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CIVIL SERVICES EXAMINATION - 2025

11 NOVEMBER

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NOTE:

Dear Students,

Memorisation and recollection of information in Current Affairs is as important as understanding the articles. In order to enhance the learning outcomes from the Monthly Current Affairs Magazine, we are introducing following additions:



A thematic based colors has been used in the document in the boxes, tables etc to enable easy identification and recollection of various concepts and topics.



Questions are an important tool to assess and retain information. To enable this we are adding a Smart Quiz at the end of each section in the document for practicing the questions.



A wide variety of infographics have been added to ensure smoother learning experience and enhanced retention of the information. This will also help in effective presentation of information in the answer writing as well.



Places and persons in news are being presented in an objective manner through Maps, Tables & Pictures. This will help in easier recollection of factual information.



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फाउंडेशन कोर्स

सामान्य अध्ययन

प्रारंभिक एवं मुख्य परीक्षा 2027

इनोवेटिव क्लासरूम प्रोग्राम

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करेंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- प्री फाउंडेशन कक्षाएं

- सीसैट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसैट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

नोट: ऑनलाइन छात्र हमारे पाठ्यक्रम की लाइव वीडियो कक्षाएं अपने घर पर ऑनलाइन प्लेटफॉर्म पर देख सकते हैं। छात्र लाइव चैट विकल्प के माध्यम से कक्षा के दौरान अपने संदेह और विषय संबंधी प्रश्न पूछ सकते हैं। वे अपने संदेह और प्रश्न नोट भी कर सकते हैं और दिल्ली केंद्र में हमारे कक्षा सलाहकार को बता सकते हैं और हम फोन/मेल के माध्यम से प्रश्नों का उत्तर देंगे।

DELHI: 25 नवंबर, 11 AM | 12 जनवरी, 11 AM

JAIPUR: 10 दिसंबर

JODHPUR: 2 दिसंबर

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1. POLITY AND GOVERNANCE

1.1. LAND REGISTRATION SYSTEM IN INDIA

Why in the News?

Recently, Supreme Court in **Samiullah v. State of Bihar case** has called for a fundamental reform in country's land registration and titling system.

More on the News

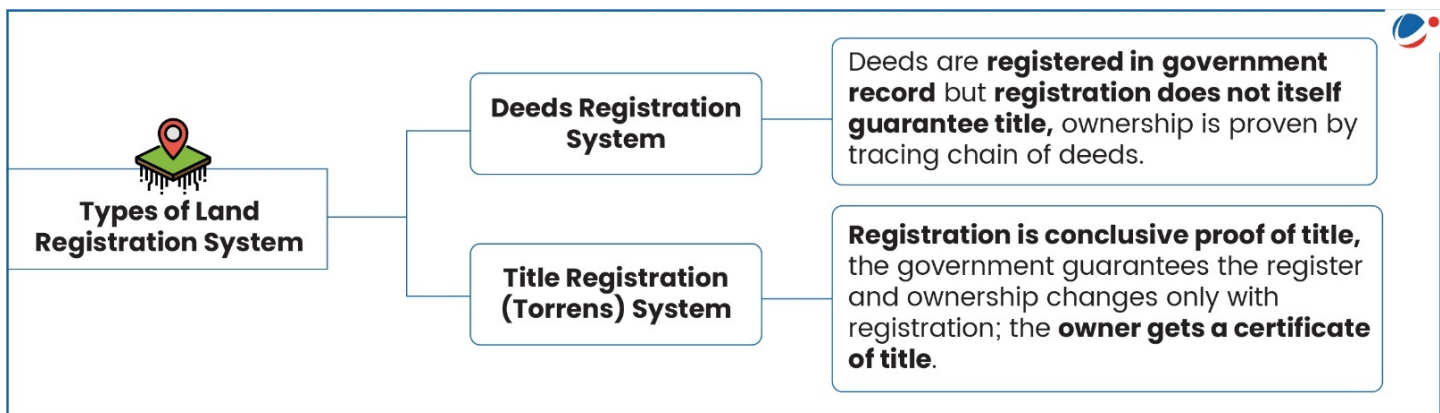
- The Supreme Court of India **struck down Bihar's rule making mutation proof mandatory for property registration**, reaffirming that registration records transactions, not ownership.
 - It reiterated that document registration under the Registration Act, 1908, only records a transaction, while mutation (updating revenue records) is a separate process that doesn't confer title.
- The Court criticized the "bureaucratic loop" created by outdated land records in India and suggesting a national push for modern, digital, conclusive titling to establish clear ownership.

