN Red List due to habitat fragmentation and human-wildlife conflict. It is known for its distinctive rusty-colored spots and agility. The Rusty-spotted Cat is rarely observed in the wild because of its secretive behavior and small size.

#### WHY IN NEWS?

Rusty-spotted Cat is among the small cat species already documented in Ramgarh Vishdhari Tiger Reserve, contributing to the reserves noted carnivore diversity.

### **Sahyadri Tiger Reserve**

The **Sahyadri Tiger Reserve** was notified in 2010, spanning 1,165 sq km across Kolhapur, Sangli, Satara, and Ratnagiri districts in Maharashtra. It combines Chandoli National Park and Koyna Wildlife Sanctuary, located in the northern Western Ghats. Despite rich biodiversity and dense forest cover, the reserve has lacked a breeding tiger population and mainly supports transient tigers. It forms a critical watershed for the Koyna and Warna rivers, essential for local livelihoods. The reserve is strategically important for maintaining habitat connectivity between tiger populations in Goa, Karnataka, and the northern Western Ghats.

#### WHY IN NEWS?

The reserve is the site of a tiger translocation project to revive and establish a breeding tiger population in the northern Western Ghats.



## Sendai Framework for Disaster Risk Reduction (SFDRR)

The **Sendai Framework for Disaster Risk Reduction (2015-2030)** is a global, non-binding agreement endorsed by UN member states to reduce disaster risks. It focuses on four priority areas – understanding disaster risk, strengthening disaster risk governance, investing in risk reduction, and enhancing disaster preparedness and response. The framework emphasizes multi-sectoral cooperation, the use of science and technology, and inclusive community participation. It is the successor to the Hyogo Framework and aims to substantially reduce disaster losses in lives, livelihoods, and health. SFDRR explicitly encourages integrating disaster risk reduction into sustainable development policies and planning.

### WHY IN NEWS?

The article marks the need to align India's road safety strategies with the SFDRR to classify road accidents as disasters and improve disaster risk reduction efforts.

## Shola Forests

Shola forests are high-altitude tropical montane forests found mainly in the Western Ghats of South India. Characterized by stunted evergreen trees and grassland mosaics, these forests occur above 1500 meters elevation and have a unique microclimate with high humidity and low temperatures. Shola forests support many endemic species of flora and fauna and act as important water catchment areas. They are biodiversity hotspots but face threats from deforestation and climate change. The term "shola" is derived from Tamil and Malayalam languages, meaning "thicket" or "dense forest."

### WHY IN NEWS?

*Dioscorea balakrishnanii* was discovered exclusively in the shola forests of Wayanad, emphasizing the ecological importance and biodiversity richness of these montane forests.

## Sowa Rigpa Medicine

Sowa Rigpa, also known as the Amchi system, is a traditional Tibetan herbal medicine practiced in the Himalayas. It uses 47 medicinal plants found in the Cold Desert Biosphere Reserve. The system integrates Buddhist monastic traditions and community knowledge to sustainably use alpine resources. Sowa Rigpa emphasizes natural remedies for treating diseases and maintaining health, relying on local herbs and minerals. It is recognized by the Government of India and UNESCO for its cultural and medicinal significance.

### WHY IN NEWS?

The Sowa Rigpa system is brought into light in the Cold Desert Biosphere Reserve for its use of endemic medicinal plants, contributing to the reserves ecological and cultural value.

## Special Investigation Team (SIT) on Tiger Poaching

The **Special Investigation Team (SIT)** on tiger poaching is a state-level multi-agency task force constituted to investigate organised poaching networks. It includes police, forest officials, and forensic experts. The SIT collects intelligence, conducts raids, and prosecutes



offenders involved in wildlife crimes. It tracks poaching syndicates, their financial transactions, and smuggling routes. The SIT uses forensic analysis of seized tiger parts and weapons to link poachers to crimes. It reports to the state government and recommends enhanced security measures for tiger reserves and adjoining forests. The SIT often collaborates with central agencies and neighbouring states to combat cross-border wildlife trafficking.

#### WHY IN NEWS?

The SIT report from Maharashtra revealed a sprawling network of poachers and smugglers trafficking tiger parts to Myanmar, prompting calls for a CBI investigation.

### **Srivilliputhur-Meghamalai Tiger Reserve**

The **Srivilliputhur-Meghamalai Tiger Reserve (SMTR)** is a protected area in the Western Ghats, spanning parts of Tamil Nadu. It connects the Periyar Tiger Reserve in Kerala to Tamil Nadu's forests, forming important wildlife corridor. The reserve features steep hills and dense forests, supporting endemic and endangered species like tigers, elephants, and leopards. Declared a tiger reserve recently, SMTR aims to conserve biodiversity and maintain ecological connectivity. The regions flora includes rare medicinal plants. The reserve is vulnerable to habitat fragmentation due to infrastructure developments and unauthorized road construction, threatening its ecological integrity.

#### WHY IN NEWS?

Three unauthorized roads were constructed or repaired within SMTR without forest clearances, raising environmental concerns and threatening wildlife corridors.

### **Stratospheric Sudden Warming**

Stratospheric Sudden Warming (SSW) is a rapid temperature increase in the polar stratosphere that disrupts the Arctic jet stream and weakens the Polar Vortex. This causes cold Arctic air to move southward, warming the Arctic region itself. SSW events affect mid-latitude weather patterns, leading to extreme cold outbreaks in some areas and heatwaves in others. Tropospheric Rossby Waves propagate upward during SSW, breaking down the jet stream and causing persistent high-pressure ridges and low-pressure troughs. This phenomenon explains simultaneous heatwaves in Europe and North America and heavy rains in South Asia.

#### WHY IN NEWS?

SSW was cited to explain the unusual weather extremes of 2025, including heatwaves in Europe and wild monsoon rains in India.

### **Striped Dolphins**

Striped dolphins (*Stenella coeruleoalba*) are medium-sized cetaceans characterized by distinctive dark and light stripes along their bodies. They inhabit temperate and tropical waters worldwide but are uncommon in the eastern coast of India, particularly Andhra Pradesh. These dolphins prefer deeper offshore waters and often travel in pods. Their diet mainly consists of small fish and squid. Unlike the more frequently seen humpback and spinner dolphins in the region, striped dolphins are rarely documented near



Visakhapatnam. Their presence indicates the ecological diversity of marine life in the Bay of Bengal, though population data remains scarce due to limited regional research.

#### WHY IN NEWS?

A pod of striped dolphins was recently spotted off the coast of Visakhapatnam, Andhra Pradesh, marking an uncommon sighting for the area and denoting gaps in marine mammal data collection along the east coast of India.

### Stubble Burning

**Stubble burning** is the practice of setting fire to crop residue after harvest, particularly in Punjab, Haryana, Uttar Pradesh, and Delhi NCR. It occurs mainly in October and November post-monsoon and contributes to air pollution by releasing particulate matter and toxic gases. The practice is linked to preparing fields for the rabi crop season. Despite known environmental harm, many farmers continue due to economic constraints and lack of affordable alternatives. Efforts to curb stubble burning include government incentives and legal actions, but enforcement remains weak, partly due to the economic vulnerability of farmers and limited inter-state cooperation.

#### WHY IN NEWS?

The Supreme Court of India is considering prosecuting farmers who engage in stubble burning, intensifying the debate on balancing environmental concerns with farmers' livelihoods.

### Subansiri River Basin Hydroelectric Cascade

The Subansiri River basin in Arunachal Pradesh hosts a planned cascade of hydroelectric projects including **Niare, Naba, Nalo, Dengser, Upper Subansiri, Lower Subansiri**, and Oju. These projects aim to harness the rivers hydropower potential in a series of dams and power plants, cumulatively contributing several thousand megawatts. The basins hydrology and ecology are complex due to its location in the Eastern Himalayas, involving glacial-fed flows and sensitive forest ecosystems. Cumulative Impact Assessment (CIA) and Carrying Capacity Studies (CCS) were conducted in 2014 but are now considered outdated for current environmental clearances.

#### WHY IN NEWS?

The environmental clearance for the Oju project sparked debate over the adequacy of the 2014 cumulative impact and carrying capacity studies for the entire Subansiri basin.

### Subtropical Westerly Jet Stream

The subtropical westerly jet stream is a narrow band of strong winds in the upper atmosphere around **30° latitude** in both hemispheres. It influences weather patterns by steering cyclones and disturbances. Its position and strength vary seasonally, affecting monsoon dynamics in South Asia. A **northward shift** of this jet stream can bring increased moisture and rainfall to the Himalayas, disrupting normal weather cycles. This jet stream is linked to broader climate phenomena including Arctic warming and West Asian temperature changes, which modulate its path and intensity.

#### WHY IN NEWS?

The northward shift of the subtropical westerly jet stream in 2025 caused increased



rainfall and extreme weather in the Himalayas, contributing to flash floods and landslides during the monsoon season.

### **Sujalam Bharat Summit**

The **Sujalam Bharat Summit** is a flagship initiative under the Ministry of Jal Shakti focused on water management in India. It aims to gather grassroots feedback on the implementation and impact of water-related policies. The summit involves multiple stakeholders, including gram panchayats, Water User Associations, and state representatives from diverse regions such as Leh, Tamil Nadu, Arunachal Pradesh, and Odisha. It promotes technologies like micro-irrigation, precision agriculture, and AI-based water resource planning. The summit is coordinated by NITI Aayog and includes sectoral thematic conferences to integrate field-level vital information about national water policy formulation.

#### WHY IN NEWS?

The Sujalam Bharat Summit was recently held to discuss “Technology for Efficient Water Management,” featuring virtual workshops and presentations from various states and grassroots workers to improve water management strategies nationwide.

### **Surface Ozone Pollution**

Surface ozone is a harmful air pollutant formed by chemical reactions between nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) under sunlight. Unlike stratospheric ozone, which protects life by blocking UV rays, surface ozone damages respiratory health, crops, and ecosystems. It is a major component of urban smog and is exacerbated by heatwaves and industrial emissions. In India, surface ozone pollution is rising due to rapid urbanization, increased vehicle use, and industrial activity, posing serious public health and food security risks. Controlling it requires reducing precursor emissions, improving monitoring, and adopting cleaner technologies.

#### WHY IN NEWS?

Surface ozone pollution is emerging as a critical environmental and health issue in India amid rising heatwaves and urban growth, discussed during World Ozone Day 2025.

### **Sustainable Alternative Towards Affordable Transportation (SATAT)**

The Sustainable Alternative Towards Affordable Transportation (SATAT) initiative promotes compressed biogas (CBG) production in India. Launched by the Ministry of Petroleum and Natural Gas, it aims to roll out over 300 CBG plants by 2028. The program targets a 5% blending mandate of CBG with natural gas by that year. CBG is produced from agricultural, industrial, and municipal waste, providing a renewable, cleaner fuel alternative. SATAT supports waste management, rural employment, and energy diversification. It contributes to India's energy transition goals, reducing dependence on fossil fuels while benefiting farmers and small businesses.

#### WHY IN NEWS?

SATAT is referenced as part of India's energy transition efforts, denoting progress in renewable fuel blending and sustainable transportation to meet climate and energy



security objectives.

### **Sustainable Development Goal 11 (SDG 11)**

**SDG 11** aims to make cities **inclusive, safe, resilient, and sustainable**. It measures progress using four indicators – proportion of urban population living in slums, annual mean concentration of PM 2.5, access to improved piped water, and access to public transport. The goal addresses challenges from unplanned urbanization, social inequalities, and environmental hazards. Achieving universal water coverage is a key target but remains unmet in many Indian cities. SDG 11 is part of the broader 2030 Agenda for Sustainable Development adopted by the United Nations in 2015 to improve urban living conditions globally.

#### WHY IN NEWS?

Indias ranking in the Sustainable Development Report 2025 marks slow progress on SDG 11, especially in water access and slum living conditions, underscoring major urban sustainability challenges.

### **Swachh Vayu Sarvekshan**

Swachh Vayu Sarvekshan is an annual air quality monitoring and ranking exercise conducted by the Government of India. It evaluates cities on parameters including particulate matter levels, implementation of pollution control measures, and public participation in air quality improvement. The survey helps identify pollution hotspots and promotes accountability among urban local bodies. It complements other national initiatives like the National Clean Air Programme (NCAP). The assessment covers both outdoor and indoor air quality indicators, providing a comprehensive overview of urban air health.

#### WHY IN NEWS?

The 2025 Swachh Vayu Sarvekshan Awards ceremony featured recognition for cities excelling in environmental management, including Udaipurs wetland conservation achievements.

### **System of Environmental Economic Accounts (SEEA)**

The **System of Environmental Economic Accounts (SEEA)** is an internationally agreed framework developed by the United Nations for integrating environmental data with economic accounts. It provides standardized methods to measure the interaction between the economy and the environment, such as natural resource use and ecosystem services. The SEEA framework includes modules like Physical Asset Accounts, Extent Accounts, Condition Accounts, and Service Accounts. It enables countries to track changes in natural capital and ecosystem services over time. India adopted SEEA in 2018 for environmental economic accounting, aligning its data with global standards to support sustainable development policies.

#### WHY IN NEWS?

Indias Ministry of Statistics and Programme Implementation released its 8th SEEA-based environmental accounting report focused on forest ecosystems during the 29th CoCSSO



conference in September 2025.

### Taanka

A **taanka** is an ancient traditional rainwater harvesting system primarily found in arid regions of India, especially Rajasthan and parts of Karnataka. It is an underground tank that collects and stores rainwater from rooftops or catchment areas, providing a reliable water source during dry seasons. Taankas help reduce dependence on erratic monsoon rains and groundwater. They are constructed using locally available materials like stone and lime mortar. The design prevents evaporation and contamination, making stored water potable for months. Taankas are crucial for rural water security in drought-prone areas and are increasingly being revived under modern conservation programs.

#### WHY IN NEWS?

Bidar district incorporated taankas as part of its water conservation measures under the Jal Shakti Abhiyan campaign.

### Tipeshwar Tiger Reserve

Tipeshwar Tiger Reserve is located in the Vidarbha region of Maharashtra and is part of the larger Sahyadri Tiger Landscape. It covers approximately **625 square kilometers** and was declared a tiger reserve in 2014. The reserve is noted for its population of tigers, leopards, and various ungulates. It features tropical dry deciduous forests dominated by teak and other hardwood species. The reserve is also important for conserving the endangered Indian giant squirrel. Tipeshwar supports local tribal communities who rely on forest resources under regulated access.

#### WHY IN NEWS?

The young male tiger that traveled 450 km to Yedshi Ramling Ghat Wildlife Sanctuary originated from Tipeshwar Tiger Reserve, emphasizing tiger dispersal patterns in Maharashtra.

### Trans-Fatty Acids (TFAs)

Trans-fatty acids (TFAs) are unsaturated fats with trans-configuration double bonds, found both naturally in some animal products and industrially in hydrogenated oils. TFAs raise harmful LDL cholesterol and lower beneficial HDL cholesterol, increasing risks of heart disease, stroke, and diabetes. Industrial TFAs are created by partial hydrogenation of vegetable oils to improve food texture and shelf life, while natural TFAs occur in dairy and meat. Even small TFA intake raises cardiovascular risk. Many countries have introduced limits or bans on TFAs, with Denmark pioneering regulations in 2004 and India implementing phased reductions.

#### WHY IN NEWS?

TFAs are central to the UN draft resolution on eliminating trans-fats from processed foods, sparking debate among health officials and food industry stakeholders.

### Ultra-Processed Foods (UPFs)

Ultra-Processed Foods (UPFs) are industrial formulations typically high in sugar, salt, fats, and additives, with little whole food content. Examples include chips, sodas, instant



noodles, and packaged snacks. UPFs undergo multiple processing steps and often contain artificial colors, flavors, and preservatives. They are linked to increased risks of obesity, diabetes, and cardiovascular diseases worldwide. Despite rising consumption in India, UPFs contribute a smaller proportion of total calorie intake compared to Western countries. Traditional Indian diets, often high in refined carbohydrates and oils, may pose comparable metabolic risks even without high UPF consumption.

#### WHY IN NEWS?

The article challenges the focus on UPFs as the sole dietary culprit in India's obesity rise, emphasizing that traditional home-cooked meals also contribute to weight gain.

### **Van (Sanrakshan evam Samvardhan) Adhiniyam (VSSA) 1980**

The **Van (Sanrakshan evam Samvardhan) Adhiniyam (VSSA) 1980** is India's primary legislation aimed at forest conservation. It regulates the diversion of forest land for non-forest purposes, requiring prior approval from the central government. The Act applies irrespective of forest ownership or classification, covering all ecologically sensitive lands. It was enacted to prevent deforestation and promote sustainable forest management. The Act empowers authorities to enforce penalties for illegal forest land diversion. It has been the basis for several Supreme Court rulings, including the landmark T.N. Godavarman Thirumulpad case, which expanded its scope to all forested areas in India.

#### WHY IN NEWS?

The Supreme Court recently reiterated the need for all states to define "forest" and identify forest areas under the VSSA 1980, aiming to regulate diversion of ecologically sensitive lands comprehensively.

### **Wandering Glider**

The Wandering Glider (*Pantala flavescens*) is a highly migratory dragonfly species found worldwide, including in Delhi. It is known for its long-distance seasonal migrations, sometimes crossing oceans. The species is identifiable by its yellowish body and broad wings. It dominates sightings in several Delhi biodiversity parks as of 2025. Wandering Gliders breed in temporary water bodies formed by monsoon rains, making them important for mosquito control post-flooding. Their ability to colonize ephemeral habitats allows them to thrive even in changing urban environments and fluctuating water availability.

#### WHY IN NEWS?

Dominated dragonfly sightings in multiple Delhi biodiversity parks during the 2025 post-monsoon odonate survey, reflecting its adaptability and ecological role.

### **Wayanad Model**

The Wayanad model is a community-driven ecological restoration approach involving the Kerala Forest Department, Forest First Samithi, and tribal youth from the Kurichiya and Kattunaikka communities. It focuses on complete uprooting of *Senna spectabilis*, including roots, to prevent regrowth. A lightweight, hand-held uprooting tool designed by marine engineer A Anand facilitates the removal process by enabling untrained workers to



extract entire root balls. The model emphasizes training tribal youth as forest guardians rather than mere laborers. This method has led to the return of 80 native tree species, 15 indigenous grasses, and 184 bird species in the restored areas.

#### WHY IN NEWS?

The Wayanad model is being replicated beyond Kerala, including Karnatakas Nagarhole Tiger Reserve, marking Indias first cross-border Senna eradication initiative.

### **Wildlife (Protection) Act 1972**

The **Wildlife (Protection) Act 1972** is India's primary legislation for wildlife conservation and protection. It established schedules categorizing species based on their protection needs, initially focusing on megafauna like tigers and elephants. The Act prohibits hunting, trade, and exploitation of listed species and provides for the creation of protected areas. Despite its broad scope, the Act historically neglected smaller or less charismatic species, including many reptiles. Amendments and policies now aim to include climate change impacts and habitat fragmentation. It also supports captive breeding programs and community involvement in conservation efforts.

#### WHY IN NEWS?

The Acts evolving framework has enabled the protection and recovery of less charismatic species such as saltwater crocodiles, as shown by recent population growth in the Sundarban Biosphere Reserve.

### **Wildlife Corridors, Great Nicobar**

Eight **wildlife corridors** have been planned along the eastern side of Great Nicobar Island to facilitate safe movement of arboreal animals, snakes, crabs, and crocodiles between forest and seashore. These corridors include viaducts over the north-south arterial road, allowing uninterrupted wildlife passage. The design aims to minimize habitat fragmentation caused by infrastructure development and maintain ecological connectivity. This is part of the Environmental Management Plan (EMP) for the Great Nicobar Island Project, developed with inputs from institutions like the Zoological Survey of India and the Salim Ali Centre for Ornithology and Natural History.

#### WHY IN NEWS?

The wildlife corridors are part of the environmental safeguards integrated into the Great Nicobar Island Project to protect biodiversity amid large-scale development activities.

### **Yaws Disease Elimination**

Yaws is a chronic bacterial infection caused by *Treponema pallidum pertenuis*, primarily affecting skin, bones, and cartilage in children in tropical regions. India was declared Yaws-free in 2016 after sustained surveillance and treatment efforts under its public health programmes. The eradication involved mass drug administration campaigns and improved disease surveillance. Yaws is distinct from syphilis but caused by a related bacterium. It is transmitted through direct skin contact, not sexually. The elimination of Yaws in India marked public health milestone in tropical disease control and demonstrated the effectiveness of integrated disease surveillance and immunisation



programmes.

#### WHY IN NEWS?

Indias Yaws-free status is cited as a success story demonstrating the strength of its vaccine-preventable disease surveillance and elimination strategies, relevant to ongoing immunisation efforts.

#### **Yellow-crested Cockatoo**

The **yellow-crested cockatoo** (*Cacatua sulphurea*) is a critically endangered parrot native to Indonesia and East Timor. Its global wild population is estimated at fewer than **2,000 mature individuals**. The species is known for its distinctive **yellow crest feathers** contrasting with predominantly white plumage. It nests in tree cavities and is threatened by habitat loss due to typhoons, deforestation, and urban development. Illegal pet trade and climate change exacerbate its decline. Conservation efforts include installing artificial nest boxes to replace lost natural nesting sites. The birds range has contracted, disappearing from many islands within its historical distribution.

#### WHY IN NEWS?

Hong Kongs urban population of yellow-crested cockatoos, comprising about 10% of the global wild population, faces habitat loss. Conservationists are installing artificial nests to support their survival amid urban challenges.

#### **Yellow-tailed Ashy Skimmer**

The **Yellow-tailed Ashy Skimmer** (*Potamarcha congener*) is a species of dragonfly native to the northern and northwestern plains of India. It typically inhabits slow-moving or stagnant water bodies such as ponds, lakes, and marshes. The species is characterized by its yellow tail and ashy grey body. It was first recorded in the Yamuna Biodiversity Park during the 2025 survey, marking a new addition to Delhis odonate fauna. This dragonfly plays a role in controlling mosquito populations by preying on them during both larval and adult stages. It is an indicator of healthy wetland ecosystems.

#### WHY IN NEWS?

Newly recorded for the first time in Delhis Yamuna Biodiversity Park during the 2025 post-monsoon odonate survey, expanding the known range of this species in urban biodiversity parks.

#### **Zone of Influence Concept**

The **zone of influence** refers to the area surrounding a wetland or ecological system within which activities can affect its hydrology and ecological functions. For Pallikaranai Marshland, the Tamil Nadu State Wetland Authority (TNSWA) has provisionally marked a **one-kilometer buffer zone** as its zone of influence based on topographical and hydrological modeling. This zone helps regulate land use and construction to protect the wetlands natural water inflows and biodiversity. The zone of influence is formalized through an Integrated Management Plan (IMP), which coordinates multiple agencies for sustainable wetland management. It is a key tool in environmental governance and urban planning.



## WHY IN NEWS?

The NGT halted construction pending completion of the IMP that will define and notify the official zone of influence around Pallikaranai Marshland.

**History (India / World) & Culture****Andhra Mahasabha**

The Andhra Mahasabha (AMS) originated as the Andhra Jan Sangham in the 1920s, evolving into a socio-political movement advocating for Telugu linguistic rights and peasant welfare in Hyderabad state. By the 1940s, the AMS had become influenced by the Communist Party of India, mobilizing peasants and small landholders against the Nizams exploitative feudal system. The AMS supported accession to India and worked closely with the Hyderabad State Congress. It played a major role in the internal revolt that challenged the Nizams rule before the annexation by India.

## WHY IN NEWS?

The Andhra Mahasabha was a key organization in the resistance against the Nizams rule during the events leading to Operation Polo.

**Apatani Nose Plugs (Yaping Hullo)**

The **yaping hullo** are large wooden nose plugs traditionally worn by Apatani women in Arunachal Pradesh. Made from forest wood, the plugs are carefully cleaned to prevent infection before use. Despite their size, the plugs allow normal nasal breathing. Introduced as a protective measure against abduction by invaders, they later became a cultural symbol of beauty and tribal identity. The practice is now rare and mostly observed among older women, as it was banned in the early 1970s due to social and employment challenges in urban areas. The nose plugs are unique to the Apatani tribe.

## WHY IN NEWS?

The Apatani nose plugs are brought into light as a fading cultural tradition in the Ziro Valley, with only older women continuing to wear them after the practice was banned in the 1970s.

**Babu Jagat Singh**

Babu Jagat Singh belonged to the family of the erstwhile Benares ruler Chait Singh. In 1787-88, he ordered excavations at Sarnath, which led to the discovery of its archaeological importance, predating British involvement in 1798. His digging unearthed a casket containing Buddhist relics, parts of which are now held by the Asiatic Society in Kolkata. Earlier plaques wrongly described him as a “destroyer” of the Dharmarajika Stupa, but recent corrections credit him for preserving and revealing the site. His family continues to advocate for recognition of his role in Sarnath's history and preservation.

## WHY IN NEWS?

The Archaeological Survey of India is updating plaques at Sarnath to credit Babu Jagat Singh, not British officers, for first exposing the site's archaeological significance, following a proposal by his descendants.

**Badagas**

The **Badagas** are an indigenous community primarily inhabiting the Nilgiris district in



Tamil Nadu. They speak the Badaga language, which is closely related to Kannada. Traditionally, they are agriculturists and have been dominant in plantation farming, especially tea cultivation, since the colonial era. The Badagas have a unique social structure with clan-based divisions and practice customs distinct from neighboring tribes. Their festivals include the Hethai festival, dedicated to their clan deity. Historically, they played important role in the economic development of the Nilgiris through their involvement in tea plantations. Their revolt in 2000 was a rare political assertion over economic grievances.

#### WHY IN NEWS?

The Badagas led a revolt against the government in the Nilgiris over plummeting Green Tea Leaves prices, which escalated into violence and disrupted local events like the Ooty Flower Show in 2000.

### **Bathukamma Festival**

**Bathukamma** is a floral festival celebrated predominantly by women in Telangana. It spans nine days and involves creating intricate flower stacks arranged in a conical shape, symbolizing Goddess Gauri. The festival celebrates nature and the cultural identity of Telangana. Women dress in traditional attire, sing folk songs, and perform a unique dance by circling the floral arrangement. Bathukamma is linked to the agricultural cycle and the monsoon season. It culminates with the immersion of the flower stacks in water bodies. The festival has gained recognition for its environmental and cultural significance, promoting social unity among communities.

#### WHY IN NEWS?

Telangana government is promoting Bathukamma internationally with celebrations on land, air, and water, including a Guinness World Record attempt with over 10,000 women participants.

### **Bhagwa Dhwaj (Saffron Flag)**

The **Bhagwa Dhwaj**, or saffron flag, is a symbol deeply associated with Hindu culture and nationalism in India. It is typically saffron or yellow and represents sacrifice, purity, and courage. The flag is revered by the Rashtriya Swayamsevak Sangh (RSS) as their guru, symbolizing the unity and spirit of their ideology. The concept of worshipping the flag as a guru originated with the RSS founder K.B. Hedgewar, who preferred the flag over personal reverence. The flag is often seen in religious and political events, emphasizing cultural pride and identity.

#### WHY IN NEWS?

The saffron flag is referenced in a Bhil folk tale where a teacher encourages worship of the guru of gurus, the Bhagwa Dhwaj, reflecting RSS cultural symbolism.

### **Bhil Tribe**

The **Bhil tribe** is one of the largest indigenous communities in India, primarily found in Madhya Pradesh, Rajasthan, Gujarat, and Maharashtra. They have a rich oral tradition featuring folk tales, songs, and dances that reflect their social values and history. The Bhils



traditionally practice shifting cultivation and hunting, and many are skilled archers. Their language belongs to the Bhil language group, part of the Western Zone of Indo-Aryan languages. Bhils have unique festivals like Bhagoria and celebrate nature through rituals involving rivers and trees. Their folklore often addresses social issues like caste and community harmony.

#### WHY IN NEWS?

The Bhil tribe's folk tales are being translated into Hindi as part of a government initiative to preserve tribal languages and culture, denoting social themes like casteism and inter-caste love.

### **Bhumkal Rebellion**

The **Bhumkal Rebellion** was a 1910 tribal uprising in Bastar, Central India, sparked by British colonial forest reservation policies that restricted traditional forest access. Led by Gunda Dhur, tribals protested loss of customary rights, circulating mango leaves and mahua flowers as revolt symbols. The rebellion opposed forest laws that criminalized indigenous use and banned home-brewing of mahua liquor, a sacred practice. It reflected deep resentment against colonial revenue-driven forest control that ignored tribal customs. The revolt is a key example of early indigenous resistance to forest alienation under British rule.

#### WHY IN NEWS?

The rebellion is referenced amid renewed tribal protests over forest rights and state control, illustrating historical roots of contemporary conflicts over customary land and tree tenure.

### **Channapatna Toys**

Channapatna Toys are traditional wooden toys and dolls made in the town of Channapatna, Karnataka. Known as the Toy Town of India, the craft uses locally sourced softwood called *Wrightia tinctoria* (ivory wood). The toys are colored with natural dyes and lacquered for a glossy finish. This craft dates back over 200 years and is protected under the Geographical Indication (GI) tag. The toys are eco-friendly and non-toxic, making them safe for children. Artisans use a lathe-turning technique called turned wood to shape the toys, preserving a centuries-old artisanal tradition.

#### WHY IN NEWS?

Channapatna Toys were showcased by Karnataka artisans at the Lok Samvardhan Parv 2025 in Kochi, promoting traditional crafts and supporting artisan livelihoods.

### **Chero Tribe**

The **Chero** are an indigenous tribal community primarily settled in **Palamau** district of Jharkhand and parts of Bihar. Emerging after the fall of the Pala Empire in the 12th-13th century, they resisted Mughal and British invasions fiercely. Their warriors were known for using simple, bent-arc bows, contrasting with the more sophisticated weaponry of their enemies. The tribes notable leaders include **Medini Rai**, a 17th-century folk hero remembered as Chero Napoleon, and the brothers **Nilamber and Pitamber**, who led



revolts against British rule in 1857. The tribes women actively participated in warfare and hunting.

#### WHY IN NEWS?

The Chero archers have inspired the Jharkhand franchise named Chero Archers in the inaugural Archery Premier League (APL) starting October 2025, celebrating their legacy of defiance and archery skills.

### **Chhath Mahaparva**

Chhath Mahaparva is an ancient Hindu festival dedicated to the Sun God (Surya) and Goddess Chhathi Maiya, primarily celebrated in Bihar, Jharkhand, Uttar Pradesh, and West Bengal. The festival involves rigorous rituals including fasting, holy bathing, and offering prayers to the setting and rising sun. It emphasizes ecological sustainability by promoting clean water bodies and environmental preservation. The festival encourages social equality, transcending caste, creed, and religion, and is celebrated by Indian diaspora communities worldwide. It is known for its four-day observance and strict adherence to purity and devotion.

#### WHY IN NEWS?

The Ministry of Culture initiated consultations with international partners to nominate Chhath Mahaparva for UNESCO's Representative List of the Intangible Cultural Heritage of Humanity for the 2026-27 cycle.

### **Dolmens of Kodaikanal**

The **dolmens** near Kodaikanal are megalithic tombs dating back over 5,000 years. They consist of vertical slabs supporting a large cap-stone with a gentle slope to divert rainwater. Dolmens have openings at the lower end to prevent water accumulation. Most are built on rocky ridges or slopes using undressed stones sourced from nearby natural quarries. Their construction likely depended on the availability of slabs, with the number of chambers reflecting the number of slabs. Many dolmens near Thandikudi have been damaged or lost due to road construction and natural decay. These structures provide insight into prehistoric burial customs in the region.

#### WHY IN NEWS?

The dolmens near Kodaikanal are under threat from encroachment and vegetation overgrowth, with less than 50% of those recorded by early Jesuit surveys still visible, denoting concerns about their preservation.

### **Gilgit Manuscripts**

The **Gilgit manuscripts** are a collection of ancient Buddhist texts discovered in the Gilgit region of Kashmir. Dating back to the 4th-5th centuries CE, they are among the oldest Buddhist manuscripts found and are written in the Brahmi script. These manuscripts provide valuable vital information about early Buddhist philosophy, history, and culture in the Himalayan region. They also include texts related to medicine and astrology. The Gilgit manuscripts are crucial for understanding the transmission of Buddhist knowledge from India to Central Asia and beyond. They are preserved in various institutions and are part



of Indias intellectual heritage digitised under the Gyan Bharatam Mission.

WHY IN NEWS?

The Prime Minister cited the Gilgit manuscripts as an example of Indias extensive manuscript heritage during the launch of the Gyan Bharatam portal.

### **Gond Tribe**

The **Gond tribe** is one of the largest indigenous communities in central India, primarily found in Madhya Pradesh, Chhattisgarh, Maharashtra, and Odisha. They speak Gondi, a Dravidian language, and traditionally follow animistic beliefs, though many have adopted Hindu practices. The tribe is known for its rich cultural heritage, including vibrant folk art and dance forms like the Gondi dance. Gond society is predominantly patriarchal, and customary laws generally exclude women from inheriting ancestral property. The tribes social system is organized around clans called gotras, which regulate marriage and social relations. Their livelihoods primarily depend on agriculture and forest produce.

WHY IN NEWS?

The Supreme Court judgment in Ram Charan vs Sukhram addressed property rights of daughters in the Gond tribe, challenging traditional customs that exclude women from ancestral property inheritance.

### **Greyware Pottery**

Greyware pottery is a type of ceramic ware characterized by its grey color and fine fabric, commonly associated with the late Harappan and post-Harappan phases in the Indian subcontinent. This pottery type was found in Baghpat district during excavations, suggesting continuity or cultural interactions between Harappan and later cultures. Greyware often features painted designs and was used for everyday utensils and ceremonial purposes. Its discovery helps archaeologists understand technological advances and cultural transitions in the region during the Bronze Age and early Iron Age periods.

WHY IN NEWS?

Excavations in Baghpat district have unearthed greyware pottery, contributing to the understanding of the area's ancient Harappan connections and heritage tourism development.

### **Janardana Swamy Temple**

The **Janardana Swamy Temple** is an ancient Hindu temple located at the southern end of the Varkala Cliff, with a history spanning over two millennia. It is dedicated to Lord Vishnu in the form of Janardana. The temple is a major pilgrimage site, especially during **Karkidaka Vavu**, a ritual day for honoring ancestors, attracting thousands of devotees. The temples location on the cliff integrates spiritual significance with the natural landscape. It serves as a cultural anchor for the local community and is closely linked with the nearby Sivagiri Mutt founded by social reformer Sree Narayana Guru.

WHY IN NEWS?

The temple is central to Varkalas identity as a sacred site, drawing large pilgrim gatherings that show the cultural importance of the cliff amid environmental threats.



## Javari Temple

The Javari temple is part of the Khajuraho Group of Monuments in Madhya Pradesh, built during the Chandela dynasty in the 10th–11th centuries. It features Nagara-style architecture and houses a notable seven-foot-tall idol of Lord Vishnu, which is missing its head but has intact arms, legs, and torso. The temple is under UNESCO protection and remains a subject of debate regarding the missing head—whether it was destroyed by invaders or left unfinished. Javari is one of several temples in the region that survived invasions due to the Chandelas political strength and strategic location.

### WHY IN NEWS?

The headless Vishnu idol at the Javari temple sparked controversy after Chief Justice BR Gavai dismissed a petition seeking its restoration, reigniting debates about the idols missing head and historical temple damage.

## Justice Anna Chandy

Justice **Anna Chandy** (1905–1996) was the first woman judge in India, appointed in 1937 to the district court of Kerala. She was also among the first female judges in the British Commonwealth. Chandy was a pioneering advocate for women's rights and legal reforms in India. She served as a judge in the Kerala High Court after independence and was known for her progressive judgments on social issues. Despite her early appointment, women's representation in higher judiciary remained low for decades. Anna Chandy's career is a landmark in Indian legal history, symbolizing the slow but ongoing inclusion of women in the judiciary.

### WHY IN NEWS?

Her legacy was recalled in 2025 amid debates on the underrepresentation of women in India's higher judiciary and calls for institutional reforms.

## Kalinjar Fort

Kalinjar Fort is a historic fortress located in the Bundelkhand region of Madhya Pradesh. It was a stronghold of the Chandela dynasty and played a role in defending the region against invasions from Mahmud of Ghazni and Muhammad Ghor. The fort's elevated position made it difficult to besiege, allowing the Chandelas to maintain power and negotiate compromises with invaders. Kalinjar was strategically important in medieval Indian history and is linked to several battles and political events. It remains a symbol of resistance in Bundelkhand's history.

### WHY IN NEWS?

Kalinjar Fort is mentioned in the context of historical invasions affecting Khajuraho and the survival of temples like Javari, denoting the Chandela dynasty's defensive successes.

## Kirtanias

Kirtanias are devotional singers and performers primarily associated with the Bhakti movement in India. They sing kirtans, which are devotional songs or hymns praising deities, often accompanied by traditional instruments like the harmonium and mridangam. Kirtanias typically perform in groups and their singing is both a spiritual



practice and communal event. Their performances often include call-and-response chanting, encouraging audience participation. While rooted in Hindu traditions, kirtanias also appear in Sikhism and other Indian religions. They have played role in spreading religious teachings and cultural values, especially during festivals like Janmashtami, which celebrates the birth of Krishna.

#### WHY IN NEWS?

The text mentions kirtanias performing on Oxford Street during Janmashtami in 2025, illustrating the cultural presence and evolving perception of Indian spirituality abroad.

### **Kudavolai System**

The Kudavolai system was an ancient electoral process used in the Chola kingdom around the 9th to 13th centuries CE. It involved secret voting using palm leaf tickets called "Kudavolai," which were placed in a pot to elect representatives or officials. This method ensured fairness and anonymity in elections. The system is one of the earliest known examples of democratic practice in India, predating many modern electoral systems. Kudavolai marks Indias historical commitment to self-governance and participatory democracy at the village and local levels during the medieval period.

#### WHY IN NEWS?

The Vice-President referenced the Kudavolai system to emphasize Indias ancient tradition of democracy during his speech at the Bihar literature festival.

### **Kurumbas Tribe**

The **Kurumbas** are an indigenous tribal community residing in the Nilgiri and Western Ghats regions, including the fringes of Silent Valley National Park. Traditionally hunter-gatherers and shifting cultivators, they have deep ecological knowledge of the forests. Their language belongs to the Dravidian family, and they maintain animistic beliefs tied to nature spirits. The Kurumbas use various forest resources sustainably and have distinct cultural practices involving rituals, music, and dance connected to the forest. They have historically coexisted with the ecosystem without large-scale environmental impact.

#### WHY IN NEWS?

The Kurumbas perceive the absence of cicadas in Silent Valley as a natural aspect of the forests identity, differing from scientific curiosity about the silence.

### **Lighthouse Museum**

The lighthouse museum at NMHC will be **77 meters tall**, making it the tallest lighthouse museum globally. It will have an open gallery at 65 meters height, offering panoramic views of the entire complex. The museum will combine maritime history with modern educational exhibits and interactive displays, focusing on Indias seafaring traditions. It is designed to attract tourists and scholars alike, blending heritage with entertainment. The structure will also serve as a landmark for the complex and a symbol of Indias maritime ambitions.

#### WHY IN NEWS?

The lighthouse museum is a key feature of the NMHC project being reviewed by Prime Minister Modi during his Gujarat visit.



## Mori Culture

Mori culture refers to the indigenous Polynesian people of New Zealand, known as Māori. They have a rich heritage of language, art, and social customs. Central to Māori culture is the concept of **whānau** (extended family), community cohesion, and respect for the environment. The Māori language, te reo Māori, is an official language of New Zealand. Traditional practices include the haka (ceremonial dance), moko (tattooing), and marae (communal meeting grounds). Māori values influence New Zealand's social policies and contribute to its peaceful society by encouraging inclusiveness and mutual respect.

### WHY IN NEWS?

New Zealand's rise in the 2025 Global Peace Index is partly attributed to its strong community spirit rooted in Māori culture.

## Nemawar Temple

Nemawar is a site on the banks of the Narmada river, known for its hilltop temple built in Chandela style. The temple is historically as it remains incomplete, with the sanctum never constructed. This unfinished state reflects a pattern seen in some Indian temples where construction was halted, possibly due to political or economic factors. Nemawar is part of the broader cultural landscape of central India and offers insight into regional temple architecture and religious practices during the medieval period. Its incomplete status is preserved without alteration by local authorities.

### WHY IN NEWS?

Nemawar's incomplete temple is cited in discussions about the Javari idols missing head, suggesting the idol might have been left unfinished rather than vandalized.

## Nettippattam

Nettippattam is a traditional ornamental caparison used to decorate elephants, mainly in Kerala's temple festivals. Made of intricately designed gold-plated copper, it is attached to the elephants' forehead and symbolizes prosperity and grandeur. The craft involves skilled artisans who create detailed motifs and patterns reflecting Kerala's cultural heritage. Nettippattam is integral to famous festivals like Thrissur Pooram and is considered auspicious. The creation process includes multiple stages of metalwork and polishing, preserving traditional techniques passed down through generations. It is both a religious symbol and a unique example of Kerala's metal craft tradition.

### WHY IN NEWS?

Nettippattam was one of the traditional crafts exhibited by artisans from Kerala at the 5th Lok Samvardhan Parv in Kochi, denoting its cultural significance and craftsmanship.

## Operation Polo

Operation Polo was the **military operation conducted in 1948** by the Government of India to annex the princely state of Hyderabad into the Indian Union. Hyderabad, ruled by the Nizam, was initially reluctant to join India post-independence. The operation lasted five days, from September 13 to 17, 1948, resulting in the swift integration of Hyderabad. Sardar Vallabhbhai Patel played a **decisive role** in planning and executing the operation.



as Indias first Home Minister. The operation ended the Nizams rule and helped consolidate Indias territorial integrity. It is also known as the Police Action in official records.

#### WHY IN NEWS?

The unveiling of the AI-powered Holobox of Patel coincided with September 17, the anniversary of Operation Polo, denoting Patels role in Hyderabads liberation.

### **Paliyar Tribes**

The **Paliyar** tribes are indigenous people of the Palani and surrounding hills in Tamil Nadu. They traditionally used the bridle path to Kodaikanal before the motorable road was built. The Paliyar were forest gatherers, relying on the rich flora such as pepper and cardamom found at altitudes between 4,000-5,000 feet. Their knowledge of local terrain and resources was crucial for early explorers and Jesuit priests like Father Anglade, who collaborated with Paliyar men to document dolmens and regional biodiversity. The Paliyar maintain a distinct culture with knowledge of ancient trade routes passing through their territory.

#### WHY IN NEWS?

The Paliyars traditional bridle path was the precursor to the motorable road to Kodaikanal, which was completed in 1914, marking change in access to the region.

### **Poona Pact**

The **Poona Pact** was signed on September 24, 1932, between Mahatma Gandhi and Dr. B.R. Ambedkar. It replaced the British Communal Award's provision for separate electorates for Dalits with reserved seats in joint electorates. The Pact reserved **148 seats** for Dalits in provincial legislatures, more than the 71 seats originally allotted under separate electorates. Dalit candidates were elected by the general Hindu electorate, but initially, Dalit voters had a primary election to shortlist candidates (later dropped). It pledged to end untouchability and allocated educational and job opportunities for Dalits. The Pact influenced India's affirmative action framework post-independence.

#### WHY IN NEWS?

The Poona Pact is referenced as a foundational moment in India's affirmative action history, marking early political compromise on Dalit representation and setting the stage for ongoing debates over caste-based reservations.

### **Rajgir**

Rajgir is an ancient city in Bihar, known as the **land of penance of Lord Buddha**. It was the first capital of the Magadha kingdom and site for both Buddhism and Jainism. The city features hot springs, ancient monasteries, and ruins of fortifications dating back over 2,500 years. Rajgir is home to the **Griddhakuta Hill**, where Buddha is said to have delivered many sermons. It also hosts the Vishwa Shanti Stupa, a peace pagoda built by Japanese Buddhists. Rajgirs historical and religious significance attracts pilgrims and tourists alike.

#### WHY IN NEWS?

Rajgirs importance was brought into light due to the inauguration of the Royal Bhutan



Buddhist Temple, emphasizing its Buddhist heritage and cross-border cultural ties.

### Sahitya Akademi

The Sahitya Akademi, established in 1954, is India's National Academy of Letters, responsible for the promotion of literature in all Indian languages recognized by the Constitution. It organizes literary events, publishes works, and awards annual prizes to outstanding writers. The Akademi supports linguistic diversity and cultural preservation through its programs, including translation projects and literary festivals like Unmesh. It operates under the Ministry of Culture and plays an important role in encouraging literary dialogue nationally and internationally. The Akademi also maintains an extensive archive of literary works and critical essays.