K Gopi v Sub Registrar Case (2025)

- Supreme Court held that Registration Act, 1908 does **not empower sub-registrars to check title or ownership** and that their role is merely ministerial, with their only mandate being to verify that the paperwork is in order and the parties have signed it voluntarily.

Land Registration System in India

- Land** is a **"State subject"** and **registration of deeds** is a **concurrent list** subject under the Schedule VII of the Constitution.



Issues with the existing Land Registration System in India

- Outdated legal framework:** India's property transaction system continues to operate under colonial framework governed by century-old statutes i.e. **Transfer of Property Act, 1882, Indian Stamp Act, 1899, and Registration Act, 1908.**
- No Conclusive Title:** Registration of sale deed under Registration Act **does not guarantee ownership** instead it only serves as a public record of transaction having **presumptive evidentiary** value and **not conclusive proof of title.**
- Litigation burden:** Fake and **fraudulent property documents, land encroachments, verification delays**, system of presumptive title through registration, and fragmented state-level procedures leads to **66 percent of all civil litigation.**
- Administrative problems:** Physical **presence of buyer, seller, and two witnesses for verification**, authentication and recording at sub-registrar offices makes land registration **cumbersome** and **time-consuming.**
 - Moreover, since land is a **state subject**, procedures differ across States, resulting in **fragmentation** and **lack of uniformity.**
- Incomplete Digitisation:** Programmes like Digital India Land Records Modernization (DILRMP) and National Generic Document Registration System (NGDRS) digitise records but do **not correct faulty and unclear titles.**

Measures taken to improve Land Record System in India

- **DILRMP:** It aims to replace the manual presumptive land-title system with a digital conclusive land titling system.
- **Initiatives under DILRMP**
 - **Unique Land Parcel Identification Number (ULPIN) or Bhu-Aadhar:** 14 digit Alpha-numeric unique ID for each land parcel based on Geo-coordinates to **streamline real estate transactions, and resolve property disputes.**
 - **NGDRS or E-Registration:** It empowers citizens through online entry of deed, online payment, online appointment, online admission, document search and certified copy generation.
 - **Linkage of e-Court with Land Records / Registration Data base:** It makes authentic first-hand information available to Courts resulting in speedy disposal of cases and reduction in land disputes.
 - **Transliteration of Land Records:** To overcome language barrier, transliterate Records of Rights in local language to any 22 languages listed in Schedule VIII of Constitution.
- **Digitalise Land Record System of different States**
 - **Dharani portal/Bhubharati portal Telangana:** To modernize land administration by digitizing land records and streamlining transactions.
 - **Kaveri portal, Karnataka:** To reform land registration.
 - **Banglarbhumi platform, West Bengal:** To provide easy access to land and property records.

Supreme Court's Call for Systemic Reformation: Conclusive Titling and Technology

- **Conclusive Title:** Court has directed the Law Commission of India (LCI) for **creating a committee** with State participation to examine and **integrate property registration regime with conclusive titling.**
- **Restructuring old laws:** LCI should prepare a report on **restructuring century-old colonial-era laws governing property transactions**, including Transfer of Property Act (1882), Registration Act (1908), and Stamp Act (1899), to align them with modern technology.
- **Synchronization:** Align **registration with real-time land-holding records**, ensure mutation records, survey and settlement operations are timely and accurate so that the registration reflects actual holding.
- **Regulatory Authority:** Establish a **permanent regulatory body for registration offices** to build institutional memory and enable **real-time assessment** and up-gradation of the registration establishment.
- **Blockchain Technology based Land Titling:**
 - It can create a **secure, transparent, tamper-proof land registration** system, where each record becomes part of cryptographically linked ledger that cannot be altered without detection. Thus, **enhancing integrity of title records.**
 - > **Blockchain** is a **decentralized, immutable digital ledger** that securely records transactions across a network of computers (nodes).
 - > It organizes data into "blocks" that are cryptographically linked in a "chain," making records transparent, tamper-proof, and verifiable without a central authority like a bank or government.
 - It could **integrate cadastral maps, survey data and revenue records** into a single, verifiable and **accessible digital framework**, thereby **reducing fraud, improving traceability** and enhancing public trust in land ownership.