#### WHY IN NEWS?

The Sahitya Akademi is organizing the Unmesh international literary festival in Patna, which is currently underway with participation from over 550 literary figures worldwide.

### Santali Language

Santali is an Austroasiatic language spoken primarily by the Santal tribe in India, Bangladesh, Nepal, and Bhutan. It uses the Ol Chiki script, developed in the 1920s by Pandit Raghunath Murmu. Santali has a rich oral tradition with folk songs and stories and is recognized as a scheduled language in India. It is tonal, which is rare for Indian languages. The language has influenced and been influenced by neighboring Indo-Aryan and Dravidian languages. Santali's connection to the Harappan script is hypothesized by some scholars who suggest that the script may encode proto-Santali or related tribal languages.

#### WHY IN NEWS?

Santali is mentioned as a possible linguistic root for the undeciphered Harappan script, with a paper on the topic to be presented at the conference in New Delhi.

### Saora Tribe

The **Saora (Saura) tribe** is an indigenous community primarily residing in Odisha's Mahendragiri hills. Known for their distinct **pictorial wall paintings** and animistic religious practices, they maintain a close relationship with nature. Their language belongs to the Austroasiatic family. The Saora traditionally practice shifting agriculture and have unique social customs, including a council of elders called **Jani**. They are among the region's earliest inhabitants, contributing to the cultural diversity of Odisha. The tribe faces challenges due to habitat loss and development pressures in their traditional lands.

#### WHY IN NEWS?

The Saora tribes' habitat in Mahendragiri is under threat due to new tourism infrastructure and deforestation, raising concerns over their cultural and ecological survival.

### Self-Respect Movement

The Self-Respect Movement began around 1925 in Tamil Nadu, advocating radical social reforms to dismantle Brahminical dominance and caste hierarchy. Founded by E.V. Ramasamy (Periyar), it promoted women's rights, inter-caste marriages, and the rejection



of caste-based privileges. It popularized the concept of self-respect marriages, which did not require Brahmin priests or rituals. The movement challenged the Indian National Congress and Gandhis caste-based nationalism. It mobilized non-Brahmin masses and emphasized social reform over political independence. It influenced Dravidian politics and encouraged a non-Brahmin identity in Tamil society.

#### WHY IN NEWS?

The movement is marking its centenary in 2025, reflecting on its historical impact and ongoing relevance amid rising Hindutva politics and cultural homogenization in India.

### **Sinauli Bronze Chariots**

Sinauli is a village in Baghpat district where excavations uncovered **bronze chariots** dating back to around 2000 BC. These chariots were found alongside burial sites and are linked to the Bronze Age culture in the region. The discovery challenged previous notions about the extent of chariot use in ancient India and provided insight into burial customs and material culture of the time. The artefacts are rare examples of early wheeled vehicles in South Asia and have attracted global archaeological attention. The site also yielded other artefacts, including greyware pottery.

#### WHY IN NEWS?

The district gained global attention in 2018 due to the discovery of these bronze chariots, denoting Baghpat's archaeological importance.

### **Sitakund Site**

Sitakund is a sacred water body located in Bondaghati, associated with local tribal religious practices. It is revered by the Bonda tribe and serves as a site for ritualistic ceremonies and community gatherings. The site is linked to mythological traditions and is considered spiritually , often visited during festivals and special occasions. Despite its cultural importance, Sitakund has received little infrastructural development. Efforts to develop this site aim to preserve tribal heritage while promoting eco-tourism and local economic growth through cultural tourism initiatives.

#### WHY IN NEWS?

The Governor emphasized the development of the Sitakund site during his visit to Bondaghati to enhance its cultural and economic value for the Bonda community.

### **Spiritual Nationalism**

Spiritual nationalism is a concept popularized by Swami Vivekananda, linking national identity with spiritual unity rather than political or ethnic divisions. It promotes the idea that a nations strength derives from shared spiritual values, brotherhood, and service to humanity. Vivekanandas spiritual nationalism emphasized inclusion of all social classes, especially the marginalized, and rejected sectarianism and caste discrimination. It inspired the Indian independence movement by encouraging pride in Indias ancient spiritual heritage while advocating social reform and national integration. This ideology influenced later leaders and continues to inform discussions on Indias cultural identity and unity.

#### WHY IN NEWS?

Spiritual nationalism was brought into light as a foundation for addressing Indias internal



social conflicts and promoting unity amid contemporary communal and regional tensions.

### **Stephen Marche**

Stephen Marche is a Canadian author and cultural critic known for his work on politics, culture, and social issues. He wrote "The Next Civil War – Dispatches from the American Future" in January 2022, which predicted the intensification of social and political conflicts in the US. Marche's analysis of the January 6, 2021 Capitol insurrection brought into light the role of Donald Trump's MAGA movement in deepening national divisions. He frequently contributes to publications such as "Esquire" and "The New York Times". Marche's work blends journalism with speculative fiction to explore future scenarios based on current political trends.

#### WHY IN NEWS?

Stephen Marche's book "The Next Civil War" is referenced as a prescient account of the US's escalating internal strife following the 2021 Capitol riot, which remains a central issue in American politics in 2025.

### **Tripura Sundari Temple Complex**

The Tripura Sundari Temple in Matabari, Tripura, is one of the 51 Shakti Peethas, pilgrimage sites in Hinduism dedicated to the goddess Tripura Sundari. The temple dates back to the 16th century and is an important center of Shakta worship. The complex includes ancient sculptures and intricate stone carvings, reflecting the region's rich cultural heritage. It is located near the Bangladesh border and attracts pilgrims from across northeast India and Bangladesh. The temple is undergoing renovation under the Pilgrimage Rejuvenation And Spiritual Heritage Augmentation Drive (PRASHAD) to improve infrastructure and visitor facilities.

#### WHY IN NEWS?

Renovation and development work at the Tripura Sundari Temple complex began recently as part of a government initiative to enhance pilgrimage infrastructure and promote religious tourism in northeast India.

### **Vijay Durg (Fort William)**

Vijay Durg, commonly known as **Fort William**, is a historic fort located in Kolkata, serving as the headquarters of the Eastern Command of the Indian Army. Built in 1696 by the British East India Company, it was named after King William III. The fort played a critical role during British colonial rule and the Battle of Plassey in 1757. Today, it functions as a major military installation and administrative center for Eastern Command, overseeing operations in India's eastern and northeastern regions. The fort is not open to the public due to its active military status.

#### WHY IN NEWS?

The 16th Combined Commanders Conference was inaugurated at Vijay Durg, emphasizing the fort's ongoing strategic military significance.

### **Zafar Mahal**

Zafar Mahal is a 19th-century Mughal structure located in Delhi, serving as the last



monumental architectural addition to the Red Fort complex. Built under Bahadur Shah Zafar, the last Mughal emperor, it functioned as a summer palace and a gateway to the imperial gardens. The Mahal is notable for its blend of Mughal and British colonial architectural styles. Over time, it has suffered from neglect, environmental degradation, and encroachments. It is constructed primarily from red sandstone and is an important cultural heritage site reflecting the final phase of Mughal architecture in Delhi.

#### WHY IN NEWS?

Samples from Zafar Mahal were included in the recent study analyzing black crust formation, denoting pollution impact on lesser-studied heritage structures within the Red Fort complex.

### Zanskar Festival

The **Zanskar Festival** is an annual cultural event held in Ladakh, showcasing the region's ethnic diversity and traditional practices. It features cultural performances, adventure sports like rafting and archery, and exhibitions of government schemes. The festival promotes local entrepreneurship through home stays and guesthouses, directly benefiting village communities. It attracts artists and tribal groups from across Ladakh and other state of Indias. The event serves as a platform to preserve Ladakhi heritage and boost tourism. The 10th edition is anticipated to draw nearly 10,000 visitors, emphasizing community involvement and economic development.

#### WHY IN NEWS?

Preparations are ongoing for the 10th edition of the Zanskar Festival on September 20-21, denoting its role in cultural preservation and tourism promotion in Ladakh.

## Science & Technology

### Anomalous Dispersion

Anomalous dispersion is a property of optical fibres where different light frequencies travel at varying speeds, causing pulse broadening or compression. It occurs when the group velocity dispersion parameter is negative, usually at wavelengths longer than the fibres zero-dispersion wavelength. This phenomenon enables soliton propagation—stable light pulses that maintain shape over long distances. Anomalous dispersion affects how light pulses spread or converge in nonlinear regimes, influencing signal quality in fibre optics. It is critical in designing fibre systems for telecommunications and nonlinear optics experiments, including optical computing.

#### WHY IN NEWS?

The research achieved over 91% image recognition accuracy by operating optical fibres in the anomalous dispersion regime, exploiting this property to enhance AI computations using light.

### AsiaSat

AsiaSat is a Hong Kong-based satellite operator established in 1988, providing satellite communication services across the Asia-Pacific region. It supports broadcasting, enterprise communication, and rural connectivity, reaching over **850 million TV**



**households.** AsiaSat has partnered with Indian firms like Inorbit Space Telecommunications to extend its services in India. Its satellites facilitate major global events coverage, including the Indian Premier League and FIFA World Cup. Despite long-term compliance, AsiaSat faced regulatory hurdles in India in 2025 when seeking long-term authorization from IN-SPACe, leading to potential service discontinuation beyond April 2026.

#### WHY IN NEWS?

AsiaSat encountered unexpected regulatory challenges in India, threatening the continuity of its satellite services and impacting broadcasters dependent on its infrastructure.

#### **AWaRe Classification**

The AWaRe classification categorizes antibiotics into three groups – Access, Watch, and Reserve, to guide appropriate use and combat antimicrobial resistance. Access antibiotics are first- or second-choice treatments with lower resistance potential. Watch antibiotics have higher resistance risks and should be used sparingly. Reserve antibiotics are last-resort options for multidrug-resistant infections. The WHO Expert Committee updates this classification periodically, influencing global antibiotic stewardship policies. The 2025 update included proposals refining definitions and classifications to better address emerging resistance patterns and optimize antibiotic usage worldwide.

#### WHY IN NEWS?

The 25th WHO Expert Committee meeting in 2025 reviewed updates to the AWaRe antibiotic classification to improve global antibiotic stewardship and resistance management.

#### **Bharat 6G Alliance**

The **Bharat 6G Alliance** is a consortium formed by the Government of India, consisting of domestic industry players, academic institutions, national research centers, and standards organizations. It aims to coordinate research, development, and deployment strategies for 6G technology in India by 2030. The alliance supports collaborative innovation through initiatives like 100 5G/6G labs and the Telecom Technology Development Fund (TTDF), which finances R&D projects. Bharat 6G Vision emphasizes affordability, sustainability, and universality. It also involves international MoUs to encourage global cooperation. The alliance plays a key role in preparing India's telecom ecosystem for next-generation technologies.

#### WHY IN NEWS?

The Bharat 6G Alliance is central to India's strategic plan for leadership in 6G technology, following the launch of indigenous 4G and rapid 5G expansion.

#### **Bharatiya Space Station**

The **Bharatiya Space Station** is a planned Indian orbital platform expected to be operational by 2035. It aims to support long-duration human spaceflight and scientific research. Unlike the International Space Station, it will be primarily developed and



operated by India's space agencies and private sector. The station will facilitate experiments in microgravity, Earth observation, and space technology development. It is designed to enhance India's independent capabilities in space habitation and encourage international collaboration. The project is part of India's broader strategy to establish a sustained human presence in low Earth orbit and beyond.

#### WHY IN NEWS?

Announced at the International Conference on Space 2025, the Bharatiya Space Station represents a major milestone in India's long-term space exploration goals, marking a new era of indigenous space infrastructure.

### Biosignatures

Biosignatures are objects, structures, or chemical patterns that indicate the presence of past or present life. On Mars, biosignatures include minerals and organic compounds formed by biological processes. They can be **morphological features, isotopic ratios, or chemical compositions** that differ from abiotic origins. Biosignatures are difficult to confirm because some can be mimicked by non-biological reactions. NASA's Perseverance mission focuses on detecting biosignatures in rock samples to identify ancient microbial life. The term is central to astrobiology and planetary exploration, guiding the search for extraterrestrial life beyond Earth.

#### WHY IN NEWS?

NASA reported detection of potential biosignatures in a Mars rock sample, marking a step in the search for extraterrestrial life.

### Chain-of-Thought Prompting

Chain-of-thought prompting is a technique used in large language models where the model is encouraged to generate intermediate reasoning steps before producing a final answer. This method improves performance on complex reasoning tasks by mimicking human step-by-step problem-solving processes. It requires human-crafted prompts or examples to guide the model's reasoning path. While effective, chain-of-thought prompting is limited by the quality and scope of human-designed examples and can introduce biases. It contrasts with reinforcement learning approaches that allow models to develop reasoning strategies independently.

#### WHY IN NEWS?

The article contrasts chain-of-thought prompting with reinforcement learning methods like those used in R1-Zero, emphasizing the latter's potential to overcome limitations of human-guided reasoning training.

### Chandrayaan-3 Lunar South Pole Landing

is an Indian lunar mission that successfully landed near the **Moon's South Pole** in **2023**, making India the first country to achieve this feat. Unlike Chandrayaan-2, it did not carry an orbiter but focused on a lander and rover to conduct surface experiments. The South Pole region is scientifically due to permanently shadowed craters that may contain water ice. Chandrayaan-3's landing site was chosen to explore these resources and understand



lunar geology. The mission used advanced navigation and hazard avoidance technology to ensure a safe touchdown on the rugged terrain of this less explored lunar area.

#### WHY IN NEWS?

Chandrayaan-3's successful landing near the lunar South Pole is noted as a pioneering achievement in lunar exploration.

### **CSIR-AMPRI**

CSIR-Advanced Materials and Processes Research Institute (AMPRI), located in Bhopal, was established in 1981 as a constituent laboratory of the Council of Scientific and Industrial Research (CSIR). It focuses on research in advanced materials, chemical processes, and environmental technologies. AMPRI has contributed to indigenous development of technologies in polymers, composites, nanomaterials, and environmental sensing instruments. The institute collaborates extensively with academic, industrial, and governmental organizations to translate research into practical applications. It also plays a role in capacity building through training and workshops in material science and process engineering.

#### WHY IN NEWS?

CSIR-AMPRI developed the SODAR system facility inaugurated at IMD, Delhi, marking step in indigenizing Indian meteorological technology.

### **Electronic Chart Display and Information System (ECDIS)**

ECDIS is an integrated navigation information system used onboard ships to display electronic navigational charts (ENCs) and provide real-time positioning data. It replaces traditional paper charts and enhances situational awareness by integrating GPS, radar, and automatic identification system (AIS) data. ECDIS is mandatory on many commercial vessels under IMO regulations and improves route planning, collision avoidance, and compliance with maritime safety protocols. The system allows for automatic updates of navigational information and alerts crews to potential hazards. Proper training on ECDIS is critical to prevent navigation errors and accidents at sea.

#### WHY IN NEWS?

ECDIS technology is one of the core training modules at the newly inaugurated Maritime Simulation Centre at AMET, Chennai, aimed at modernizing maritime education.

### **Fleet Mode Initiative**

The fleet mode initiative refers to India's strategy of constructing multiple identical nuclear reactors based on a standardized design, specifically the 700 MW IPHWR reactors. This approach facilitates uniform procurement, streamlined construction processes, and consolidated operational expertise. It aims to reduce costs, shorten project timelines, and enhance safety through replication of proven designs. As of 2025, ten such reactors are planned across India, with three already commissioned. The fleet mode supports India's Atmanirbhar Bharat policy by promoting indigenous technology development and manufacturing in the nuclear sector.

#### WHY IN NEWS?

Mahi Banswara Rajasthan Atomic Power Project is part of this fleet mode initiative,



contributing to India's nuclear energy capacity expansion.

### Full Mission Simulators

Full Mission Simulators are advanced maritime training devices that replicate the entire bridge or engine room environment of a ship. They simulate real-world operational conditions including navigation, engine control, and emergency scenarios. These simulators use high-fidelity visual displays and realistic controls to train seafarers in decision-making, watchkeeping, collision avoidance, and system troubleshooting. They comply with International Maritime Organization (IMO) standards for certification and are essential for safe and effective maritime training. Unlike basic simulators, Full Mission Simulators provide a fully immersive experience, enabling trainees to practice teamwork and communication under simulated stress conditions.

#### WHY IN NEWS?

Full Mission Simulators are a key feature of India's first Maritime Simulation Centre inaugurated at AMET Knowledge Park, Chennai, enhancing hands-on maritime training for future seafarers.

### Himalayan Outpost for Planetary Exploration (HOPE)

HOPE is a habitat module tested in August 2025 at Tso Kar valley, Ladakh, designed for planetary exploration analog missions. It includes an 8-meter diameter habitat and a 5-meter utility module housing life support systems. The site was chosen for its Mars-like environment with high UV radiation, low air pressure, cold temperatures, and saline permafrost. HOPE simulates living and working conditions on Mars, focusing on environmental resilience, life support, and crew safety. The mission tested habitat functionality, resource management, and crew adaptation to harsh conditions, providing insights for future interplanetary missions.

#### WHY IN NEWS?

HOPE's testing in Tso Kar valley was part of India's analog missions to develop technologies and protocols for Mars and other planetary explorations in 2025.

### HOPE Mission (Himalayan Outpost for Planetary Exploration)

The HOPE mission is an ISRO project simulating Mars and Moon living conditions in Ladakh's high-altitude Tso Kar Valley, about **4,500 meters above sea level**. The site's thin oxygen levels, low air pressure, and sub-zero temperatures mimic Martian environmental conditions. Recently, two crew members spent 10 days inside a compact Mars habitat replica there, conducting experiments on human endurance and habitat functionality. HOPE aims to test technologies and strategies for future planetary missions, focusing on environmental challenges of space exploration in a terrestrial analogue environment.

#### WHY IN NEWS?

HOPE's recent 10-day Mars habitat simulation in Ladakh complements ISRO's Mars mission efforts by testing human survival and equipment in Mars-like conditions.

### India Energy Stack (IES)

The **India Energy Stack (IES)** is a Digital Public Infrastructure (DPI) initiative by the



Ministry of Power designed to create a connected, intelligent, and interoperable energy ecosystem in India. It uses **standardized and open APIs and protocols** to integrate various power sector IT/OT systems. The IES aims to enable innovation, efficiency, and decentralized power generation by facilitating data sharing and collaboration among utilities, technology providers, and innovators. It defines open standards and interoperability frameworks to future-proof energy solutions and reduce retrofit costs. The platform supports renewable energy integration and consumer-centric reforms in the power sector.

#### WHY IN NEWS?

The Ministry of Power is conducting a Stakeholder Mapping Survey to gather data for developing the IES, aiming to build a comprehensive, future-ready digital infrastructure for India's power sector transformation.

### Innovation Corridors

Innovation corridors are physical and virtual clusters designed to integrate R&D, manufacturing, academia, start-ups, corporates, and government agencies to accelerate mission-driven technological development. These corridors enable shared infrastructure like advanced fabrication labs, testing facilities, and simulation environments. Regulatory sandboxes within these corridors allow for controlled testing of emerging technologies. They promote rapid prototyping, talent exchange, and equitable resource distribution, especially benefiting tier-2 and tier-3 cities. Globally, examples include Stanford-Silicon Valley, Cascadia (Seattle-Vancouver), and China's G60 corridor. In India, innovation corridors aim to create self-sustaining ecosystems that convert research into scalable industrial products and exportable technologies.

#### WHY IN NEWS?

The concept is central to India's plan to boost domestic innovation and manufacturing capacity in critical sectors such as semiconductors and EV batteries as part of the 2047 development vision.

### INSPACE

The **Indian National Space Promotion and Authorization Center (INSPACe)** was established in 2020 to promote private sector participation in India's space activities. It functions as a single-window nodal agency for authorizing and facilitating space activities by non-government entities. INSPACe oversees technology transfers, commercial launches, and space infrastructure usage, ensuring coordination between government and private players. It operates under the Department of Space but maintains autonomy for regulatory functions. INSPACe has facilitated over 100 technology transfer agreements, encouraging innovation and industrial growth in India's space sector beyond ISRO's direct control.

#### WHY IN NEWS?

INSPACe facilitated the 100th technology transfer agreement, enabling Hindustan Aeronautics Ltd. to produce small satellite launch vehicles (SSLV), marking a milestone in



India's space sector privatization efforts.

### **Institute of Nano Science and Technology (INST), Mohali**

INST Mohali is an autonomous research institute under India's Department of Science and Technology, established in 2013. It focuses on interdisciplinary nanoscience and nanotechnology research, ranging from nanoelectronics to nanobiotechnology. The institute encourages innovation in quantum materials, nanomaterials synthesis, and device fabrication. INST supports advanced research infrastructure and collaborates internationally. It aims to translate nanoscience breakthroughs into practical applications, including energy-efficient devices, sensors, and biomedical technologies. INST's work on cholesterol-based spintronic materials represents its commitment to pioneering research at the intersection of biology and quantum physics.

#### WHY IN NEWS?

Scientists from INST Mohali introduced cholesterol-based nanomaterials for controlling electron spin, marking a step in spintronics and quantum technology research.

### **Interstellar Extinction**

Interstellar extinction is the absorption and scattering of electromagnetic radiation by dust and gas between an emitting astronomical object and the observer. It causes the dimming and reddening of starlight, as shorter wavelengths are scattered more than longer wavelengths. Extinction varies with wavelength and is strongest in the ultraviolet and blue regions of the spectrum. It affects the apparent brightness and color of stars, complicating distance and luminosity measurements. The phenomenon is quantified by the extinction curve, which differs in various galactic environments. Extinction is a key factor in studying star formation and the structure of galaxies.

#### WHY IN NEWS?

The recent study mapped the uneven distribution of interstellar extinction in the Milky Way using data from over 6,000 open clusters, revealing a wavy dusty layer below the galactic mid-plane.

### **Isobutanol**

Isobutanol is a four-carbon alcohol with the chemical formula  $C_4H_{10}O$ , used primarily as a solvent in paints, coatings, and adhesives. It has a higher energy density and lower volatility compared to ethanol, making it a promising biofuel additive. Isobutanol can be produced biologically via fermentation of sugars using genetically engineered microbes. It is less hygroscopic than ethanol, reducing corrosion issues in engines and fuel systems. Its compatibility with existing fuel infrastructure allows easier blending with diesel and gasoline. Isobutanol also has potential as a standalone fuel and as a feedstock in the chemical industry for producing plastics and synthetic rubber.

#### WHY IN NEWS?

The Automotive Research Association of India (ARAI) is exploring blending 10% isobutanol with diesel as a biofuel alternative amid challenges faced with ethanol blends in India.