Read our previous coverage on Digitization of Land Record

Conclusion

A future-ready land governance architecture anchored in conclusive titling, harmonised laws, accurate land records and emerging technologies like blockchain, can significantly reduce disputes, enhance ease of transactions and restore public trust. Such reforms are essential not only for securing property rights but also for unlocking land's potential as a driver of economic growth, urban planning and social justice.

1.2. DIGITAL PERSONAL DATA PROTECTION (DPDP) RULES, 2025

Why in the News?

Government of India notified the **Digital Personal Data Protection (DPDP) Rules, 2025**.







About DPDP Rules, 2025

- Marks the full operationalisation of **Digital Personal Data Protection Act, 2023 (DPDP Act)**.
- **Ministry:** Ministry of Electronics and Information Technology.
- **Implementation timeline:** **18-month phased compliance period** for organizations to adjust their systems and adopt responsible data practices.

Key Provisions of the rules

- **Obligations on Data Fiduciaries:**
 - **Issue standalone consent notices:** That are clear and simple, provide an itemized description and specific purpose of personal data and specify means by which the Data Principal may withdraw consent.
 - > The **ease of withdrawing consent** must be comparable to **ease with which it was given**.
 - **Erase personal data:** If specified purpose is no longer being served (unless legally required to retain it).
 - > Personal data, and other logs related to processing need to be retained for a **minimum period of 1 year** from the date of processing, unless longer retention is mandated by law or notification.
 - **Issue Personal Data Breach Notification:** Informing all affected individuals without delay, explaining what happened, possible impact and steps taken to address the issue.
 - **Publish business contact information of designated officer/Data Protection Officer:** on the website or app for queries related to personal data.
 - **Mandatory Response within 90 Days:** for all requests related to access, correction, updating or erasure.
 - **Special Protection of children's data:** Through verifiable consent from a parent or guardian before processing a child's personal data.
 - > Exemption of consent allowed for essential purposes like **healthcare, education, and real-time safety and protection** of child.
- **Rights and protections for citizens (See infographic).**
- **Data Protection Board of India (DPBI):** Consisting of 4 members with dedicated portal and mobile application allowing citizens to file and track complaints.
 - Appeals against Board's decisions to be heard by **Telecom Disputes Settlement and Appellate Tribunal (TDSAT)**.
- **Other provisions:**
 - **Enhance obligations on Significant Data Fiduciaries (SDFs)** including mandatory periodic Data Protection Impact Assessments (DPIA), **independent audits once every 12 months**, stricter checks while using new or sensitive technologies etc.
 - **Consent Managers** to be companies based in India.
 - **Special Protection for Persons with Disabilities** if they cannot make legal decisions.

Rights of citizens under DPDP Rules

-  **Right to Nominate Another Person** to exercise their data rights on their behalf.
-  **Right to Give or Refuse Consent**, includes withdrawal of consent at any time.
-  **Right to Know How personal Data is Used**, includes information on what data has been collected and why it has been collected.
-  **Right to Access Personal Data** held by a Data Fiduciary.
-  **Right to Correct and update** Personal Data.
-  **Right to Erase Personal Data** in certain situations.

About DPDP Act, 2023

- **Aim:** To provide mechanism for the processing of digital personal data in a manner that recognizes both the right of individuals to protect their personal data and the need to process such personal data for lawful purpose.
- **7 Core Principles:** Consent and Transparency, Purpose Limitation, Data Minimisation, Accuracy, Storage Limitation, Security Safeguards, and Accountability.
- **Key Definitions**
 - **Data Principal:** Person to whom the data relates
 - **Data Fiduciary:** Person/company/government entity that processes data
 - **Consent Manager:** Entity registered with Data Protection Board of India (DPBI) to enable data principals to give, review, and withdraws consent.
- **Applicability:** Processing of digital personal data within India (collected digitally or digitized later), Processing outside India if offering goods/services in India
 - **Does not apply to:** Personal use data, publicly available data.
- **Consent Requirements:** Personal data processed only for lawful purposes with Data Principal's consent
 - **Consent not required for:** Government benefits/services, medical emergencies (legitimate uses).
- **Data Protection Board of India (DPBI):** Monitor compliance and impose penalties.
- **Financial penalties for non-compliance by Data Fiduciaries:**
 - Up to **₹250 crore** in case of failure to maintain reasonable security safeguards.
 - Up to **₹200 crore** for not notifying the Board or affected individuals of a personal data breach; violations of obligations relating to children.
 - Up to **₹50 crore** for any other violation of the Act or Rules.
- **Revises Section 8(1)(j) of the RTI Act:** By exempting disclosure of information which relates to personal information.