## Jarosite Mineral

Jarosite is a **yellow, iron-rich sulphate mineral** formed on Earth through the reaction of minerals containing oxygen, iron, sulphur, and potassium with water. It is rare in sedimentary rocks and typically forms in volcanic environments. Jarosite was first detected on Mars by NASA's **Opportunity rover in 2004** at Meridiani Planum, providing strong evidence of past water on the planet. On Earth, jarosite deposits are found in locations such as Matanomadh (India), Mexico, Canada, Japan, Spain, and parts of the US. Its ability to trap organic molecules makes it important for astrobiology and planetary geology.

### WHY IN NEWS?

The discovery and dating of jarosite in Matanomadh supports Mars-like geological conditions on Earth, aiding ISRO's Mars mission preparations.

## JUPITER Supercomputer

JUPITER is Europe's first exascale supercomputer, inaugurated on September 5, 2025, in Germany. It achieves performance in the exaflop range, capable of performing over a quintillion calculations per second. JUPITER is notable for being powered entirely by renewable energy sources, aligning with sustainability goals. It employs advanced parallel computing architectures and is designed for large-scale scientific simulations and data analysis. The machine supports research in climate science, physics, and AI. JUPITER represents a milestone in European high-performance computing and energy-efficient supercomputing technology.

### WHY IN NEWS?

JUPITER's launch as Europe's first exascale supercomputer was announced by the European Commission, emphasizing its renewable energy use and cutting-edge computational power.

## Kalpana 3201 Microprocessor

The **Kalpana 3201** is a 32-bit SPARC V8 RISC microprocessor developed indigenously for space applications. It is designed to be compatible with open-source toolchains, allowing flexible software development. Unlike Vikram 3201, which is tailored for mission-critical avionics, Kalpana offers an alternative architecture focusing on open standards. It was handed over to ISRO alongside Vikram 3201 in early 2025. The Kalpana 3201 supports robust aerospace-grade requirements and contributes to reducing dependency on foreign microprocessors in India's space program.

### WHY IN NEWS?

Kalpana 3201 was introduced alongside Vikram 3201 at Semicon India 2025, denoting India's diversified approach to indigenous space-grade processors.

## Kudankulam Nuclear Power Plant

The Kudankulam Nuclear Power Plant (KNPP) is located in Tamil Nadu, and features Russian-designed VVER-1000 pressurised water reactors. The project began with a 1988 intergovernmental agreement between India and Russia and has expanded through multiple agreements, including those in 1998 and 2010. KNPP is notable for its deep



technology transfer arrangement, where Indian engineers gained expertise in advanced light water reactor technology. The plant operates with a high capacity factor exceeding 90%, providing stable baseload power critical for industrial and digital infrastructure. It is the largest nuclear power station in India and a symbol of Indo-Russian nuclear cooperation.

#### WHY IN NEWS?

KNPP is central to the India-Russia nuclear energy partnership, serving as a model for technology transfer and energy security amid rising electricity demand and AI-driven energy consumption growth.

### **Ladakh Human Analog Mission**

Conducted in November 2024, this mission simulated interplanetary habitat conditions in Ladakh's cold, dry, barren environment. It tested human dwellings designed to replicate living conditions on other planets, focusing on survival and operational challenges in extreme terrestrial analogs. The mission helped develop habitat designs and protocols for long-duration extraterrestrial habitation, emphasizing environmental adaptation, resource management, and team dynamics in isolation. Ladakh's unique geography provides an excellent analog for Mars-like conditions, including temperature extremes and low humidity, making it valuable for space exploration research.

#### WHY IN NEWS?

The Ladakh Human Analog Mission was brought into light as part of India's strategy to prepare for long-term space habitation and potential extraterrestrial base stations.

### **Laminopathies**

Laminopathies are a group of rare genetic disorders caused by mutations in genes encoding nuclear lamins, structural proteins of the nuclear envelope. These diseases affect the mechanical stability and integrity of the nucleus, leading to symptoms like muscle weakness, cardiomyopathy, lipodystrophy, and premature aging syndromes. Laminopathies include conditions such as Emery-Dreifuss muscular dystrophy and Hutchinson-Gilford progeria syndrome. The mechanical fragility of the nuclear lamina in these disorders results in increased cell damage under physical stress, linking them to defects in protein stability under force.

#### WHY IN NEWS?

The study marks potential therapeutic strategies targeting mechanical cofactors like p47 for diseases like laminopathies, where protein stability under mechanical stress is compromised.

### **Light vs Heavy Rare Earth Elements**

Rare earth elements (REEs) are divided into light rare earth elements (LREEs) and heavy rare earth elements (HREEs) based on their atomic weights and chemical properties. LREEs include lanthanum, cerium, praseodymium, neodymium, samarium, and europium, and are more abundant and easier to extract. HREEs, such as gadolinium, terbium, dysprosium, and yttrium, are rarer and have higher atomic numbers. HREEs are critical for



high-performance magnets, phosphors, and specialized alloys. The separation and refining of HREEs are more complex and costly, contributing to their higher market value and strategic importance in technology and defense sectors.

#### WHY IN NEWS?

China's new interim measures control the mining and export of both LREEs and HREEs, affecting global supply chains for advanced technologies and defense industries.

### LVM3 Cryogenic Stage Development

The **LVM3** (Launch Vehicle Mark-3) is ISRO's heavy-lift rocket featuring an advanced cryogenic upper stage. Between 2014 and 2017, ISRO achieved three global records in cryogenic stage development, including the **fastest maiden flight** completed in just 28 months. This contrasts with 37 to 108 months taken by other countries to develop similar technology. The cryogenic stage uses liquid hydrogen and liquid oxygen as propellants, offering higher efficiency and thrust. This technology is critical for launching heavy payloads into geostationary and deep space orbits. LVM3 underpins many of ISRO's ambitious missions, including human spaceflight plans.

#### WHY IN NEWS?

LVM3's rapid cryogenic development is emphasized as a key factor in ISRO's cost-effective and efficient space missions.

### M-Sigma Application

M-Sigma is an encrypted messaging application developed exclusively for the Indian Army, embedded within the SAMBHAV mobile ecosystem. It supports secure transmission of images, videos, and files, functioning as a military-grade alternative to commercial apps like WhatsApp. M-Sigma employs advanced encryption protocols to ensure confidentiality and integrity of communications under battlefield conditions. It was critical in Operation Sindoor, enabling real-time secure communication without risk of external surveillance. The app is continuously being upgraded to counter evolving cyber threats and supports interoperability across various military units using SAMBHAV devices.

#### WHY IN NEWS?

M-Sigma played a very important role in secure communication during Operation Sindoor and is being enhanced to maintain India's cyber defense edge in hybrid warfare scenarios.

### Miniature Packaging

Miniature packaging in semiconductors refers to the advanced process of encapsulating microchips in extremely small, compact, and efficient packages. This technology enhances chip performance by reducing size, improving heat dissipation, and enabling integration with other components like sensors and antennas. Miniature packaging is critical for wearable electronics, IoT devices, and mobile applications where space and power efficiency are paramount. Techniques include System-in-Package (SiP), wafer-level packaging (WLP), and 3D packaging. These methods contribute to higher functionality in smaller footprints and improved reliability under harsh operating conditions.

#### WHY IN NEWS?

At SEMICON India 2025, one of the 13 MoUs focused on advancing indigenous capabilities



in miniature packaging technology.

### **N-phenethyl-4-piperidone (NPP)**

N-phenethyl-4-piperidone (**NPP**) is a key chemical precursor used in the illicit synthesis of fentanyl. It undergoes a reductive amination reaction to form 4-anilino-N-phenethylpiperidine (4-ANPP), another essential intermediate. NPP has legitimate industrial and pharmaceutical applications but can be diverted into illegal drug manufacturing. The chemical reactions to convert NPP into fentanyl are simple, using common lab glassware and moderate heat, making clandestine production easier to conceal and regulate. Small quantities of NPP can yield large amounts of fentanyl, complicating international efforts to control the opioid epidemic.

#### WHY IN NEWS?

NPP is central to the fentanyl supply chain discussed in the recent U.S. crackdown on precursor chemical exports from India and China.

### **NASA-ISRO NISAR Mission**

The NASA-ISRO Synthetic Aperture Radar (NISAR) mission is a joint Earth observation satellite project scheduled for launch in the mid-2020s. It will use dual-frequency radar to provide high-resolution data on natural hazards, ecosystem disturbances, and climate change. NISAR is the first radar imaging satellite to use two different radar frequencies (L-band and S-band) simultaneously. This capability allows it to penetrate vegetation and soil, enabling detailed studies of earthquakes, tsunamis, and glacier dynamics. The mission exemplifies international cooperation in space science and is expected to generate vast datasets for environmental monitoring and disaster management worldwide.

#### WHY IN NEWS?

The NASA-ISRO NISAR mission was emphasized at the International Conference on Space 2025 as a key example of India's collaboration with global space agencies to address planetary challenges.

### **Neodymium-Iron-Boron Magnets**

Neodymium-iron-boron (NdFeB) magnets are the strongest type of permanent magnets commercially available. They were developed in the 1980s and are composed primarily of neodymium, iron, and boron. These magnets are critical in many high-tech applications including electric vehicle motors, wind turbine generators, hard disk drives, and headphones. NdFeB magnets exhibit exceptional magnetic strength and resistance to demagnetization, enabling miniaturization of devices. Despite their power, they are sensitive to high temperatures and corrosion, often requiring protective coatings. China is the leading producer of the rare earth metals used in these magnets, dominating the global supply chain.

#### WHY IN NEWS?

China imposed export restrictions on rare earth elements used in NdFeB magnets, impacting global clean energy technology supply chains amid U.S.-China trade tensions.



## NESAC

**North Eastern Space Applications Centre (NESAC)** is a regional space technology centre established in 2000 to promote space-based research and applications in the North Eastern states of India. NESAC focuses on satellite remote sensing, GIS, and atmospheric studies to support regional development in agriculture, forestry, disaster management, and natural resource management. It collaborates closely with ISRO and regional governments. NESAC also plays a key role in educational outreach, including co-organizing the NE-SPARKS program to encourage space science awareness among students. Its headquarters is located in Shillong, Meghalaya.

### WHY IN NEWS?

NESAC partnered with MDoNER and ISRO to implement NE-SPARKS, a flagship program promoting space science education among Northeastern students.

## Neutrino Oscillation

Neutrino oscillation is the phenomenon where neutrinos switch between three types – electron, muon, and tau neutrinos. These oscillations imply that neutrinos have mass and that the three types differ slightly in mass and other properties. The frequency and pattern of oscillations provide critical clues about neutrino mass hierarchy and fundamental particle physics. Oscillations are influenced by interactions with matter and energy states, and studying them helps scientists understand particle behavior and the role neutrinos play in cosmology, astrophysics, and geology.

### WHY IN NEWS?

JUNOs main scientific goal is to measure neutrino oscillation frequencies and mass hierarchy, enhancing understanding of neutrino physics and its implications for multiple scientific fields.

## NISAR Satellite

The **NASA-ISRO Synthetic Aperture Radar (NISAR)** is a joint Earth-observing satellite launched on **July 30, 2025**, combining NASAs radar technology and ISROs launch capabilities. It uses an **L-band synthetic aperture radar (SAR)** system capable of resolving objects as small as **5 meters**. The satellite provides detailed images for diverse applications such as disaster response, agricultural management, and infrastructure monitoring. It captures data regardless of weather or daylight, allowing continuous Earth surface observations. NISAR represents one of the first major international collaborations focused on radar Earth observation at this scale.

### WHY IN NEWS?

NISAR has sent its first images of Earths surface, showcasing its high-resolution capabilities and marking the start of full science operations later in 2025.

## Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

NSAIDs are a class of drugs including ibuprofen and naproxen used to reduce inflammation, pain, and fever. They work by inhibiting cyclooxygenase enzymes (COX-1 and COX-2) which produce prostaglandins involved in inflammation. NSAIDs are generally



avoided in the third trimester of pregnancy due to risks like premature closure of the fetal ductus arteriosus, leading to heart and lung complications. They may also increase the risk of miscarriage and low amniotic fluid. NSAIDs differ from acetaminophen, which lacks anti-inflammatory effects but is considered safer during pregnancy.

#### WHY IN NEWS?

Medical guidelines warn against NSAID use in late pregnancy due to birth defect risks, recommending paracetamol as the preferred pain and fever treatment.

### North-Eastern Federal University Mammoth Museum

The North-Eastern Federal University Mammoth Museum is located in Yakutsk, Russia, specializing in Pleistocene megafauna research. It houses extensive collections of frozen Ice Age animals, including mammoths and wolves, preserved in Siberian permafrost. The museum collaborates with the Academy of Sciences of Yakutia on paleontological and genetic studies. It utilizes advanced techniques such as isotopic analysis and DNA sequencing to reconstruct ancient ecosystems and evolutionary histories. The museum plays a key role in studying permafrost-preserved specimens and contributes to global research on extinct species and climate change effects on frozen habitats.

#### WHY IN NEWS?

The museum is involved in analyzing the nearly intact 44,000-year-old Ice Age wolf, providing crucial data on its diet, health, and ancient microbial communities.

### PARAM Series

The **PARAM series** is a line of indigenous Indian supercomputers developed by C-DAC starting in 1991 with the PARAM 8000. It was created due to export restrictions from Western countries. These systems have evolved from teraflop to petaflop capacities. PARAM supercomputers are installed at various Indian institutions like IITs, IISERs, and IISc. The series emphasizes self-reliance in hardware and software design. The series contributed to India's computing capabilities and research infrastructure. The development includes collaboration with academic and private sectors. PARAM systems have supported diverse fields from climate modeling to AI research.

#### WHY IN NEWS?

The PARAM series is mentioned as part of India's ongoing National Supercomputing Mission, denoting its role in building a network of advanced computing facilities across the country.

### Perigee Moon

The **perigee Moon** is the point in the Moon's elliptical orbit when it is closest to Earth, approximately 363,300 km on average. At perigee, the Moon appears larger and brighter in the sky, often called a "supermoon." The difference in apparent size compared to apogee (farthest point) can be up to 14%. Perigee occurs roughly every 27.5 days. When a lunar eclipse coincides with perigee, the Moon appears larger during totality, enhancing visual impact. The gravitational pull at perigee also affects tides on Earth, causing higher than usual tides known as perigean spring tides.



## WHY IN NEWS?

The September 7-8, 2025 lunar eclipse occurs just 2.7 days before the Moon reaches perigee, making the eclipsed Moon appear slightly larger than usual.

**Polymer Electrolyte Membrane Electrolyser**

A **polymer electrolyte membrane (PEM) electrolyser** is a device that splits water into hydrogen and oxygen using electricity. It uses a fluoropolymer membrane such as Nafion that selectively allows protons to pass while blocking electrons, ensuring separation of gases. PEM electrolysers operate at low temperatures and pressures, providing high purity hydrogen suitable for fuel cells. The 1-MW PEM electrolyser installed in Jind produces about 430 kg of hydrogen daily. PEM technology is favored for its compactness, quick start-up, and efficiency. The membranes selective proton conductivity and chemical stability are critical to the electrolysers performance.

## WHY IN NEWS?

A 1-MW PEM electrolyser in Jind produces hydrogen to fuel the new hydrogen-powered train running between Jind and Sonipat, supporting Indias green hydrogen goals.

**Prefabricated Ship Blocks**

Prefabricated ship blocks are large, pre-assembled sections of a ship constructed separately before being moved to the dry dock for final assembly. This modular construction technique allows faster building times, often reducing keel-laying-to-waterborne periods to three or four months. It requires shipyards to have long dry docks and heavy-lift cranes, often with capacities around 1,000 tonnes. Countries like South Korea, Japan, and China have mastered this method, turning shipyards into assembly lines. Indian yards currently lack the space, crane capacity, and technology to implement this, limiting their ability to build large merchant vessels efficiently.

## WHY IN NEWS?

The package announced in 2025 includes plans to upgrade Indian shipyards with infrastructure and technology to support prefabrication methods, aiming to boost large merchant shipbuilding capacity.

**Proxima Centauri**

Proxima Centauri is the closest known star to the Sun, located about 4.24 light years away in the Alpha Centauri star system. It is a red dwarf star with about 12% of the Sun's mass and 0.17% of its luminosity. Proxima Centauri hosts at least two exoplanets, including Proxima b, a potentially habitable terrestrial planet discovered in 2016. The star exhibits frequent stellar flares that can affect planetary atmospheres. Despite its proximity, Proxima Centauri is not visible to the naked eye due to its low brightness. It is a primary target for studies on stellar activity and exoplanet habitability.

## WHY IN NEWS?

AstroSat has observed Proxima Centauri to study its ultraviolet and X-ray emissions, contributing to understanding stellar behavior and exoplanet environments.

**PSLV-C37**

The **PSLV-C37** is an Indian Space Research Organisation (ISRO) launch vehicle that set a



world record by deploying 104 satellites in a single mission in **2017**. It used the Polar Satellite Launch Vehicle (PSLV) platform, known for its versatility and reliability. The mission included satellites from multiple countries and various sizes, from small CubeSats to larger commercial satellites. This feat surpassed previous records for the most satellites launched in one go and demonstrated ISRO's capability in multi-payload deployment and precise orbital insertion techniques. The mission boosted India's reputation in the global space launch market.

#### WHY IN NEWS?

PSLV-C37 is brought into light for its record-breaking satellite launch, marking a major milestone in India's space exploration achievements.

### **Psychobiotics**

Psychobiotics are probiotics and prebiotics that positively affect mental health by modulating gut microbiota. They influence neurotransmitter production, reduce inflammation, and improve stress response. A 2020 meta-analysis in *Frontiers in Psychiatry* found psychobiotic supplementation reduced depressive symptoms, especially in mild to moderate cases. Psychobiotics act through mechanisms such as producing short-chain fatty acids and interacting with the immune system. This field is nascent but promising for adjunct therapy in psychiatry. The term combines "psycho" (mind) and "biotics" (life), reflecting the gut microbiomes role in mental well-being.

#### WHY IN NEWS?

Psychobiotics are brought into light as potential adjuncts to psychiatric care amid rising mental health challenges linked to gut microbiome disruptions from antibiotic overuse in India.

### **Radiative Torque Disruption (RAT-D)**

Radiative Torque Disruption (RAT-D) occurs when large, non-spherical dust grains spin rapidly due to intense radiation from nearby luminous protostars. This rapid rotation causes the grains to fragment into smaller pieces, reducing their ability to align with magnetic fields and lowering the observed polarization fraction. RAT-D contrasts with other radiative torque effects by actively breaking down grains rather than just aligning them. This mechanism explains variations in dust grain alignment efficiency in dense, high-radiation environments such as star-forming cores within molecular clouds. RAT-D is crucial for interpreting polarization observations in astrophysics.

#### WHY IN NEWS?

RAT-D was identified as one of three distinct dust grain alignment mechanisms observed in the G34.43+0.24 cloud, explaining reduced polarization in dense protostellar regions.

### **Rooppur Nuclear Power Plant**

The Rooppur Nuclear Power Plant in Bangladesh consists of two VVER-1200 reactors with a combined capacity of 2,400 MWe. It is Bangladesh's first nuclear power project and is funded largely through a Russian loan. The plant represents a trilateral cooperation model where Russia supplies technology and financing, and India provides technical and



operational assistance. Construction began in 2017, and the plant aims to diversify Bangladesh's energy mix and improve energy security. Rooppur is designed to operate with high safety standards in line with International Atomic Energy Agency (IAEA) guidelines.

#### WHY IN NEWS?

Rooppur exemplifies the replication of the India-Russia nuclear partnership model, with India's growing expertise supporting Bangladesh's entry into nuclear energy powered by Russian technology and funding.

### Semiconductor Mission

India's Semiconductor Mission is a strategic government program launched to develop a robust semiconductor manufacturing ecosystem within the country. It aims to reduce reliance on imports of chips critical for electronics, automotive, and defense industries. The mission involves investments in research, infrastructure, and partnerships with global semiconductor firms. By 2025, the mission had attracted billions of dollars in investment and positioned India as an emerging hub in the global semiconductor supply chain. It focuses on design, fabrication, and packaging of chips, supporting India's technological sovereignty and digital economy growth.

#### WHY IN NEWS?

The text references the Semiconductor Mission as a milestone in India's technological self-reliance and its ambition to become a strategic player in the global chip industry.

### Small Satellite Launch Vehicle (SSLV)

The **Small Satellite Launch Vehicle (SSLV)** is a lightweight rocket designed by ISRO to carry payloads up to 500 kg to low Earth orbit. It aims to provide cost-effective, flexible, and quick turnaround launches for small satellites, targeting both domestic and international markets. SSLV's design emphasizes simplicity and rapid manufacturing, enabling launches within weeks compared to months for larger rockets. It fills the gap between ISRO's heavier launch vehicles and small satellite deployment needs, enhancing India's competitiveness in the global small satellite launch market. SSLV technology transfer to HAL marks its industrial production expansion.

#### WHY IN NEWS?

HAL is acquiring SSLV technology from ISRO to independently manufacture and market SSLVs, expanding India's capability in affordable small satellite launches.

### Stauros in Diatoms

The **stauros** is a cross-shaped thickening or band found on the valve face of certain diatoms. It spans the valve and is flanked by short striae, serving as a structural reinforcement. The stauros plays a role in valve symmetry and is a key taxonomic feature used to distinguish species. Internally, it is raised and supports the raphe system, which facilitates cell motility. The stauros can vary in shape and size among diatom taxa, influencing valve rigidity and function in aquatic environments.

#### WHY IN NEWS?

The newly discovered diatom species features a distinctive rectangular stauros,



contributing to its identification and classification.

### Thorium Reserves in India

India holds nearly **25% of the world's thorium reserves**, mainly in the monazite sands along its coastal regions, particularly in Kerala, Tamil Nadu, and Odisha. Thorium is a radioactive element considered safer and more abundant than uranium for nuclear fuel. India's three-stage nuclear program aims to utilize thorium in the third stage to generate large-scale nuclear power. Thorium reactors produce less long-lived radioactive waste and have lower proliferation risks. Despite its potential, thorium-based nuclear energy development has faced technical and funding challenges. India's thorium utilization could provide a stable baseload power source complementing intermittent renewables.

#### WHY IN NEWS?

The TEPA agreement could facilitate European green finance and technology partnerships to accelerate India's thorium nuclear energy projects, supporting its Net Zero and energy security goals.