Need of digital data protection

- **Protection of Individual Privacy:** Without safeguards, citizens may face surveillance, profiling by **arbitrary state or Big tech companies** using Personal data (biometrics, location, health, financial details).
- **Prevention of Data Misuse & Exploitation:** Data can be misused for identity theft, financial fraud, targeted manipulation (ads, elections).
 - E.g., 33,000 additional Cybercrime cases were reported in 2023 as compared to 2021. (National Crime Records Bureau (NCRB))
- **Cyber-security & National Security:** Large datasets are targets for Hackers and hostile state actors for Cyber espionage.
 - E.g., **Cybersecurity incidents** in India rose from **10.29 lakh in 2022 to 22.68 lakh in 2024.**
- **Building trust in digital economy:** It will allow India's digital economy grow in a secure and globally competitive way.
 - India's digital economy accounted for **11.74% of GDP in 2022-23.**
- **Safeguarding Vulnerable Groups:** Children, elderly, women are more vulnerable to data breaches, online harassment and exploitation.
- **Ethical Use of Emerging Technologies:** Ensures non-discrimination, fair algorithms and human oversight.



Read our previous coverage on DPDP Act, 2023

Criticisms of DPDP Rules, 2025 and DPDP Act, 2023

- **Broad Exemptions:** Government can exempt notified agencies for reasons like **"security," "sovereignty," and "public order"** without clear oversight mechanisms from data protection obligations.
- **Missing Rights:** Act omits the right to data portability and the right to be forgotten.
- **Ambiguity in definitions:** E.g., "significant data fiduciary" and thresholds for stricter obligations.
- **Compliance Burden and Impact on Innovation:** High compliance costs and operational complexity may stifle business growth and innovation in Data-heavy businesses.

Other initiatives taken for digital Data protection

- **K.S. Puttaswamy Judgment (2017):** Recognized the **Right to Privacy** as a **fundamental right under Article 21** and directed the government to establish a **robust data protection framework**.
- **Justice B.N. Srikrishna Committee (2017):** Examined data protection issues and recommended a comprehensive law for data protection.
- **Digital Information Security in Healthcare Act (DISHA):** Framework for healthcare data protection.
- **Computer Emergency Response Team - India (CERT-In): Cybersecurity Directions (April 2022)** of CERT-In requires reporting incidents of data breach within 6 hours, maintaining security logs.

Conclusion

The DPDP Act and the DPDP Rules mark a major step towards a trustworthy and future-ready digital environment in India. They clarify how personal data must be handled, strengthen individual rights and fix clear responsibilities on organisations.

1.3. INDIA AI GOVERNANCE GUIDELINES








Why in the News?

Recently, Union Ministry of Electronics and Information Technology (MeitY) has unveiled **India AI Governance Guidelines** under the **IndiaAI Mission**.

About India AI Governance Guidelines

- It proposes a robust governance framework to **foster cutting-edge innovation**, and **safely develop and deploy AI for all while mitigating risks** to individuals and society.
- **Institutional framework to implement guidelines**
 - **High-level body (AI Governance Group):** For **overall policy formulation coordination of AI governance** in India across all agencies.
 - **Government agencies (MeitY, MHA, etc.) and Sectoral regulators (RBI, SEBI, TRAI, CCI, etc.):** For issuing sector-specific rules, handling grievances in their respective domains, etc.
 - **Advisory bodies (NITI Aayog, Office of Principal Scientific Advisor, etc.):** Supporting AI Governance Group with regular briefings and strategic advice on AI governance.
 - **Standards bodies (BIS, Telecommunication Engineering Centre, etc.):** Developing standards in relation to AI risk taxonomies, certification standards, etc.