### Transit Method

The transit method detects exoplanets by observing periodic dips in a star's brightness as planets pass in front of it. This technique requires precise photometric measurements to identify **tiny decreases in light intensity**. It allows determination of a planet's size, orbital period, and sometimes atmosphere composition. The method is especially effective for planets orbiting close to their stars. It was responsible for discovering thousands of exoplanets, including those found by NASA's Kepler and TESS missions. Transit timing variations can also hint at additional planets in the system.

#### WHY IN NEWS?

The transit method was used by TESS to detect the two new rocky exoplanets orbiting TOI-2322, confirming their presence.

### UNESCO Open Science Framework

The **UNESCO Open Science Framework** was adopted in 2021 by 193 member countries to promote transparency, accessibility, and cooperation in scientific research worldwide. It aims to make scientific knowledge a global public good by encouraging open data, open access publishing, and inclusive participation. The framework supports dismantling barriers created by paywalls and intellectual property restrictions. It emphasizes the importance of equitable access, particularly for researchers and institutions in the Global South, to encourage collaboration and innovation. Despite adoption, challenges persist as major academic publishers continue to restrict access to scientific outputs.

#### WHY IN NEWS?

Cited as a key international policy adopted to promote open science, yet facing resistance from corporate publishers maintaining paywalls on scientific literature.

### Vijayapuram-2 Well

The **Vijayapuram-2 well** is an exploratory well drilled by Oil India Ltd in the Andaman Shallow Offshore Block. Located approximately 9.20 nautical miles (17 km) from the



Andaman shoreline, the well reached a total depth of 2,650 meters beneath 295 meters of water. Initial production testing between 2,212 and 2,250 meters confirmed intermittent natural gas inflow with flaring. Gas samples from the well were found to contain 87% methane. The well represents the first reported hydrocarbon occurrence in the ongoing exploration campaign in this region, marking milestone in India's offshore energy exploration efforts.

#### WHY IN NEWS?

The Vijayapuram-2 well discovery by Oil India Ltd confirmed the presence of natural gas in the Andaman offshore region, potentially opening a new frontier for India's domestic energy resources.

### Vyommitra

Vyommitra is a **half-humanoid robot** developed by ISRO designed to mimic human functions in space missions. It is equipped with sensors to monitor environmental conditions inside crew modules and can communicate with ground control. Vyommitra can operate in microgravity and perform tasks such as switching panels and controlling switches. It represents step toward autonomous spaceflight experiments before human missions. The robot's name means "friend of the sky" in Sanskrit. It was planned for deployment in ISRO's first uncrewed mission in December 2025 to validate life support systems and safety protocols.

#### WHY IN NEWS?

Vyommitra is scheduled to be sent on ISRO's first uncrewed mission in December 2025 as a precursor to human spaceflight under the Gaganyaan programme.

### Zootaxa

Zootaxa is a peer-reviewed scientific journal specializing in animal taxonomy. Established in 2001, it publishes rapid communications on new species descriptions, taxonomic revisions, and biodiversity studies. The journal covers all animal groups and is widely used by taxonomists to officially document new species names and classifications. Zootaxa is known for its fast publication times and global reach, making it a primary outlet for discoveries in zoology. It is indexed in major scientific databases and has contributed to cataloging Earth's biodiversity, including marine species like *Iridogorgia chewbacca*.

#### WHY IN NEWS?

The new coral species *Iridogorgia chewbacca* was formally described and published in the journal Zootaxa, ensuring its recognition in scientific literature.

## International Relations & Organizations

### Chabahar Port

Chabahar Port is Iran's only oceanic port located on the Gulf of Oman. It serves as a strategic gateway for India to access Afghanistan, Central Asia, and beyond, bypassing Pakistan. Developed through the India-Iran Chabahar Agreement, it provides India with a critical route for trade and regional connectivity. The port is equipped to handle large cargo volumes and is crucial for the International North-South Transport Corridor (INSTC).



It reduces transit time for goods between India and Central Asia by nearly 40%. Chabahar is also vital for energy and economic cooperation, linking maritime and overland trade routes.

#### WHY IN NEWS?

Chabahar Port is central to India-Iran cooperation, enhancing regional connectivity and trade, especially amid evolving geopolitical dynamics in 2025. Upcoming political consultations aim to boost this cooperation further.

### **Chinas Rare Earth Research Dominance**

China leads global rare earth research, contributing nearly 30% of all scientific publications in this field. Its research encompasses mineral exploration, extraction technologies, refining processes, and applications in clean energy and defense. The countrys investment in rare earth research has grown substantially, with annual funding reaching about \$14 billion since 2022. This research dominance supports Chinas control over the rare earth value chain and technological advancements. The U.S. and Japan trail with less than 10% each, while India contributes about 6%. China's research strength reinforces its geopolitical leverage in rare earth minerals.

#### WHY IN NEWS?

Chinas increased funding and research output underpin its dominance in rare earth mining, processing, and export control policies announced recently.

### **Doha Agreement**

The Doha Agreement, signed in February 2020 between the U.S. and the Taliban, set terms for the withdrawal of American troops from Afghanistan and outlined commitments from both sides. The U.S. pledged not to use force against Afghan territorial integrity or interfere in internal affairs. The agreement aimed to facilitate peace talks between the Taliban and the Afghan government. It included timelines for troop withdrawals and conditions to prevent terrorism. Despite the agreement, violence continued, and the Taliban took power in 2021. The agreement remains a key reference point in diplomatic discussions about Afghanistans sovereignty and foreign military presence.

#### WHY IN NEWS?

The Taliban cited the Doha Agreement to reject U.S. attempts to re-establish a presence at Bagram Air Base, insisting on respect for Afghanistans independence and territorial integrity as stipulated in the pact.

### **European Free Trade Association (EFTA)**

The European Free Trade Association (EFTA) consists of four member countries – **Switzerland, Norway, Iceland, and Liechtenstein**. Founded in 1960 as an alternative to the European Economic Community, EFTA focuses on free trade and economic integration among its members and with external partners. Unlike the EU, EFTA countries are not part of the EU customs union but have bilateral agreements with the EU and other countries. EFTA operates the European Economic Area (EEA) agreement with the EU, allowing participation in the single market. Liechtenstein is the smallest member by population and



area. EFTAs combined GDP is due to Switzerland and Norway's advanced economies.

#### WHY IN NEWS?

EFTA signed the Trade and Economic Partnership Agreement (TEPA) with India, marking India's first comprehensive trade deal with a group of developed European economies, promising investment and market access benefits.

### **G7 Critical Minerals Action Plan**

The G7 Critical Minerals Action Plan is a multilateral framework adopted by the Group of Seven nations to secure sustainable and resilient supply chains for minerals essential to industrial ecosystems. It emphasizes sustainability, diversification of sources, market transparency, and environmental responsibility. India's endorsement of the plan signals its commitment to these principles and opens avenues for practical cooperation with G7 countries. Critical minerals under this plan include lithium, cobalt, nickel, and rare earth elements, vital for green technologies, digital devices, and defense industries.

#### WHY IN NEWS?

India's endorsement of the G7 Critical Minerals Action Plan was noted in the EU report as part of strategic cooperation to secure raw materials for sustainable industrial growth.

### **Geo-economic Containment**

Geo-economic containment refers to the strategic use of economic tools to limit the rise or influence of a geopolitical rival. The concept was notably advocated by strategist **Edward Luttwak** as a way for the US to counter China's expanding global economic power. It includes trade restrictions, investment controls, and leveraging economic alliances to contain China's growth without direct military confrontation. This approach underpinned US policies during the Trump administration, which employed tariffs and export controls as part of a broader mercantilist strategy. Geo-economic containment blends economics and geopolitics to achieve national security objectives.

#### WHY IN NEWS?

Geo-economic containment is relevant as it shaped US mercantilist trade policies under Trump aimed at curbing China's economic and geopolitical expansion.

### **Global Gateway**

The **Global Gateway** is the European Union's flagship strategy to enhance smart, clean, and secure infrastructure worldwide. It focuses on digital, energy, and transport sectors, alongside health, education, and research systems. As of 2025, the Team Europe Global Gateway investment portfolio in India exceeds €15 billion, covering renewable energy, water, urban transport, and digital infrastructure. The initiative uses guarantees and blended finance to de-risk private-sector investments. The European Investment Bank (EIB) plays a major role in advancing these projects. Future expansions aim to support India's green and digital transitions, strategic value chains, and regional connectivity.

#### WHY IN NEWS?

Global Gateway is brought into light as the EU's main vehicle for scaling up investments in India, supporting modernization and green transitions under the ongoing EU-India trade and investment discussions.



## Grand Ethiopian Renaissance Dam (GERD)

The Grand Ethiopian Renaissance Dam (GERD) is Africa's largest hydroelectric dam, located on the Blue Nile near Ethiopia's border with Sudan. It stands **170 meters tall** and spans nearly **2 kilometers**. Construction began in 2011, costing about **\$4 billion**. GERD can hold **74 billion cubic meters of water** and generate **5,150 megawatts of electricity**, more than doubling Ethiopia's current capacity. It is Africa's largest dam by power capacity but ranks outside the global top 10. The dam is designed solely for hydroelectric power generation, not irrigation, so it does not consume water but releases it downstream.

### WHY IN NEWS?

Ethiopia inaugurated the GERD in September 2025, marking a major milestone amid regional tensions, especially protests from Egypt concerned about Nile water security.

## Hilsa Diplomacy

Hilsa diplomacy refers to Bangladesh's strategic use of hilsa fish exports to India as a diplomatic tool, especially during the Durga Puja festival. Initiated by Sheikh Hasina's government in 2012, it involves periodic bans and relaxations on hilsa exports to influence bilateral relations. The practice includes allowing limited exports during festivals despite broader bans, symbolizing goodwill and cultural ties. Since 2019, over 1,000 tonnes of hilsa from the Padma River have been exported annually to India before Durga Puja. This approach links fisheries management with diplomatic gestures, blending economic and cultural diplomacy between Bangladesh and India.

### WHY IN NEWS?

Bangladesh announced the export of 3,000 tonnes of hilsa fish to India ahead of Durga Puja 2025, continuing the tradition of hilsa diplomacy despite previous export bans.

## International Centre for Integrated Mountain Development (ICIMOD)

The **International Centre for Integrated Mountain Development (ICIMOD)** is an intergovernmental organization established in 1983, headquartered in Kathmandu, Nepal. It serves eight Hindu Kush Himalaya countries – Afghanistan, Bangladesh, Bhutan, China, Myanmar, Nepal, and Pakistan. ICIMOD focuses on sustainable mountain development, climate change adaptation, and disaster risk reduction. It conducts research, policy advocacy, and regional cooperation initiatives. ICIMOD manages the Hindu Kush Himalaya Monitoring and Assessment Programme and facilitates knowledge sharing among member countries. It plays a key role in promoting renewable energy, water resource management, and biodiversity conservation in the fragile mountain ecosystems of the HKH region.

### WHY IN NEWS?

ICIMOD launched a report on September 5, 2025, denoting the underexploited hydropower potential and renewable energy opportunities in the Hindu Kush Himalaya region during Asia-Pacific Clean Energy Week in Bangkok.

## International North-South Transport Corridor

The **International North-South Transport Corridor (INSTC)** is a multi-modal network of



ship, rail, and road routes connecting India, Iran, Russia, and Central Asia. Initiated in 2000, it aims to reduce transport time and costs between South Asia and Northern Europe by about 30%. The corridor passes through the Caspian Sea and includes the Chabahar Port in Iran, which India helped develop. INSTC enhances trade connectivity by bypassing longer routes through the Suez Canal. It supports economic integration and regional cooperation among member countries, facilitating faster access to markets in Russia and Central Asia.

#### WHY IN NEWS?

India brought into light INSTC as a key connectivity initiative during the 25th SCO summit, emphasizing its role in linking India with Afghanistan and Central Asia while respecting sovereignty.

### **Joint Security Coordination Mechanism (JSCM)**

The **Joint Security Coordination Mechanism (JSCM)** is a bilateral security body established under the U.S.-brokered peace agreement between Rwanda and the DRC. It was mandated to be set up within 30 days of the agreement to oversee conflict resolution and ensure cessation of hostilities. The JSCM is responsible for coordinating military disengagement, disarmament, and integration of armed groups into national forces. It aims to build mutual trust and monitor compliance with the peace accord. The mechanism is critical for stabilizing the eastern DRC region and preventing cross-border insurgencies linked to armed groups like M23.

#### WHY IN NEWS?

The JSCM was a key provision in the June 27 peace agreement between Rwanda and the DRC, intended to manage security cooperation and conflict settlement.

### **Kailash Manasarovar Yatra**

The **Kailash Manasarovar Yatra** is an annual pilgrimage to Mount Kailash and Lake Manasarovar in Tibet, sacred to Hindus, Buddhists, Jains, and Bon followers. It is organized by the Government of India and requires special permits due to the sensitive border area. The journey involves high-altitude trekking and is considered spiritually, symbolizing liberation from the cycle of life and death. The route passes through challenging terrain, including the Lipulekh Pass near the India-China border. The yatra has been a point of diplomatic negotiation between India and China, involving visa facilitation and border access agreements.

#### WHY IN NEWS?

During the 2025 SCO summit, India and China agreed to facilitate the Kailash Manasarovar Yatra as part of broader efforts to normalize bilateral ties and resolve trade and border issues.

### **Kunming Trilateral Mechanism**

The Kunming trilateral mechanism involves China, Pakistan, and Bangladesh collaborating on regional economic and security issues. Initiated to deepen multilateral ties in South Asia, it aims to enhance connectivity, trade, and strategic cooperation among the three



countries. Kunming, a city in Chinas Yunnan province, serves as a gateway for Chinas Belt and Road Initiative (BRI) into South Asia. The trilateral format represents Chinas shift from bilateral to multilateral engagement in the region, seeking to counterbalance Indias influence. It also reflects Chinas broader strategy to integrate South Asian countries under its geopolitical and economic frameworks.

#### WHY IN NEWS?

The Kunming trilateral is discussed in the context of Chinas evolving South Asia strategy, contrasting with India-China normalization efforts.

### Montevideo Convention

The **Montevideo Convention** of 1933 defines the criteria for statehood under international law. It specifies four essential qualifications – a permanent population, a defined territory, a government, and the capacity to enter into relations with other states. This convention is often cited in debates about recognition of disputed states, including Palestine. It was signed in Montevideo, Uruguay, by 19 American states and remains a foundational document for the legal definition of sovereignty. The convention's criteria are widely accepted but not legally binding on all UN member states. It plays a key role in diplomatic recognition and international legitimacy.

#### WHY IN NEWS?

The Montevideo Convention is referenced to explain the legal criteria for Palestinian statehood amid recent recognitions by several countries at the UN General Assembly.

### Multipolar Asia

Multipolar Asia describes a geopolitical framework where multiple powerful states or blocs coexist and influence the region, as opposed to dominance by a single superpower. Key players include China, Japan, Russia, and ASEAN countries. This concept promotes a balance of power, preventing hegemony and encouraging cooperation among diverse political and economic systems. Multipolarity affects regional security, economic policies, and diplomatic alignments. Countries may pursue strategic partnerships or alliances to enhance influence. India has expressed reservations about Chinas approach to multipolarity, reflecting concerns over regional dominance and the need for equitable power distribution.

#### WHY IN NEWS?

Indias reservations about Chinas approach to multipolar Asia were noted by EAM Jaishankar during discussions at the 2025 BRICS summit, emphasizing the need for fair and balanced regional dynamics.

### New York Declaration

The **New York Declaration** is a diplomatic document endorsed by various nations aiming to resolve the Israeli-Palestinian conflict peacefully. It emphasizes the two-state solution, calling for a sovereign, viable Palestinian state alongside Israel. The declaration urges Israel to halt settlement expansion, land grabs, and annexation in the Occupied Palestinian Territories, including East Jerusalem. It also stresses ending violence and



incitement against Palestinians and supports the Palestinian people's right to self-determination. The declaration was introduced at a high-level UN conference co-chaired by France and Saudi Arabia in July 2025 and circulated among member states for endorsement.

#### WHY IN NEWS?

India voted in favor of the UN resolution endorsing the New York Declaration, which was adopted by 142 nations, aiming to advance peace and the two-state solution in the Israeli-Palestinian conflict.

### Shanghai Cooperation Organisation

The **Shanghai Cooperation Organisation (SCO)** is a Eurasian political, economic, and security alliance founded in 2001 by China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. It focuses on counterterrorism, regional security, and economic cooperation. India and Pakistan joined as full members in 2017, expanding the group's influence. The SCO holds annual summits and military exercises to strengthen cooperation. It is the largest regional organization in terms of geographic coverage and population, representing over 40% of the world's population. The SCO has no formal military alliance but promotes joint security initiatives among member states.

#### WHY IN NEWS?

The SCO held a summit in Tianjin attended by China's Xi Jinping, India's Narendra Modi, and Russia's Vladimir Putin, showcasing its growing geopolitical importance amid shifting global alliances.

### Tawang

Tawang is a strategically important town in Arunachal Pradesh, near the border with China. It is a major center of **Lamaist Buddhism** and has strong cultural and religious significance. China claims Tawang as part of its territory, asserting border claims despite the presence of settled Indian populations. The town's status has been a sticking point in border negotiations, with China rejecting Article VII of the 2005 Political Parameters Agreement, which called for safeguarding the interests of settled populations. Tawang's location near the McMahon Line makes it a critical flashpoint in Sino-Indian relations.

#### WHY IN NEWS?

China's ongoing claim on Tawang continues to hinder border settlement talks, as reiterated during the 2025 Special Representatives negotiations.

### UN Peacekeeping Missions Training

Training for **United Nations peacekeeping missions** is a key component of joint military exercises like Sagarmatha Friendship. Participating forces practice **conflict de-escalation, civilian protection, and joint command structures**. Nepal is a contributor to UN peacekeeping, with thousands of troops deployed globally. Exercises improve readiness for multinational operations and enhance coordination with international forces. Such training includes scenario-based drills simulating peacekeeping challenges like insurgency, humanitarian aid, and ceasefire monitoring. The focus on peacekeeping



reflects Nepal's commitment to global security and China's increasing involvement in UN operations.

#### WHY IN NEWS?

The 2025 Sagarmatha Friendship exercise emphasizes training for UN peacekeeping missions, enhancing the operational capabilities of Nepali and Chinese forces.

### **Yarlung Zangbo Dam**

The **Yarlung Zangbo** is a major river flowing through Tibet, known as the Brahmaputra in India. China plans to build a **60 GW mega-hydropower dam** at the Great Bend in Medog county, Tibetan Autonomous Region. This dam project could affect downstream countries, especially India and Bangladesh, by altering water flow and availability. The region is geologically sensitive, raising concerns about seismic risks. China has denied Indian protests against the dam. The project is part of China's broader strategy to harness river resources for energy and geopolitical leverage in South Asia.

#### WHY IN NEWS?

China's planned mega-hydropower dam on the Yarlung Zangbo has raised tensions with India due to potential impacts on water security and regional geopolitics.

## **Social Development & Government Schemes**

### **Angikaar 2025**

Angikaar 2025 is a two-month outreach campaign launched in September 2025 under PMAY-U 2.0 to accelerate urban housing scheme implementation across India. It targets last-mile delivery by creating awareness, fast-tracking application verification, and expediting sanctioned house completion. The campaign covers over 5,000 Urban Local Bodies and includes door-to-door awareness, loan melas, cultural events, and community mobilization. It promotes the Credit Risk Guarantee Fund Trust for Low Income Housing (CRGFTLIH) and prioritizes beneficiaries from Special Focus Groups. The campaign also aligns with other government schemes like PM Surya Ghar – Muft Bijli Yojana, ensuring holistic development outcomes.

#### WHY IN NEWS?

Launched on 4th September 2025 by the Minister of Housing and Urban Affairs, Angikaar 2025 aims to speed up PMAY-U 2.0 implementation and promote housing benefits to urban vulnerable populations nationwide.

### **Aspirational Districts Programme**

The **Aspirational Districts Programme** was launched in 2018 by the Government of India to rapidly transform underdeveloped districts. It focuses on improving key sectors such as health, education, agriculture, and infrastructure through data-driven monitoring and collaborative governance. The programme prioritizes 117 districts identified based on poor socio-economic indicators. It emphasizes convergence of central and state schemes, local leadership, and community participation. The initiative uses real-time data dashboards to track progress and encourage competition among districts. It has accelerated improvements in maternal health, literacy rates, and access to basic services



in these regions, aiming to reduce regional disparities.

#### WHY IN NEWS?

The programme is mentioned for its role in extending vocational training and skill development initiatives to underserved districts, aligning with NITI Aayog's human capital mission.

### **ASPIRE Program**

ASPIRE (Accelerating Strategic Progress in Research and Education) is a government initiative aimed at encouraging innovation and research in education and allied sectors. It encourages collaboration between defence and civilian organizations to develop dual-use technologies. ASPIRE promotes the use of emerging ed-tech solutions and strategic research to address critical challenges in education. The program supports scaling innovations and integrating start-ups into mainstream education and defence ecosystems, enhancing India's indigenous technology capabilities.

#### WHY IN NEWS?

ASPIRE is the driving force behind the MoU between IDEX-DIO and EdCIL to develop and deploy cutting-edge dual-use technologies linking defence and education sectors.

### **Coconut Development Board**

The **Coconut Development Board (CDB)** is an Government of India agency established in 1981 under the Ministry of Agriculture. It focuses on the development and promotion of coconut cultivation and related industries in India. The board provides financial aid, technical support, and coordinates research to increase coconut production and productivity. It also promotes the use of coconut products and supports farmers with subsidies for saplings, replanting, and technology adoption. Kerala, a major coconut-growing state, is a key operational area for the CDB. The board plays a vital role in sustaining the livelihoods of millions dependent on coconut farming in India.

#### WHY IN NEWS?

The Coconut Development Board announced increased financial aid for coconut farmers in Kerala, raising subsidies for saplings and replanting to boost production on World Coconut Day 2025.

### **Common Service Centres (CSCs)**

Common Service Centres (CSCs) are government-established facilities in rural and remote areas that provide digital access to various public services. They act as enrollment points for schemes like the PM Vishwakarma scheme, enabling artisans to apply for loans and training. CSCs serve as a bridge between citizens and government programs, offering services like bill payments, certificates issuance, and grievance redressal. Managed under the Digital India initiative, CSCs aim to enhance accessibility and transparency. They are staffed by Village Level Entrepreneurs (VLEs) trained to assist users with digital literacy and government services.

#### WHY IN NEWS?

CSCs are integral to enrolling artisans in the PM Vishwakarma scheme, facilitating application and verification processes at the grassroots level.