Seven guiding principles (Sutras) for ethical and responsible AI

	Trust is the Foundation
	People First
	Innovation over Restraint
	Fairness & Equity
	Accountability
	Understandable by Design
	Safety, Resilience & Sustainability






















Issues in AI Governance

- **Digital divide:** Rural and underserved regions **lag in Digital Public Infrastructure (DPI)**, **high cost of deploying AI solutions and uneven adoption of AI** due to weak computing access in sectors like agriculture, healthcare, public services etc. hinder uniform AI adoption.
 - E.g., As per Internet in India (2024 Report), 51% rural population still does not access internet.
- **Discrimination:** AI trained on biased data can produce **discriminatory outcomes in welfare, policing** etc. deepening existing inequalities and disproportionately affecting marginalised groups without proper safeguards.
- **Transparency and Accountability:** AI's opaque **"black box" decisions** hinder transparency and accountability, especially in welfare and law enforcement, making it difficult to assess decisions and hold institutions answerable without clear audit mechanisms.
- **Cyber security:** Cyberattacks like **data manipulation and model hijacking can target AI systems**, disrupting public service delivery and leaking sensitive information impacting AI-enabled governance.
- **Policy & Regulation:** There is a need to urgently review existing sectoral laws to identify and plug regulatory gaps arising from AI-enabled decision-making, particularly in sensitive domains like healthcare and finance.

- E.g., **PCPNDT Act** must account for AI-based radiology tools that could enable unlawful sex determination.
- **IPR-related issues:** AI models trained on **copyrighted material without consent raise ownership and compensation disputes**, creating uncertainty over whether content creators or AI developers hold rights over resulting outputs.
 - E.g., **lawsuit against Google for providing “AI Overviews”** (feature in search engines that uses Gen AI to provide a concise, AI-generated summary of search results).
 - > Petitioners raised concerns that ‘AI Overview’ may divert traffic and may adversely impact the revenue of publishers and content providers.
- **Misuse:** Malicious uses of AI such as **deepfakes, data poisoning, adversarial attacks and AI-driven disinformation campaign**, can disrupt critical infrastructure, undermine public safety and national security.

Initiatives taken for AI Governance

- **India**
 - **National Strategy for AI (NSAI):** NITI Aayog’s **#AIforAll strategy** focuses on AI in sectors like healthcare, agriculture, and education.
 - **Digital Personal Data Protection Act, 2023:** It enhances data protection for individuals and address AI-related privacy concerns.
 - **Global Partnership on AI (GPAI):** To direct **responsible development and application of AI** with a focus on human rights, inclusion, diversity, and economic prosperity. India is a founding member of GPAI.
- **Global**
 - **Europe's AI Act, 2024:** Europe's first major regulation on AI, categorizing applications into four risk levels i.e. unacceptable, high risk, Limited risk and minimal risk.
 - **Bletchley Declaration, 2023:** Signed by 28 countries and European Union, it establishes a shared understanding of the opportunities and risks posed by frontier AI.
 - **G7 pact on AI, 2023:** It aims to establish a global framework for responsible development and use of AI systems, and participation is voluntary.
 - **OECD AI Principles, 2019:** They are first intergovernmental standard on AI and promote innovative, trustworthy AI that respects human rights and democratic values.

<p>About IndiaAI Mission</p> <ul style="list-style-type: none"> ● Launched in 2024, it aims to build a comprehensive ecosystem that fosters AI innovation by democratizing computing access, enhancing data quality. ● It seeks to deploy over 10,000 Graphics Processing Units (GPUs) for advanced AI computing infrastructure. <ul style="list-style-type: none"> ○ GPU is a powerful computer chip that process images and graphics faster, run AI programs, and handle complex tasks more efficiently than a regular processor. ● It is an umbrella programme by MeitY and implemented by ‘IndiaAI’ Independent Business Division under Digital India Corporation. 	<p>Seven Pillars of India AI Mission</p> <table border="1"> <tr> <td data-bbox="600 1144 803 1354">  India AI Compute Enhancing computational resources for AI development. </td> <td data-bbox="803 1144 1006 1354">  India AI Dataset Platform Providing a comprehensive platform for AI datasets. </td> <td data-bbox="1006 1144 1209 1354">  India AI Future Skills Equipping the workforce with necessary AI skills. </td> <td data-bbox="1209 1144 1502 1354">  Safe & Trusted AI Ensuring the ethical and secure use of AI. </td> </tr> <tr> <td data-bbox="600 1354 803 1564">  India AI Innovation Centre Fostering innovation and research in AI technologies. </td> <td data-bbox="803 1354 1006 1564">  India AI Application Development Initiatives Supporting the development of AI applications across sectors. </td> <td data-bbox="1006 1354 1209 1564">  India AI Startup Financing Providing financial support to AI Startups. </td> <td></td> </tr> </table>	 India AI Compute Enhancing computational resources for AI development.	 India AI Dataset Platform Providing a comprehensive platform for AI datasets.	 India AI Future Skills Equipping the workforce with necessary AI skills.	 Safe & Trusted AI Ensuring the ethical and secure use of AI.	 India AI Innovation Centre Fostering innovation and research in AI technologies.	 India AI Application Development Initiatives Supporting the development of AI applications across sectors.	 India AI Startup Financing Providing financial support to AI Startups.	
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Conclusion