## Department of Agricultural Research and Education (DARE)

The Department of Agricultural Research and Education (DARE) operates under India's Ministry of Agriculture and Farmers Welfare. Established in 1973, DARE oversees agricultural research and education across the country. It administers the Indian Council of Agricultural Research (ICAR), which coordinates national agricultural research institutes and universities. DARE focuses on developing sustainable farming practices, improving crop varieties, and promoting agricultural education. It plays an important role in policy formulation and implementation of research findings. It is lesser-known outside academic and governmental circles but is very important in India's agricultural advancements.

### WHY IN NEWS?

DARE's Secretary is participating in the National Agriculture Conference – Rabi Abhiyan 2025 to discuss strategies for the Rabi crop season.

## DigiLocker

DigiLocker is a digital public infrastructure platform launched by the Government of India to provide citizens with a secure cloud-based repository for storing and sharing official documents and certificates. It addresses interoperability, data security, and multi-stakeholder coordination challenges. DigiLocker supports paperless governance by enabling access to digital documents anytime and anywhere. It integrates with various government agencies and service providers to facilitate seamless verification and sharing of documents. The platform is a key element in the Digital India initiative and supports Sustainable Development Goals by promoting transparency, inclusivity, and efficiency in public service delivery.

### WHY IN NEWS?

DigiLocker has been integrated Pan-India with e-District platforms, allowing citizens nationwide to access thousands of digital services conveniently and securely.

## District Mineral Foundations

District Mineral Foundations (DMFs) are statutory bodies established under the Mines and Minerals (Development and Regulation) Act, 2015 in India. They are funded by contributions from mining lease holders, typically 30% of royalty payments, to ensure sustainable development in mining-affected areas. DMFs focus on health, education, infrastructure, and environmental restoration in local communities. These foundations operate at the district level, providing a decentralized approach to resource management and social welfare. DMFs also engage in promoting alternative livelihoods and rehabilitation for displaced populations. Their governance includes government officials, elected representatives, and community members to ensure transparency and accountability.

### WHY IN NEWS?

DMFs are brought into light as part of India's sustainable and responsible mining framework supporting local development in regions impacted by rare earth element mining.



## Drone Didi Scheme

The Drone Didi Scheme is an initiative aimed at empowering women farmers by training them to use drones for agricultural tasks such as crop monitoring, spraying pesticides, and soil health assessment. The scheme focuses on self-help groups, promoting technological adoption among rural women. It addresses labor shortages and enhances precision farming. Drones improve efficiency and reduce manual labor in farming operations. The program is part of a broader push to integrate digital technologies into Indian agriculture, especially to increase the productivity and agency of women farmers who traditionally have limited access to mechanization.

### WHY IN NEWS?

Mentioned as a tool to help women farmer self-help groups use drones, improving agricultural productivity and agency in Indias farming sector.

## e-Shram Portal

The **e-Shram Portal** is a digital public platform launched by the Government of India to register unorganized sector workers and provide them access to social security benefits. It collects data on millions of informal workers, enabling targeted welfare schemes and labor market interventions. The portal integrates with other government databases to streamline service delivery and improve labor market efficiency. It supports policy formulation by providing real-time data on the workforce. The platform is designed for scalability and adaptation by other countries as a model for enhancing worker welfare through digital innovation.

### WHY IN NEWS?

The e-Shram Portal was showcased during the 2025 International Labour Conference and mentioned in the MoU signing event with the ILO as a key digital public good with global adaptation potential.

## eSanjeevani Telemedicine

is Indias government-backed telemedicine platform launched in 2020 during the COVID-19 pandemic. It enables remote consultation between patients and doctors via video calls, reducing the need for physical visits. The platform operates in two modes – eSanjeevani AB-HWC for doctor-to-patient services at Health and Wellness Centres, and eSanjeevani OPD for doctor-to-doctor consultations. Over **3 crore consultations** have been conducted through it, expanding healthcare access in rural and remote areas. It integrates with the Ayushman Bharat scheme and supports primary healthcare delivery, mental health services, and non-communicable disease management. The system uses secure, interoperable technology compliant with national health data standards.

### WHY IN NEWS?

eSanjeevani is cited as a critical tool in Indias pandemic response and ongoing digital health infrastructure development led by NITI Aayog.

## Frontier 50 Initiative

The **Frontier 50 Initiative** is a program by NITI Aayog targeting 50 Aspirational



Districts/Blocks in India. It supports these regions in selecting and deploying frontier technology use cases from the Frontier Tech Repository. The initiative aims to accelerate the saturation of services across themes defined by the Aspirational District Program (ADP) and Aspirational Block Program (ABP). It focuses on grassroots-level technology adoption to improve governance, healthcare, education, and livelihood outcomes, encouraging inclusive growth and innovation in underserved areas.

#### WHY IN NEWS?

Announced during the launch of the AI for Viksit Bharat Roadmap, the Frontier 50 Initiative is designed to scale frontier technology impact in priority districts for accelerated development.

### **Gender Budgeting**

Gender budgeting involves applying a gender lens to all public expenditure, ensuring resources are allocated to address gender disparities across sectors like education, infrastructure, and energy. It goes beyond earmarking funds for women-specific schemes, integrating gender considerations into every rupee spent. This approach requires gender-disaggregated data to identify gaps and measure impact. Effective gender budgeting promotes equitable development by targeting systemic barriers and supporting women's economic and social empowerment. It is a tool for governments to align fiscal policies with gender equality goals, driving inclusive growth and reducing disparities in access to opportunities and services.

#### WHY IN NEWS?

Gender budgeting has gained attention as part of efforts to mainstream gender perspectives into all government spending, following the example set by Uttar Pradesh's WEE Index and broader national gender equality initiatives.

### **Gender Responsive Budgeting**

Gender Responsive Budgeting (GRB) is a socio-economic approach that integrates gender considerations into the planning, allocation, and monitoring of public resources. It ensures that budgets address women's specific needs in healthcare, education, skills, and entrepreneurship. GRB promotes social justice by institutionalizing **Gender Budget Cells** in ministries and state departments to track gender-disaggregated data and outcomes. It transforms budgeting from a mere financial exercise into a tool for inclusive growth and equality. GRB has been progressively adopted in India to mainstream women's empowerment in economic and social policies.

#### WHY IN NEWS?

The Lok Sabha Speaker emphasized the importance of Gender Responsive Budgeting at the national conference on women empowerment, denoting its role in inclusive economic development.

### **International Day of Sign Languages**

The International Day of Sign Languages is observed annually on 23rd September, declared by the United Nations General Assembly in 2017. It aims to raise awareness



about the importance of sign languages in the realization of human rights for Deaf people worldwide. The day promotes linguistic identity, equality, and inclusion for Deaf communities, emphasizing that sign language rights are human rights. Each year features a theme to focus global attention on specific issues related to sign language access, education, and empowerment. It encourages governments and organizations to improve policies and services for Deaf individuals.

#### WHY IN NEWS?

The International Day of Sign Languages is being celebrated with events and initiatives launched by the Government of India to empower the Deaf community.

### Janhit Abhiyan

Janhit Abhiyan is a social organization active since 2009, advocating for caste enumeration in India's census. It has led sustained campaigns demanding the inclusion of caste data to support affirmative action and social justice policies. The group emphasizes the role of caste data in addressing inequalities and ensuring fair political representation. Janhit Abhiyan's advocacy influenced political discourse, especially in Bihar, where caste census demands gained traction. Its efforts show the importance of data-driven policy to combat caste-based discrimination and improve developmental outcomes for marginalized communities.

#### WHY IN NEWS?

Janhit Abhiyan's campaigns have been a key factor behind the BJP-led governments' recent reversal to include caste enumeration in the upcoming census, particularly ahead of Bihar's assembly elections.

### Jeevika Scheme

Jeevika is a World Bank-assisted initiative launched in Bihar in 2006 focused on women's social and economic empowerment. It promotes the formation of self-help groups (SHGs), with over 11 lakh SHGs and 1.40 crore women members as of 2025. Jeevika supports financial inclusion by providing microloans and training to women in rural areas. It also implements the National Urban Livelihood Mission in Bihar, aiding urban poor women. Jeevika has been instrumental in increasing women's participation in local economies and improving their livelihoods through collective savings and credit activities.

#### WHY IN NEWS?

Jeevika's continuing role in empowering women financially is brought into light alongside the new Mukhyamantri Mahila Rojgar Yojna scheme launched in Bihar in 2025.

### Just Rights for Children

Just Rights for Children is a network consisting of over **250 NGOs** focused on child protection in India. It coordinates efforts among government bodies, civil society, and grassroots organizations to address child rights issues, including child marriage. The network conducts research, advocacy, and awareness campaigns across multiple states. It utilizes data collection from frontline workers like ASHA and anganwadi workers to inform policies. Founded to unify diverse child protection efforts, it emphasizes evidence-based



approaches. Its 2025 report brought into light decline in child marriage rates. The network operates through partnerships with schools, panchayats, and local governments to amplify outreach and enforcement.

#### WHY IN NEWS?

Just Rights for Children released the 2025 report "Tipping Point to Zero," showing a 69% decline in child marriage among girls in India, spotlighting their role in this social transformation.

### Lambadi Community

The **Lambadi** are a traditionally nomadic tribe primarily found in Telangana, Andhra Pradesh, and parts of Karnataka. They are known for their vibrant attire and intricate embroidery work. Historically, they were involved in cattle trading and transport. The Lambadi speak a dialect of the Rajasthani language, reflecting their migration from Rajasthan centuries ago. Despite Scheduled Tribe status since 1976, their socio-economic conditions vary widely, with many engaged in agriculture and small-scale trade. They have a rich oral tradition and celebrate unique festivals like Teej and Poleramma Jatara. Their inclusion as Scheduled Tribes has been contested due to overlaps with other tribal groups.

#### WHY IN NEWS?

The Supreme Court is hearing a plea challenging the Scheduled Tribe status granted to the Lambadi community, impacting reservation benefits and social access in Telangana.

### Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

The **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**, enacted in 2005, is one of the world's largest social security programs. It guarantees at least 100 days of wage employment annually to rural households in India. The act aims to enhance livelihood security, reduce rural poverty, and create sustainable rural infrastructure through public works. MGNREGA is funded by the central government and administered by local bodies. It emphasizes transparency and accountability through social audits and digital monitoring. The program has been credited with empowering marginalized communities, especially women and lower castes, while addressing seasonal unemployment in rural areas.

#### WHY IN NEWS?

MGNREGA is cited as a key example of India's hybrid economic model, blending socialist welfare with capitalist market forces.

### MAITRIs Programme

The **MAITRIs programme** is a grassroots initiative in India aimed at training local resource persons to deliver breeding and animal health services in remote and underserved rural areas. It empowers community members with technical knowledge and skills for artificial insemination, disease prevention, and animal husbandry practices. MAITRIs increase access to veterinary services where professional veterinarians are scarce, improving livestock productivity and farmers' livelihoods. The program also encourages women's participation and leadership in rural animal health delivery. It



complements broader livestock development goals and supports sustainable rural economies.

#### WHY IN NEWS?

The MAITRIs programme was mentioned by India's Union Minister at the FAO conference as a key grassroots effort strengthening livestock breeding services and rural livelihoods.

### **Manodarpan Initiative**

Manodarpan is a mental health initiative launched by India's Ministry of Education under the Atmanirbhar Bharat Abhiyan to provide psychosocial support to students, teachers, and families. It offers counseling services, awareness campaigns, and capacity building for educators and school staff. The program targets stress, anxiety, and emotional challenges exacerbated by the COVID-19 pandemic and academic pressures. Manodarpan operates through helplines, online platforms, and community engagement, aiming to create a supportive educational environment. It is part of a broader effort to integrate mental health care within the education sector and reduce suicide risk among young people.

#### WHY IN NEWS?

Manodarpan is cited as a key government initiative supporting mental health and suicide prevention in schools and educational institutions across India.

### **Maternal Mortality Ratio (MMR)**

The **Maternal Mortality Ratio (MMR)** is defined as the number of maternal deaths per 100,000 live births during a given time period. It is a key health indicator reflecting the quality of maternal healthcare services and overall public health conditions. MMR is calculated by dividing maternal deaths by live births and multiplying by 100,000. It is distinct from maternal mortality rate, which is deaths per total female population. MMR is sensitive to changes in birth rates and health interventions, and can be affected by external factors such as pandemics. It is widely used to monitor progress towards maternal health goals globally.

#### WHY IN NEWS?

Kerala's MMR increased from 18 to 30 in recent years due to declining live births and stable maternal death numbers, with a spike during the COVID-19 pandemic.

### **Ministry of Rural Development**

The **Ministry of Rural Development (MoRD)** is an Government of India ministry responsible for the formulation and administration of policies related to rural areas. It oversees programs for poverty alleviation, infrastructure development, and social welfare in villages. MoRD implements flagship schemes like MGNREGA (employment guarantee), PMAY-G (housing), and the Amrit Sarovar Mission. It works closely with state governments and local bodies to ensure effective delivery of services. The ministry also promotes capacity building and technical workshops to enhance rural governance and community participation in developmental projects.

#### WHY IN NEWS?

MoRD conducted a national workshop on the Amrit Sarovar Mission in New Delhi to discuss technical enhancements and community-driven sustainability.



## Mission Karmayogi Platform

Mission Karmayogi is an Government of India initiative launched in 2021 to enhance the capacity and capabilities of civil servants through digital learning. It provides a comprehensive online platform offering training modules, including sector-specific case studies, model tender clauses, and mock evaluations. The platform supports skill development for procurement officials to integrate environmental and sustainability criteria into government tenders effectively. It uses AI-driven personalized learning paths and aims to transform public service delivery by encouraging a culture of continuous learning and innovation.

### WHY IN NEWS?

Mission Karmayogi is mentioned as a scalable tool for training procurement officers to embed green criteria into public purchasing decisions.

## National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED)

NAFED is the apex cooperative organization in India, established in 1958, to promote cooperative marketing of agricultural produce. It procures, stores, and sells commodities like onions to stabilize prices and support farmers. NAFED operates under the Ministry of Agriculture and coordinates with state-level cooperatives. It manages buffer stocks and implements government price support schemes. NAFED also facilitates export promotion and market intelligence. Despite its role, challenges include storage losses, delayed payments to farmers, and balancing market intervention without distorting prices. NAFEDs operations influence agricultural commodity markets and farmer incomes in India.

### WHY IN NEWS?

NAFEDs current sale of buffer stock onions in urban markets has contributed to falling prices, intensifying the crisis faced by Maharashtra onion farmers demanding government intervention.

## National Cooperation Policy

The National Cooperation Policy is a recent government initiative aimed at strengthening cooperative institutions in India to make them globally competitive. It emphasizes capacity building, infrastructure development, quality compliance, and market access for cooperatives. The policy seeks to synergize efforts of various ministries, including Cooperation and Commerce, to empower cooperatives in sectors such as agriculture, dairy, and food processing. It promotes sustainable rural livelihoods by integrating cooperatives into global value chains. The policy also encourages the use of technology, data analytics, and export facilitation to enhance the performance and reach of cooperative enterprises.

### WHY IN NEWS?

The National Cooperation Policy provides the framework under which NCEL and APEDA signed their MoU to boost cooperative-led agricultural exports.



## National Digital Livestock Mission – Bharat Pashudhan

The **National Digital Livestock Mission (NDLM)**, branded as Bharat Pashudhan, is a digital initiative launched by India to create a comprehensive digital ID system for livestock. It enables traceability, early disease detection, and safety assurance of animal products. By 2025, over **353 million animals** and **94 million livestock owners** have been registered. The system integrates data on breeding, vaccination, health, and movement to improve livestock management and disease control. NDLM supports policy-making, enhances transparency in livestock markets, and strengthens biosecurity. It is a pioneering example of digital transformation in the agrarian sector.

### WHY IN NEWS?

Indias National Digital Livestock Mission was showcased as a key innovation at the FAO conference for its role in digital traceability and disease control in the livestock sector.

## National Education Policy (NEP) 2020

The National Education Policy (NEP) 2020 is a comprehensive framework aiming to transform India's education system. It emphasizes **multidisciplinarity, global competitiveness**, and local cultural roots. NEP 2020 advocates for the establishment of foreign university campuses in India with autonomy and regulatory clarity, promoting international collaboration and quality education. It encourages hybrid learning models using digital public infrastructure and reforms in accreditation to focus on outcomes. The policy targets expanding higher education access, improving research, and encouraging innovation aligned with India's socio-economic goals.

### WHY IN NEWS?

NEP 2020 underpins the recent policy changes allowing foreign universities to open campuses in India, marking a strategic shift in the country's education sector.

## National Family Health Survey

The **National Family Health Survey (NFHS)** is a large-scale, multi-round survey conducted in India to collect data on population, health, and nutrition. The survey began in 1992-93 and is conducted approximately every 5 years by the Ministry of Health and Family Welfare. It provides critical statistics on fertility, mortality, family planning, maternal and child health, nutrition, and lifestyle indicators. The NFHS-5 (2019-21) included new modules on non-communicable diseases and obesity, reflecting emerging health challenges. It is a primary source for policymakers and researchers to design and evaluate health programs across Indias diverse states and populations.

### WHY IN NEWS?

The NFHS data revealed a sharp rise in overweight and obesity rates among Indian children, adolescents, and adults, denoting a growing public health concern beyond traditional demographic groups.

## National Health Account (NHA)

The **National Health Account (NHA)** is a satellite account of the National Income Account (NIA) in India that tracks health expenditure flows from various sources to providers over



a specified period and geography. It primarily uses data from the National Sample Survey (NSS) and supplements it with National Family Health Surveys (NFHS) and private medicine sales databases. The NHA reported a decline in out-of-pocket expenditure (OOPE) from 64% in 2013-14 to 39% in 2021-22. However, it faces criticism for underestimating costs during COVID-19 and relying heavily on the NSS 75th round (2017-18) data, which may not fully capture current realities.

#### WHY IN NEWS?

The NHA's reported decline in OOPE is under scrutiny due to contrasting data from other surveys like CMIE and Consumer Expenditure Survey, which indicate rising health care costs and expenditure burdens on Indian households.

### **National Initiative on Water Security**

The **National Initiative on Water Security** is a government program launched in 2025 to enhance water conservation in India's rural areas. It mandates that a fixed portion of MGNREGA funds be spent on water-related projects, with **65% allocated to over-exploited and critical rural blocks** and **40% to semi-critical blocks**. The initiative targets sustainable water management to benefit agriculture, livestock, wildlife, and the environment. It aligns with Prime Minister Narendra Modi's policy focus on water conservation and rural development, aiming to improve water security for future generations.

#### WHY IN NEWS?

The initiative was jointly launched by the Ministers for Agriculture and Jal Shakti to prioritize water conservation funding under MGNREGA.

### **National Nutrition Week**

National Nutrition Week is observed annually in India from **1st to 7th September**. It is organized by the **Ministry of Health and Family Welfare** to promote nutrition literacy and healthy eating habits. The week emphasizes the importance of food beyond energy, focusing on immunity and long-term health. Themes vary yearly; in 2025, the theme was **"Eat right for a better life."** The initiative marks common dietary staples like sugar, salt, and oil, addressing their roles and risks. It aims to reduce overconsumption linked to obesity, diabetes, hypertension, and cardiovascular diseases in India.

#### WHY IN NEWS?

National Nutrition Week 2025 was recently celebrated with a focus on reducing excess sugar, salt, and oil consumption in Indian diets to combat rising lifestyle diseases.

### **National Patient Safety Implementation Framework**

The **National Patient Safety Implementation Framework (2018-25)** is India's strategic plan to improve patient safety across healthcare systems. It outlines steps for adverse event reporting, embedding safety protocols in clinical programs, and strengthening healthcare quality. The framework focuses on multidisciplinary coordination, infection control, medication management, and patient rights. It aims to close gaps in provider-patient communication and empower patients as active participants. Despite progress,



implementation remains uneven, with less than 5% of hospitals fully accredited under its guidelines. The framework encourages integration of safety practices in medical education and healthcare policy to build a sustainable safety culture nationwide.

#### WHY IN NEWS?

The framework is nearing its final phase in 2025, with renewed calls to accelerate patient safety improvements, increase hospital accreditation, and pilot Patient Advisory Councils in India.

### Operation Rahat

Operation Rahat is a humanitarian assistance and disaster relief (HADR) mission conducted by the Indian Army, primarily focused on rescue, evacuation, and relief during natural disasters like floods and earthquakes. It involves coordination between army units, paramilitary forces, civil administration, and disaster response agencies such as NDRF and SDRF. The operation employs a combination of air and ground assets including helicopters, engineer task forces, and medical teams to provide emergency aid, restore infrastructure, and ensure supply of essentials. Since inception, Operation Rahat has been instrumental in saving thousands of lives and restoring connectivity in disaster-hit regions across India.

#### WHY IN NEWS?

Operation Rahat is currently active in Punjab, Himachal Pradesh, and Jammu and Kashmir, conducting 82 HADR missions, evacuating over 6,000 people, and delivering essential supplies amid severe flooding.

### Oraon Tribe

The **Oraon tribe** is an indigenous community primarily found in Jharkhand, Chhattisgarh, Odisha, and West Bengal. They speak Kurukh, a Dravidian language, and practice a mix of animism and Hinduism. Oraon society follows customary laws regulating inheritance, marriage, and social conduct. Traditionally, daughters have been excluded from inheriting paternal property. The tribe is known for its agricultural practices, festivals like Sarhul, and distinctive music and dance. The Jharkhand High Court ruled in 2022 that no proven custom excludes daughters from inheritance, marking legal shift in favor of women's property rights within the Oraon community.

#### WHY IN NEWS?

The Jharkhand High Courts 2022 ruling in Prabha Minz vs Martha Ekka upheld property rights for Oraon women, challenging customary exclusions of female inheritance.

### Particularly Vulnerable Tribal Groups (PVTGs)

PVTGs are a sub-category of Scheduled Tribes in India, identified by **declining or stagnant population, geographical isolation, pre-agrarian practices** like hunting and gathering, **economic backwardness**, and **low literacy**. The category was created following the Dhebar Commission (1960-61) recommendations. Initially, 52 groups were recognized during the Fifth Five-Year Plan (1974-79); 23 more were added in 2006, totaling 75 groups. PVTGs are spread across 18 states and the Andaman and Nicobar Islands.



Many are not separately enumerated in censuses, complicating targeted welfare schemes.