By **coupling risk-based regulation with innovation-friendly standards**, investing in inclusive digital infrastructure, and strengthening institutional capacity, India can harness AI as a force multiplier for development rather than a source of exclusion or harm. A **collaborative approach guided by transparency, accountability, and global cooperation**, will be critical to ensure that AI remains aligned with constitutional values, public trust, and long-term national priorities, positioning India as a responsible and credible leader in the global AI ecosystem.

1.4. TRIBUNALS

Why in the News?

Recently, SC struck down **Tribunal Reforms Act, 2021** relating to appointments, tenure, and service conditions of members of various Tribunals.

Key Highlights of the Judgement

- **Legislative Override over Judicial Directions:** As per SC, the 2021 Act contradicts binding judicial pronouncements that repeatedly clarified the standards relating appointment, tenure, and functioning of tribunal members.
 - Earlier in 2020 Madras Bar Association case (MBA IV), SC had struck down the Tribunal Rules 2020 and in 2021 Madras Bar Association case (MBA V), the Court struck down the Tribunal Reforms Ordinance 2021.
- **Against the Doctrine of Constitutional Supremacy:** The Act fails to remove the defects identified in prior judgments and instead reenacts them under a new label.
 - This violates the **constitutional principles of separation of powers and judicial independence.**
- **Present Status:** SC held that until the Parliament enacts a new Act giving effect to its directions in the previous judgments, the directions given in the previous MBA IV and MBA V cases will continue to operate.
- **National Tribunal Commission:** The Court directed the Union to form a **National Tribunal Commission** within a period of **four months**.

Key Contentious Issues in the Act vis-à-vis SC Judgement	
Tribunal Reforms Act, 2021	SC Judgements
<ul style="list-style-type: none"> • Tenure and Age limit: Four 4-year tenure with a minimum age limit of 50 years for appointment. • Search-cum-Selection Committee: To give recommendations regarding Chairperson and Member to be appointed by the Central Government. • Composition of the Above Committee: <ul style="list-style-type: none"> ○ Chairperson: Chief Justice of India (CJI) or Judge of SC nominated by CJI. ○ Two Members: Secretaries nominated by Central Government. ○ One Member: <ul style="list-style-type: none"> > In case of appointing Chairperson, shall be the outgoing Chairperson of that Tribunal. > In case appointing a Member, shall be the sitting Chairperson of that Tribunal. 	<ul style="list-style-type: none"> • Tenure: Fixed tenure of four years insufficient to secure independence of tribunals. <ul style="list-style-type: none"> ○ SC held that members should have at least 5 year tenure, and that lawyers having a minimum 10 years of experience must be considered for appointments. • Composition of Search-cum-Selection Committee: 2020 Rules failed to ensure judicial dominance in the committee (MBA (IV)). • National Tribunals Commission: An independent body to supervise the appointments, functioning, administrative and infrastructural needs of the Tribunals. <ul style="list-style-type: none"> ○ Till it is constituted, a separate wing in Ministry of Finance to be established for the purpose.