#### WHY IN NEWS?

The Ministry of Tribal Affairs requested the Registrar General of India to conduct a separate enumeration of PVTGs in the upcoming Census to improve targeted welfare schemes like PM JANMAN.

### Periodic Labour Force Survey (PLFS)

The **Periodic Labour Force Survey (PLFS)** is an annual survey conducted by the National Statistical Office (NSO) of India since 2017-18. It replaced the quinquennial Employment-Unemployment Surveys to provide more frequent and detailed data on employment, unemployment, and labour force participation. PLFS covers both urban and rural sectors and provides state-wise, sectoral, and demographic employment data. It uses a rotating panel design, interviewing households four times in a year to capture seasonal employment variations. The survey data helps in policy formulation and tracking employment trends. It is the primary source for labour market statistics in India post-2017.

#### WHY IN NEWS?

PLFS data from 2017-18 to 2023-24 revealed trends in India's labour force participation, employment growth, and unemployment decline, influencing current employment policy debates.

### PM-DevINE Scheme

The **PM-DevINE (Prime Ministers Development Initiative for North East)** is a central government scheme aimed at accelerating development in Northeast India. It focuses on infrastructure, horticulture, and livelihood projects to improve connectivity and economic growth. Under PM-DevINE, the 45-km Aizawl Bypass Road was sanctioned to ease traffic and boost trade. The scheme also funds rural roads, health, education, and market access projects. It integrates with other regional initiatives like NESIDS to enhance agricultural productivity and support farmers, especially in horticulture and spice cultivation, including ginger and dragon fruit.

#### WHY IN NEWS?

PM Modi laid the foundation stone for the Aizawl Bypass Road under PM-DevINE during the railway inauguration event, denoting ongoing development efforts in Mizoram.

### Poshan Maah

Poshan Maah is an annual nutrition awareness campaign observed in India, primarily during September, initiated under the POSHAN Abhiyaan (National Nutrition Mission). It focuses on improving nutritional outcomes for children, pregnant women, and lactating mothers through community-level activities. The campaign promotes breastfeeding, balanced diets, micronutrient supplementation, and hygiene practices. Anganwadis, the rural child care centers, play a vital role in Poshan Maah by organizing nutrition-related events and counseling sessions. The initiative targets malnutrition reduction and aims to build awareness about health and nutrition among vulnerable populations across the



country.

#### WHY IN NEWS?

Poshan Maah is being observed at Anganwadis as part of the Swasth Nari Sashakt Parivar Abhiyaan to promote nutrition and health awareness.

### **Poshan Tracker App**

The Poshan Tracker is a centralized digital platform launched by the Government of India in 2021 to monitor nutrition initiatives under the ICDS. It requires Anganwadi Workers to upload periodic updates on children's nutritional status, including biometric data and e-KYC verification. The app integrates Facial Recognition Software (FRS) to authenticate beneficiaries before distributing Take Home Rations. The system aims to prevent fraud but faces technical issues such as face-matching errors, poor data processing on low-end devices, and unreliable network connectivity. These challenges disrupt welfare delivery and complicate frontline workers roles.

#### WHY IN NEWS?

The Poshan Trackers integration with FRS has sparked debate over its impact on Anganwadi workers and beneficiaries, with concerns about technological barriers and exclusion.

### **Pradhan Mantri Jan Arogya Yojana (PMJAY)**

Launched in 2018 under the Ayushman Bharat scheme, **PMJAY** is India's largest government-funded health insurance program. It provides coverage of up to ₹5 lakh per household annually for secondary and tertiary inpatient care. PMJAY targets economically vulnerable families, covering nearly 59 crore individuals by 2023-24 with an annual budget of around ₹12,000 crore. The scheme empanels both public and private hospitals, with about two-thirds of spending directed to private providers. PMJAY excludes outpatient care and faces challenges such as low utilization rates, delayed reimbursements, hospital withdrawals, and reports of fraud and discrimination.

#### WHY IN NEWS?

PMJAY's rapid growth and budget expansion are discussed alongside concerns about its effectiveness, utilization, and impact on India's health system.

### **Rashtriya Bal Swasthya Karyakram (RBSK)**

Rashtriya Bal Swasthya Karyakram (RBSK) is a Government of India initiative launched in 2013 aimed at early identification and intervention for children from birth to 18 years. It screens children for 4 Ds – Defects at birth, Diseases, Deficiencies, and Development delays including disability. The program operates through mobile health teams and fixed health facilities, collaborating with school health programs and PHCs. It integrates with other child health initiatives like the Integrated Child Development Services (ICDS). RBSK also provides free treatment for detected conditions through district hospitals and medical colleges, ensuring accessibility even in remote areas. It is an important component of child health surveillance in India.

#### WHY IN NEWS?

The text marks PHC doctors collaboration with RBSK Medical Officers in school health



programs, emphasizing their role beyond clinical care in public health initiatives.

### **Rashtriya Gokul Mission**

The **Rashtriya Gokul Mission** was launched by the Government of India in 2014 to conserve and develop indigenous bovine breeds. It focuses on breed improvement, conservation, and sustainable development of native cattle. The mission aims to enhance milk production and productivity while preserving genetic diversity. It supports infrastructure development, such as semen stations and breeding centers, and promotes scientific breeding techniques. The mission also emphasizes farmers' capacity building and marketing support for indigenous dairy products. It is implemented by the Department of Animal Husbandry and Dairying under the Ministry of Fisheries, Animal Husbandry and Dairying.

#### WHY IN NEWS?

The Rashtriya Gokul Mission is in news due to the inauguration of a Sex Sorted Semen facility at Purnea, Bihar, established under this mission to benefit dairy farmers in Eastern and North-Eastern India.

### **Rashtriya Kishor Swasthya Karyakram (RKSK)**

RKSK is a national adolescent health program launched by the Indian Ministry of Health to address the physical, mental, and emotional well-being of adolescents aged 10-19 years. It focuses on nutrition, sexual and reproductive health, substance abuse prevention, and mental health promotion. RKSK operates through peer educators, school health programs, and community outreach. It emphasizes early identification of mental health issues and links adolescents to counseling and health services. The program also addresses suicide prevention by promoting resilience and life skills. RKSK is integrated with other health and education initiatives to create a supportive environment for youth development.

#### WHY IN NEWS?

RKSK is mentioned as important national initiative contributing to suicide prevention and mental health support among Indian adolescents.

### **Sanchar Saathi**

Sanchar Saathi is a government portal and mobile app launched by India's Department of Telecommunications to help citizens report and manage fraudulent mobile connections. It allows users to view all mobile connections registered in their name, report unauthorized SIMs, and request disconnection of suspicious numbers. The platform integrates with telecom operators and law enforcement agencies to facilitate quick action against fraud. Since its launch, Sanchar Saathi has contributed to disconnecting over 2.84 crore fraudulent mobile connections, playing an important role in telecom cybersecurity and consumer protection.

#### WHY IN NEWS?

Sanchar Saathi is referenced as a key component of the Digital Intelligence Platform that supports real-time fraud detection and prevention in the new DoT-FIU-IND partnership.



## Scheduled Five Area States

The **Scheduled Five Area States** refer to regions in India with tribal populations governed under the Fifth Schedule of the Constitution. These states include Chhattisgarh, Jharkhand, Odisha, Madhya Pradesh, and Maharashtra. The Fifth Schedule provides special protections for tribal communities, allowing them to be governed by their customary laws in matters like marriage, succession, and land ownership. Customary laws in these areas often exclude women from inheriting ancestral property. The administration of these areas involves the role of Tribal Advisory Councils and Gram Sabhas to protect tribal interests, though implementation and enforcement of rights vary widely.

### WHY IN NEWS?

The article marks the lack of statutory property rights for tribal women in Scheduled Five Area States, emphasizing the gender disparity in land ownership.

## Shakti Scheme

The **Shakti scheme** offers free travel for women on Karnataka State Road Transport Corporation (KSRTC) buses. It records an average of **1.95 lakh women passengers daily** in Mandya district alone. The scheme has generated an additional **₹424 crore** in KSRTC revenue. It promotes women's mobility for education, employment, and social activities, enhancing empowerment and independence. The program is part of Karnataka's five guarantee schemes and supports gender equality by reducing travel costs for women, encouraging their active participation in public life and economic activities.

### WHY IN NEWS?

The Shakti scheme's usage and financial impact were reported at a Mandya district review meeting, denoting its role in women's empowerment and KSRTC revenue growth.

## Shompen Tribe

The **Shompen tribe** is a Particularly Vulnerable Tribal Group (PVTG) residing exclusively on Great Nicobar Island. They live in isolated forest areas and maintain a hunter-gatherer lifestyle with minimal outside contact. The Shompen have distinct languages and customs, and their population is estimated to be fewer than 500 individuals. They hold customary rights over forest lands under the Forest Rights Act (2006), granting them authority to protect and manage these ecosystems. The tribe's social and economic existence depends heavily on undisturbed forest habitats, which are highly sensitive to external disruptions and large-scale development projects.

### WHY IN NEWS?

The Shompen tribe faces displacement and loss of forest rights due to the Great Nicobar mega-infrastructure project, which threatens their ancestral lands and survival.

## Sickle Cell Disease (SCD)

Sickle Cell Disease is a hereditary blood disorder caused by a mutation in the hemoglobin gene, leading to abnormally shaped red blood cells. These cells block blood flow, causing pain, anemia, organ damage, and increased infection risk. SCD disproportionately affects



Adivasi and Dalit communities in India. The disease's severity varies, with symptoms ranging from mild to life-threatening. It is diagnosed through blood tests, including hemoglobin electrophoresis. Treatment includes pain management, blood transfusions, and hydroxyurea medication. Life expectancy is reduced, and recurrent hospitalizations disrupt education and employment. SCD is often under-recognized in disability policies due to its fluctuating symptoms.

#### WHY IN NEWS?

The Government of India revised disability guidelines in 2024, recognizing SCD but excluding it from job reservation quotas, sparking criticism regarding disability rights and inclusion.

### **Socio Economic and Caste Census (SECC) 2011**

The Socio Economic and Caste Census (SECC) 2011 was a comprehensive survey conducted alongside the Census to collect detailed data on socioeconomic status and caste demographics. It used handheld tablets provided by Bharat Electronics Limited for data collection, a pioneering use of digital technology at the time. SECC data has been used for targeted welfare schemes and policy planning. It was the first major effort to enumerate individual castes since 1931. The SECC covers housing conditions, economic activity, education, and caste information, providing a multi-dimensional profile of Indian households.

#### WHY IN NEWS?

The 2027 Census will count individual castes for the first time since SECC 2011, which used digital devices for data collection.

### **Solar Didi Initiative**

The **Solar Didi** initiative is a women empowerment program linked to India's solar energy sector, launched under PM Modi's vision. It aims to involve women in the clean energy transition by training them in solar technologies and applications. The program promotes gender inclusion in renewable energy industries and supports skill development for women across India and internationally. It aligns with cultural events like Navratri and Seva Parv, symbolizing divine feminine energy and collective service. Solar Didi encourages leadership roles for women in solar manufacturing, installation, and maintenance, contributing to socio-economic empowerment and sustainable development.

#### WHY IN NEWS?

The Minister brought into light Solar Didi during the inauguration of the international women trainees program at NISE in 2025.

### **State Tribal Research Institutes (TRIs)**

State Tribal Research Institutes (TRIs) are government bodies dedicated to researching, documenting, and promoting tribal culture, languages, and heritage at the state level in India. In the Adi Sanskriti project, TRIs from 15 states including Andhra Pradesh, Assam, and Madhya Pradesh contributed to content curation, digital mapping, and



documentation of tribal artforms. Their involvement ensures authenticity and grassroots participation in preserving tribal traditions. TRIs play important role in policy formulation, cultural preservation, and socio-economic development of tribal communities by acting as knowledge hubs and research centers.

#### WHY IN NEWS?

TRIs collaborated extensively in the development of the Adi Sanskriti platform, contributing to its rich, diverse repository and educational content.

### Sugali Tribe

The **Sugali** tribe, also known as Banjaras in some regions, are a nomadic community spread across South India, especially Telangana and Andhra Pradesh. Traditionally, they were involved in trade and transport of goods using bullock carts. Their language is a dialect of Telugu mixed with Rajasthani elements. The Sugali have been recognized as a Scheduled Tribe since 1976, which grants them access to affirmative action benefits. They maintain distinct cultural practices including folk dances and rituals related to agriculture and livestock. Their socio-economic status has improved relatively faster compared to some other tribes due to better access to education and government schemes.

#### WHY IN NEWS?

The Sugali tribes Scheduled Tribe status is under legal scrutiny following a plea challenging their inclusion, which affects reservation policies in Telangana.

### Swachh Survekshan

Swachh Survekshan is an annual cleanliness survey initiated by the Government of India in 2016 to assess urban sanitation and hygiene. It ranks cities based on parameters like waste management, open defecation, and citizen feedback. The survey incentivizes cities with awards and funding, promoting competition for cleaner urban environments. It covers over 4,000 cities and towns, making it one of the world's largest cleanliness assessments. Despite reported high source segregation rates, discrepancies with ground realities have been noted. Swachh Survekshan data influences policy and municipal performance but faces challenges due to inconsistent waste characterization and reporting standards.

#### WHY IN NEWS?

Swachh Survekshan 2022 data showing 84% source segregation in million-plus cities contrasts with observations from auditors, denoting challenges in India's municipal waste management system.

### Swachh Survekshan Rankings

The **Swachh Survekshan** is an annual cleanliness survey initiated by the Ministry of Housing and Urban Affairs to rank Indian cities on sanitation and waste management. It evaluates cities on parameters like solid waste management, open defecation free status, and citizen feedback. The rankings influence funding and policy decisions, and top performers are often recognized nationally. It has evolved to include **peer learning mechanisms** like the SSJ initiative. The survey covers cities of various sizes and uses a mix



of data sources, including field visits and technology-enabled monitoring.

#### WHY IN NEWS?

Swachh Survekshan rankings were used recently to identify mentor and mentee cities for the Swachh Shehar Jodi initiative, linking performance to mentorship roles.

### Swachhata Hi Seva (SHS)

Swachhata Hi Seva (SHS) is an annual cleanliness campaign initiated by the Government of India to promote sanitation and hygiene across urban and rural areas. It typically runs for about 15 days, aligning with the Indian festive season to maximize community participation. The campaign encourages citizens, government bodies, and local organizations to engage in cleanliness drives, waste management, and awareness activities. SHS emphasizes legacy dumpsite remediation, use of digital tools like the Swachhata App, and post-festival cleanliness. It has evolved into a nationwide movement or “jan andolan” to sustain cleanliness as a continuous commitment rather than a one-time event.

#### WHY IN NEWS?

SHS 2025 campaign preparations were reviewed in a joint meeting by MoHUA and DDWS, focusing on the theme Swachhotsav and emphasizing clean, green celebrations during the Indian festive season.

### Swastha Nari, Sashakt Parivar Abhiyan

Swastha Nari, Sashakt Parivar Abhiyan is a health and empowerment campaign targeting women travelers and families, integrated into airport initiatives in 2025. It provides free medical check-ups and health awareness drives aimed at improving women’s health and promoting family well-being. The campaign emphasizes preventive healthcare and education, especially in public spaces like airports, to enhance safety and dignity for women. It aligns with broader government efforts to empower women and strengthen family health through accessible services and awareness programs. The initiative is part of wider social welfare policies addressing gender inclusivity in public infrastructure.

#### WHY IN NEWS?

The campaign was brought into light during Yatri Sewa Diwas 2025 launch, offering free health check-ups and awareness specifically for women travelers at Hindon Airport.

### System for Pension Administration – Raksha (SPARSH)

SPARSH is the **worlds largest pension system for defence personnel**, managing pensions for over 31.54 lakh defence pensioners in India and Nepal. It has resolved **87% of legacy discrepancies** in pension cases, improving grievance redressal by reducing average disposal time from 56 to 20 days. The system integrates 202 Defence Accounts Department offices, over 4.63 lakh Common Service Centers, and 5200+ bank branches as service points. SPARSH supports real-time pension disbursement and has facilitated the transfer of ₹1,224.76 crore to 20.17 lakh beneficiaries within 15 days during OROP-III implementation.

#### WHY IN NEWS?

SPARSH resolved 87% of pension discrepancies and improved grievance redressal times ,



impacting over 31 lakh defence pensioners across India and Nepal by September 2025.

### **Total Fertility Rate (TFR)**

The **Total Fertility Rate (TFR)** measures the average number of children a woman is expected to have during her reproductive years, assuming current age-specific fertility rates remain constant. A TFR of 2.1 is considered the replacement level, meaning the population size remains stable without migration. Variations in TFR across regions reflect socio-economic, cultural, and health differences. India's TFR has fallen below replacement level in many states, indicating a demographic transition towards lower birth rates. TFR is a key indicator for planning resources in healthcare, education, and social services.

#### WHY IN NEWS?

India's TFR dropped to 1.9 in 2023, the first decline in two years, signaling changing reproductive patterns and population dynamics.

### **UDAY Scheme**

The Ujwal DISCOM Assurance Yojana (UDAY), launched in 2015, aimed to improve the financial health of power distribution companies (Discoms) by debt restructuring, operational efficiency, and reducing losses. It allowed states to take over 75% of Discom debt, easing financial pressure. Despite initial improvements, UDAY failed to resolve fundamental issues like tariff deficits and regulatory challenges. Many Discoms continued to suffer losses due to high subsidies and poor cost recovery. UDAY also encouraged states to improve billing and collection efficiency. The scheme's limitations have led to calls for newer reform-based debt restructuring approaches.

#### WHY IN NEWS?

The latest government proposals acknowledge that schemes like UDAY have not fully resolved Discom financial problems, prompting a new reform-based debt restructuring initiative.

### **Ujjwala Yojana**

**Ujjwala Yojana** is a government scheme launched in 2016 aimed at providing LPG connections to women from Below Poverty Line (BPL) households to reduce health hazards caused by cooking with traditional fuels. The scheme has expanded to include rural electrification in some contexts, focusing on women's empowerment and improved household energy access. It is implemented through state governments and energy companies. The program has distributed over 80 million connections nationwide. Ujjwala Yojana also emphasizes environmental benefits by reducing deforestation and indoor air pollution. It has improved women's health and economic conditions by decreasing time spent collecting firewood.

#### WHY IN NEWS?

The electricity supply to over 100 homes in Fulwariya village is being provided under the Ujjwala Yojana, expanding the scheme's reach beyond LPG to rural electrification.

## **Defence**



## Agni-Prime (Agni-P) Missile

Agni-Prime, or Agni-P, is an advanced Indian ballistic missile combining the range of Agni-I (1,000 km to 2,000 km) with propulsion and navigation technologies from Agni-IV and Agni-V. It is a two-stage, solid-fuel missile weighing approximately 11,000 kg. The missile can carry various warheads, including high explosive, thermobaric, and nuclear. Agni-P enhances India's credible deterrence with improved accuracy and mobility. First nuclear-capable tests occurred in 2021. It represents an upgrade over Agni-I, offering better survivability and operational flexibility, especially when deployed via mobile launch platforms such as rail systems.

### WHY IN NEWS?

India's Defence Research and Development Organisation test-fired the Agni-Prime missile from a rail-based mobile launcher, marking advancement in the country's missile technology and strategic deterrence.

## ASHNI Platoons

ASHNI platoons are newly raised units in the Indian Army designed to **integrate advanced technology with traditional combat skills**. The acronym ASHNI stands for Advanced Systems for High-tech Networked Infantry. These platoons specialize in using drone surveillance, precision strikes, and real-time target acquisition to enhance battlefield effectiveness. They represent a shift towards **multi-domain operations**, combining cyber, electronic warfare, and conventional infantry tactics. Their operational debut was during Exercise Yudh Kaushal 3.0. ASHNI platoons are part of the Indian Army's modernization efforts under the self-reliance initiative to incorporate indigenous technology in combat units.

### WHY IN NEWS?

ASHNI platoons made their operational debut during Exercise Yudh Kaushal 3.0, showcasing next-generation warfare capabilities in the Indian Army.

## Bailey Bridge

The **Bailey bridge** is a portable, pre-fabricated truss bridge developed by the British during World War II for rapid deployment in combat zones. It consists of modular steel panels that can be assembled without heavy equipment, allowing quick construction over rivers or gaps. The design supports heavy loads, including tanks and heavy vehicles. Its components are light enough to be transported by manpower or vehicles. Bailey bridges have been widely used worldwide in military and civilian applications, especially in disaster relief and emergency infrastructure restoration. The bridge constructed at Jammu Tawi was completed within 12 hours, restoring a critical lifeline.

### WHY IN NEWS?

A Bailey bridge was constructed by Indian Army Engineers in Jammu Tawi within 12 hours to restore a vital lifeline after recent floods caused extensive damage to infrastructure.

## Bhairav Commando Battalions

The Bhairav Commando battalions are specialized infantry units in the Indian Army, each



comprising approximately **250 soldiers**. They act as an intermediary force between regular infantry and elite para-special forces. Their main roles include reconnaissance, cross-border interdiction, and disruption of enemy troops. Soldiers are selected from existing infantry battalions and undergo 2-3 months of specialized training followed by advanced training alongside Special Forces. Five such battalions are planned, with deployments along the northern borders with China and Pakistan, as well as the northeastern and western borders of India. They supplement the Army's existing para-special forces units.

#### WHY IN NEWS?

The Indian Army is introducing Bhairav Commando battalions to strengthen border security amid escalating tensions with Pakistan and China, aiming to deploy five battalions by October 2025.

### **Chinar Corps**

The Chinar Corps, officially known as the 15 Corps, is a formation of the Indian Army responsible for military operations in the Kashmir Valley and Ladakh regions. Headquartered in Srinagar, it plays an important role in counter-insurgency and border defense along the Line of Control (LoC). The Corps is named after the Chinar tree, symbolizing Kashmir. It regularly conducts anti-terror operations and infiltration prevention. The Chinar Corps is known for its coordination with local police and paramilitary forces and has a strong tradition of honoring soldiers who sacrifice their lives in the region.

#### WHY IN NEWS?

The Chinar Corps recently paid tribute to soldiers martyred in separate incidents along the LoC and during counter-terror operations in Kulgam and Uri sectors.

### **Divyastra Batteries**

Divyastra batteries are advanced artillery units in the Indian Army that integrate traditional artillery guns with drones and loitering munitions. They enable deep-strike capabilities with real-time target tracking and precision engagement of both static and moving threats. These batteries enhance the firepower and operational effectiveness of artillery by combining networked ISR (Intelligence, Surveillance, and Reconnaissance) platforms with precision strike weapons. Divyastra units are part of a strategic transformation aimed at modernizing artillery to operate effectively in drone-dominated combat environments.

#### WHY IN NEWS?

Divyastra batteries are being introduced to modernize the Indian Army's artillery, improving precision strike capabilities and adapting to drone-saturated battlefields.

### **Drone-Mounted Radar Systems**

**Drone-mounted radar systems** combine compact radar technology with unmanned aerial vehicles to provide real-time surveillance in remote and difficult terrains. These systems operate effectively day and night, in all weather conditions including fog, rain,



and darkness. They can detect moving targets, small vehicles, and intruders, offering fast alerts to security forces. The technology integrates radar with infrared, high-resolution cameras, and ground sensors to enhance detection accuracy. This system is crucial for monitoring borders where physical outposts are impractical, improving response times and reducing smuggling or infiltration attempts.

#### WHY IN NEWS?

The BSF and ISRO collaboration to develop and manufacture drone-mounted radar systems marks advancement in India's border surveillance capabilities along the western and eastern frontiers.

### Eastern Command

The **Eastern Command** is one of the Indian Army's seven operational commands, responsible for the defense of India's eastern borders, including West Bengal, Assam, and the northeastern states. Established in 1920, it played a role during the 1971 Indo-Pak War and continues to focus on border security, counter-insurgency, and disaster relief operations. The headquarters is located at Fort William, Kolkata. The command oversees multiple corps and divisions, maintaining readiness against threats from neighboring countries like China and Bangladesh. It also coordinates with paramilitary forces and local authorities to maintain internal security.

#### WHY IN NEWS?

Eastern Command hosted the 16th Combined Commanders Conference, drawing top military and civil defense leaders to Kolkata.

### Exercise Yudh Abhyas

Exercise Yudh Abhyas is an annual bilateral military exercise between India and the United States, initiated in 2004. It focuses on enhancing interoperability and joint operational capabilities between the two armies. The exercise typically includes command post exercises, field training, and combined tactical operations. It is conducted in diverse terrains, including sub-Arctic conditions as in 2025 at Fort Wainwright, Alaska. The Indian contingent often includes units like the Madras Regiment, while the US deploys elements such as the 11th Airborne Division. The exercise incorporates training in areas like sniper tactics, reconnaissance, counter-IED, and electronic warfare.

#### WHY IN NEWS?

The 21st edition of Exercise Yudh Abhyas took place from September 1-14, 2025, in Alaska, involving around 450 Indian and US personnel, denoting ongoing military cooperation despite diplomatic strains.

### Garden Reach Shipbuilders and Engineers (GRSE)

Garden Reach Shipbuilders and Engineers (GRSE), based in Kolkata, is a premier Indian shipbuilding company specializing in naval and coast guard vessels. Established in 1884, GRSE became a government-owned entity in 1960. It has built over 120 warships and auxiliary vessels, including frigates, corvettes, and patrol vessels. The shipyard is known for pioneering indigenous warship construction with a focus on advanced technology



integration. GRSEs projects emphasize self-reliance, using over 80% indigenous components. It plays a critical role in India's defense manufacturing ecosystem, contributing to strategic maritime security and export of naval platforms to friendly countries.

#### WHY IN NEWS?

GRSE delivered the Androth, the second ASW-SWC ship, to the Indian Navy, reinforcing India's push for indigenous naval shipbuilding and reducing dependency on foreign imports.

#### IASV Triveni

IASV Triveni is an indigenously-built Indian Army Sailing Vessel specifically designed for long-distance oceanic voyages. Measuring 50 feet in length, it is equipped to handle harsh maritime conditions encountered during circumnavigation. The vessel supports a crew of 10 women officers from the Indian Army, Navy, and Air Force. Its design incorporates advanced navigation and safety features to ensure resilience during the crossing of major oceanic routes, including the challenging passages around the Capes Leeuwin, Horn, and Good Hope. Triveni represents India's growing expertise in indigenous marine technology and naval architecture.

#### WHY IN NEWS?

IASV Triveni is the yacht used in the first-ever tri-service all-women circumnavigation expedition flagged off in September 2025.

#### iDEX-DIO

Innovations for Defence Excellence Defence Innovation Organisation (iDEX-DIO) is a flagship initiative under the Ministry of Defence, launched in 2018 to promote innovation and technology development in defence. It supports over **650 start-ups and MSMEs** and has facilitated procurement clearances worth more than **Rs 3,250 crore** for 50 products. So far, orders worth **Rs 1,652 crore** have been placed for 36 products developed through iDEX. Its model encourages indigenous capabilities and encourages a defence start-up ecosystem that bridges technology gaps between defence and civilian sectors.

#### WHY IN NEWS?

iDEX-DIO signed an MoU with EdCIL (India) Limited to expand its innovation model into the civilian ed-tech sector through the ASPIRE program, promoting dual-use technologies.

#### Indian Naval Ship Kadmatt

The **INS Kadmatt** is a Kamorta-class anti-submarine warfare corvette commissioned by the Indian Navy in 2016. It is the **first ship of the class** and is named after the Kadmat Island in Lakshadweep. The ship features **stealth technology** and is equipped with advanced sonar systems and torpedoes for anti-submarine operations. It was constructed at the Garden Reach Shipbuilders and Engineers (GRSE) in Kolkata. INS Kadmatt has participated in various multinational naval exercises and goodwill visits, enhancing India's maritime diplomacy, particularly in the Indian Ocean and Pacific regions.

#### WHY IN NEWS?

INS Kadmatt participated in the 50th Independence Day celebrations of Papua New



Guinea, including a Military Tattoo event, symbolizing maritime cooperation and cultural exchange.

### **INS Aravali**

INS Aravali is a shore-based Indian Navy facility commissioned in Gurugram, designed to enhance maritime domain awareness and information warfare capabilities. Named after the Aravali mountain range, it symbolizes vigilance and endurance. The base acts as a critical node in the Navys command and control network, linking naval platforms and partners across oceans. Its crest features mountain imagery and a rising sun, representing strength and technological advancement. The base supports the National Capital Regions strategic importance and embodies the MAHASAGAR vision for regional security and growth. Captain Sachin Kumar Singh is its first Commanding Officer.

#### WHY IN NEWS?

INS Aravali was commissioned in September 2025 to boost the Indian Navys information warfare and maritime domain awareness, marking a strategic enhancement in Indias naval infrastructure.

### **INS Gharial**

INS Gharial is a **Magar-class amphibious warfare ship** of the Indian Navy designed for landing troops, vehicles, and equipment during amphibious operations. Commissioned in the early 2000s, it has a displacement of around **5,600 tons** and can carry approximately 350 troops and 15 tanks. The ship is equipped with a well deck for launching landing craft and has a flight deck for helicopter operations. It is named after the gharial, a crocodilian species native to the Indian subcontinent. INS Gharial supports joint operations by integrating army troops onboard for amphibious missions.

#### WHY IN NEWS?

INS Gharial was used for the induction and integration of army troops during the Harbour Phase of the Jal Prahar 2025 joint amphibious exercise.

### **INS Kadmatt**

INS Kadmatt is an indigenous Anti-Submarine Warfare (ASW) Corvette of the Indian Navy, part of the Kamorta-class. It is the first ship in the Indian Navy to be constructed with a high degree of indigenous content, including stealth features and advanced sonar systems. The vessel is named after Kadmat Island in Lakshadweep. It displaces around 3,300 tons and is equipped with torpedoes, rocket launchers, and surface-to-air missiles. The ships design emphasizes stealth and survivability. It plays important role in maritime security and anti-submarine operations in the Indian Ocean region.

#### WHY IN NEWS?

INS Kadmatt arrived at Port Moresby to participate in Papua New Guineas 50th Independence Day celebrations, symbolizing Indias commitment to Pacific Island nations under its Act East Policy.

### **INS Nistar**

INS Nistar is an indigenously designed and constructed **Deep Submergence Rescue**



**Vessel (DSV)** of the Indian Navy. It serves as a mothership for Deep Submergence Rescue Vehicles (DSRVs) and is equipped for submarine rescue operations. The vessel supports **diving and rescue missions** at ocean depths, enhancing the Navy's underwater operational capabilities. INS Nistar is designed with advanced communication and navigation systems to coordinate complex rescue tasks and facilitate international cooperation during multinational exercises. It plays important role in submarine crew safety and underwater intervention operations.

#### WHY IN NEWS?

INS Nistar is participating in the multinational Exercise Pacific Reach 2025 in Singapore, engaging in submarine rescue exercises and expert exchanges with over 40 nations.

### INS Rajali

INS Rajali is a naval air station located in Arakkonam, Tamil Nadu, on India's Eastern Seaboard. It is one of the largest naval air bases in Asia and hosts the Indian Navy's LRMR squadrons, including INAS 312. The base operates advanced maritime patrol aircraft like the P-8I and High Altitude Long Endurance (HALE) drones such as the MQ-9B Sea Guardian. INS Rajali supports anti-submarine warfare, maritime reconnaissance, and surveillance missions across the Indian Ocean Region. It plays a strategic role in India's maritime security framework and is equipped with state-of-the-art infrastructure for long-range aerial operations.

#### WHY IN NEWS?

INS Rajali hosted a two-day seminar on Long Range Maritime Reconnaissance platforms, denoting its role as a hub for advanced naval aviation and drone operations.

### INS Shardul

INS Shardul is an amphibious warfare vessel of the Indian Navy, commissioned in 2007. It belongs to the Shardul-class landing ship tanks (LSTs) designed for amphibious operations, troop transport, and logistical support. The ship can carry around 500 troops, vehicles, and equipment, and is equipped with landing craft for shore deployment. INS Shardul has participated in numerous humanitarian assistance and disaster relief missions. It also supports naval exercises and strategic deployments in the Indian Ocean Region. The ship is named after a Sanskrit word meaning lion, symbolizing strength and agility in amphibious warfare.

#### WHY IN NEWS?

INS Shardul was part of the Indian Navy's First Training Squadron visiting Seychelles in September 2025, denoting its role in long-range training and maritime diplomacy.

### INS Tir

INS Tir is a **cadet training ship** of the Indian Navy, commissioned in 1986 and named after a Sanskrit word meaning "shore." It is primarily used for training naval cadets in seamanship and navigation. The ship has a displacement of around **3,000 tons** and is equipped with basic armaments for defensive purposes. INS Tir has participated in numerous goodwill visits and joint exercises with friendly navies worldwide. It features



facilities for classroom instruction and practical training, making it a vital platform for preparing future naval officers. The ship underwent mid-life upgrades to extend operational capabilities and improve onboard systems.

#### WHY IN NEWS?

INS Tir was part of the Indian Navys First Training Squadron visiting Maputo, Mozambique, for joint naval exercises and cooperation in September 2025.

### INS Trikand

INS Trikand is an **Indian Navy stealth frigate** commissioned in 2013, part of the Talwar-class frigates built by Russia. It features **advanced stealth technology** to reduce radar cross-section and is equipped with BrahMos supersonic cruise missiles. The ship displaces around 4,000 tons and has a top speed of 30 knots. It carries a helicopter and has anti-submarine warfare capabilities. The name "Trikand" refers to the **three regions of ancient India**. It is one of the few Indian warships designed for multi-dimensional warfare with integrated air defense, anti-ship, and anti-submarine systems.

#### WHY IN NEWS?

INS Trikand arrived at Alexandria, Egypt, to participate in Exercise Bright Star 2025, a major multilateral military drill in the Mediterranean Sea.

### Jal Prahar Exercise

Jal Prahar is a biannual joint amphibious exercise conducted by the Indian Navy in collaboration with the Indian Army, focusing on enhancing inter-service coordination in maritime and coastal operations. The exercise involves phases including harbour training and sea-based operational drills, validating Standard Operating Procedures (SOPs) and joint training protocols. It is conducted along India's eastern seaboard to strengthen amphibious warfare capabilities and interoperability. The exercise includes activities such as troop induction onboard naval vessels, launching of landing crafts, and simulated beach landings, aiming to prepare forces for rapid response in coastal defense and humanitarian missions.

#### WHY IN NEWS?

Jal Prahar 2025 concluded successfully with large-scale joint amphibious operations demonstrating enhanced synergy between the Indian Navy and Indian Army.

### Joint Military Stations

**Joint Military Stations** are newly conceptualized integrated bases combining facilities of the Indian Army, Navy, and Air Force under a single lead service. These stations unify logistics, infrastructure, repair, maintenance, and supply chains to optimize resources. Locations under consideration include **Mumbai, Bengaluru, Ahmedabad, Gwalior, Pune, and Secunderabad**. The initiative aims to enhance operational efficiency and manpower rationalization. This concept serves as a pilot for the larger goal of theatre commands, which would unify command structures regionally. It marks the first time India is formally creating tri-service military bases, reflecting a shift toward jointness in defense operations.

#### WHY IN NEWS?

Indias military hierarchy decided to form three joint military stations as a step toward



integrating the Army, Navy, and Air Force, announced during the Combined Commanders Conference in September 2025.

### **Joint Training Node (JTN), Umroi**

The **Joint Training Node (JTN)** at Umroi, Meghalaya, is a specialized military training facility used by the Indian Army for joint exercises with foreign forces. Located near Shillong, it offers diverse terrain suitable for semi-urban and jungle warfare training. The facility supports multi-national drills, enabling interoperability and tactical coordination. It includes advanced simulation technologies and infrastructure for counter-terrorism and unconventional warfare training. The JTN was developed to enhance India's strategic partnerships in the Southeast Asian region and serves as a hub for joint military cooperation, particularly with ASEAN countries. It is relatively new, established in the late 2010s.

#### WHY IN NEWS?

JTN hosted the 14th edition of the India-Thailand joint military Exercise MAITREE-XIV in September 2025, marking an event in bilateral defense cooperation.

### **Kumaon Regiment**

The **Kumaon Regiment** is one of the oldest infantry regiments of the Indian Army, raised in 1813. It recruits primarily from the Kumaon region of Uttarakhand and is known for its distinguished service in both World Wars and various modern conflicts. The regiment has earned numerous battle honors, including the prestigious Battle of Rezang La during the 1962 Sino-Indian War. It has a unique regimental insignia featuring a **bugle horn** and a **crossed khukris**. The Kumaon Regiment is noted for its high-altitude warfare capabilities and has been deployed in counter-insurgency operations across India.

#### WHY IN NEWS?

A battalion of the Kumaon Regiment is leading the Indian Army contingent in the multinational Exercise ZAPAD 2025 in Russia, denoting its role in joint military operations.

### **Line of Control (LoC)**

The Line of Control (LoC) is the de facto border between India and Pakistan in the disputed region of Jammu and Kashmir. It was established after the ceasefire agreement of 1949 and later reaffirmed by the Simla Agreement of 1972. The LoC spans approximately 740 kilometers and is heavily militarized by both countries. It is a frequent site of cross-border infiltration attempts and skirmishes. The terrain along the LoC varies from mountainous to forested areas, complicating military operations. Civilians living near the LoC often face displacement and security challenges due to ongoing conflict.

#### WHY IN NEWS?

Recent infiltration attempts and military engagements along the LoC in the Uri and Baramulla sectors have resulted in casualties and heightened security operations.

### **Mission Divyastra**

is an Indian strategic initiative to develop and test advanced missile technologies, including the MIRV (Multiple Independently Targetable Re-entry Vehicle) capability. In



March 2024, under this mission, India successfully tested the Agni-5 missile equipped with MIRV technology, allowing a single missile to carry 3-4 nuclear warheads aimed at different targets. This capability enhances the missile's strike potential and complicates enemy missile defense. The mission focuses on increasing the sophistication and reliability of India's missile arsenal, aiming to ensure credible deterrence through technological advancement and rapid deployment options.

WHY IN NEWS?

Mission Divyastra was referenced following the Agni-5 missile test showcasing MIRV capability, marking a step in India's strategic missile development.

### **Mission Sudarshan Chakra**

Mission Sudarshan Chakra is an Indian integrated air defence system planned to be operational by 2035. It aims to create a multi-layered defence shield combining legacy weapons like Pechora and OSA-AK with modern systems such as S-400 and SPYDER. The mission focuses on countering diverse aerial threats, including drones, missiles, and rockets, across varying altitudes and ranges. It emphasizes blending legacy equipment with contemporary platforms for cost-effective and operationally efficient air defence. The system will integrate Indian Air Force and Army air defence capabilities to protect national assets from both short- and long-range attacks.

WHY IN NEWS?

Prime Minister Narendra Modi announced Mission Sudarshan Chakra on Independence Day 2025, coinciding with DRDO's successful test of a multi-altitude air defence system, marking a major step in India's future defence preparedness.

### **Papua New Guinea Defence Force (PNGDF)**

The Papua New Guinea Defence Force is the military organization responsible for defending Papua New Guinea's territorial integrity. It comprises the Land Element, Maritime Element, and Air Element, with a focus on internal security, border protection, and disaster response. The PNGDF has a history of cooperation with regional partners, including Australia and India. It operates a small fleet of patrol boats for maritime surveillance. The force faces challenges such as limited resources and rugged terrain but plays a vital role in humanitarian assistance and disaster relief within the Pacific Islands region.

WHY IN NEWS?

The PNG Defence Force engaged with INS Kadmatts crew to explore cooperation in maritime security and disaster relief during Papua New Guinea's 50th Independence Day celebrations.

### **Project Vijayak**

Project Vijayak is a specialized initiative by the Border Roads Organisation (BRO) focused on infrastructure development in Ladakh since 2010. It has constructed and maintained over **1,400 km of roads** and **80 major bridges** in high-altitude, challenging terrain. The project supports both military operational needs and civilian connectivity, enhancing



regional development. It uses advanced technologies like geotextiles, slope stabilization, and digital monitoring. Welfare programs for Casual Paid Labourers include insulated shelters, sanitation, protective gear, and health camps. The project is notable for reopening the **Zojila Pass within 31 days** after winter closure in 2025.

WHY IN NEWS?

Project Vijayak celebrated its 15th Raising Day in September 2025, marking major infrastructure milestones and unveiling plans for expansion and modernization in Ladakh.

### **Rail-Based Mobile Launchers**

Rail-based mobile launchers are missile platforms mounted on railway vehicles, allowing missiles to be moved covertly across extensive rail networks. They offer strategic advantages such as concealment in tunnels and rapid redeployment without the need for road quality adjustments. Indias approximately 70,000 km rail network enables missile transport nationwide. Compared to road-based systems, rail launchers face fewer logistical constraints and are less vulnerable to satellite surveillance. Rail platforms are cheaper and easier to scale than submarine-launched ballistic missile systems, enhancing a countrys second strike nuclear deterrence by improving missile survivability.

WHY IN NEWS?

The Agni-Prime missile was test-fired from a rail-based launcher in India, demonstrating the countrys enhanced second strike capability using its extensive railway infrastructure.

### **Strategic Forces Command (SFC)**

The Strategic Forces Command (SFC) was established in 2003 to manage Indias nuclear arsenal and ensure credible minimum deterrence. It operates under the Nuclear Command Authority and integrates nuclear-capable assets from all three services. The SFC is responsible for planning, training, and deployment of nuclear forces and maintaining operational readiness. It coordinates strategic missile forces and nuclear-capable aircraft and submarines. The SFC is headquartered in New Delhi and is led by a Commander-in-Chief, usually a three-star officer. It is one of Indias two existing tri-service commands and plays a critical role in strategic stability and deterrence.

WHY IN NEWS?

The future of the SFC is under consideration as part of the theatre command reforms, with debates on whether it should continue as a separate command or be integrated into the new theatre structure.

### **Sudarshan Chakra Concept**

The Sudarshan Chakra concept in modern Indian defence strategy refers to a multi-layered, integrated defence system designed to counter diverse aerial threats including drones, UAVs, and hypersonic weapons. Inspired by the mythological spinning disc weapon, it emphasizes rapid detection, tracking, and neutralization through coordinated use of sensors, electronic warfare, and kinetic interceptors. This concept aims to create a resilient shield by combining real-time data sharing among military branches and automated response systems. It represents a shift from isolated defence mechanisms to a



holistic network-centric approach to aerial defence in the face of advanced, fast-evolving threats.

#### WHY IN NEWS?

The Sudarshan Chakra concept was brought into light by the Chief of Integrated Defence Staff during a conference on counter-UAV and air defence systems, underscoring its role in future military readiness.

### Theatre Commands

Theatre commands are unified military structures integrating the Army, Navy, and Air Force under a single commander for a specific geographical region. India currently operates 17 service-specific commands – seven each for the Army and Air Force, and three for the Navy. Two tri-service commands exist – the Andaman and Nicobar Command and the Strategic Forces Command (SFC), which manages India's nuclear arsenal. Theatre commands aim to enhance joint operations by pooling resources and coordinating multi-domain warfare, including land, sea, air, cyber, and space. The concept was propelled by the creation of the Chief of Defence Staff (CDS) post in 2019 to improve integration and operational efficiency.

#### WHY IN NEWS?

The Indian Armed Forces are debating the final structure and implementation of theatre commands, with ongoing discussions at the Army War College and differing views among service chiefs about the best approach to jointness.

### Awards, Honours, Personalities, Books, Sports etc.

#### Jalveer

The mascot for the 11th Asian Aquatics Championship, named **Jalveer**, symbolizes water and vigor, reflecting aquatic sports' essence. The name combines Jal meaning water in several Indian languages and Veer meaning brave or hero. Mascots like Jalveer are designed to engage audiences, especially children, and promote cultural identity. The mascot's design typically incorporates elements of local fauna or cultural symbols, promoting regional pride. Jalveer is the first official mascot for the Asian Aquatics Championship, aiming to boost visibility and enthusiasm for aquatic sports in India and Asia.

#### WHY IN NEWS?

Jalveer was revealed at the launch event for the 11th Asian Aquatics Championship, scheduled in Ahmedabad from September 28 to October 11, 2025, serving as a symbol for the tournament.

### National Dope Testing Laboratory (NDTL)

The National Dope Testing Laboratory (NDTL), based in New Delhi, is India's premier government laboratory responsible for conducting doping tests in sports. Established in 1990, it is accredited by the World Anti-Doping Agency (WADA) and serves as a key institution for ensuring fair play in Indian and international sports events. NDTL conducts analysis of urine and blood samples for over 450 banned substances and collaborates with



research institutes to develop new testing methods. It plays important role in training doping control officers and promoting anti-doping awareness across India and abroad.

WHY IN NEWS?

NDTL, in collaboration with NIPER Guwahati, launched new Reference Materials, including Methandienone LTM, to improve detection of banned substances in sports doping tests.