Tribunal System in India

- **About:** Tribunals are **judicial or quasi-judicial** institutions established by law to provide a platform for **faster adjudication** compared to traditional courts, as well as **expertise on certain subject matters**.
- **Genesis:** History of tribunals in India dates back to 1941 with the establishment of the first Tribunal, **Income-Tax Appellate Tribunal**.
- **Constitutional Status:** **42nd Amendment Act, 1976** inserted **Articles 323-A and 323-B** dealing with Tribunals.
 - **Article 323A** empowered **Parliament** to constitute **administrative Tribunals** (both at central and state level) for adjudication of matters concerning recruitment and service conditions of public servants.
 - **Article 323B** specified certain subjects (like taxation and land reforms) for which **Parliament or state legislatures** may constitute tribunals by enacting a law.
 - In 2010, the Supreme Court held that subject matters under **Article 323B are not exclusive** and could extend to any subject matters specified in the **Seventh Schedule**.
- **Appeals:** Currently, tribunals have been created **both as substitutes to High Courts** and as **subordinate to High Courts**.

- In the former, appeals from Tribunals lie directly with SC. In the latter case, appeals are heard by the **corresponding High Court**.
- In **Chandan Kumar Case (2017)**, SC held that appeals against decisions of tribunals were allowed in the **division bench of High Courts**.

Significance of Tribunals

- **Specialization:** Each tribunal is given **specific jurisdiction to hear and decide cases** within its designated area of expertise.
 - Some **tribunals have appellate jurisdiction**, meaning they hear appeals from decisions made by lower authorities or government bodies.
- **Speedy Resolution:** This is particularly **important in areas where timely decisions are crucial**, such as service matters, tax disputes, and environmental issues.
- **Reduced Case Load:** By handling specific types of cases, tribunals **contribute to reducing the burden on traditional courts**, helping to address the issue of judicial backlog.
- **Accessibility:** Tribunals are **geographically dispersed**, with benches located across the country.
- **Efficiency in Service Matters:** Administrative Tribunals, such as the Central Administrative Tribunal (CAT), expedite the resolution of service-related matters for government employees.

 Key Developments in Indian Tribunal System 				
1969	1976	Since 1980s	2017	2021
 <p>First Administrative Reforms Commission recommended to set up Civil Services Tribunals at the national and state levels.</p>	 <p>Swaran Singh committee recommended setting up administrative tribunals (at national and state level) to adjudicate on service matters, based on which 42nd amendment was passed.</p>	 <p>Several tribunals were established under different Acts including Central Administrative Tribunal; Securities Appellate Tribunal for appeals over financial sector regulators, etc.</p>	 <p>Finance Act reorganised tribunals, based on functional similarity, reducing their number from 26 to 19, delegating powers to central government to make Rules regarding qualifications, appointments, etc.</p>	 <p>Tribunals Reforms (Rationalisation and Conditions of Service) Bill abolishes 9 tribunals and transfer their functions to existing judicial bodies (mainly High Courts).</p>

Constitutional balance between Judicial Independence and Parliamentary Sovereignty in India

- **System of Checks and Balances:** India's constitutional framework distributes power amongst three branches of government establishing an interplay between **administrative sovereignty** and **judicial supremacy**.
 - While the Parliament could debate on policies, financial allocations, and implementation issues, the judiciary decides on the **constitutionality and legality of executive actions**.
- **Constitutional Supremacy:** It acts as the **anchoring principle** rejecting rigid scales between Parliament and judiciary making them both inferior to the Constitution.
- **Judicial Review: Article 13** prohibits the state from making laws that violate fundamental rights and through Judicial Review, judiciary can declare any law violative of basic structure or fundamental rights as unconstitutional.
- **Limitations on Parliament's Amending Power:** A **Constitution Amendment Bill** needs support of more than half the members in each House of Parliament, and at least two thirds of the members present and voting.
 - Additionally, ratification by more than half the states is required for amendments that affect powers of states and the Judiciary. Further, Parliament **cannot amend the 'basic structure' of the Constitution**.
- **Immunity to the Members:** Constitution guarantees protections to **parliamentary proceedings** and to Members of Parliament, who enjoy immunity from court proceedings for anything said or voted in the Parliament.
 - Similarly, the conduct of a SC or HC judge cannot be discussed in Parliament unless a motion for removal is under consideration.

Conclusion

While there have been instances of **judicial activism** and **parliamentary legislations overriding court rulings**, a healthy convention respecting the boundaries of each is essential to ensure that **neither institution holds absolute power**.

1.5. LEGAL AID IN INDIA

Why in the news?

Recently, the Legal Services Authorities Act, 1987, which was implemented on November 9, 1995 and annually observed as National Legal Services Day, completed 30 years of its implementation.

Journey of Legal Aid in India

- **1949: Bombay Government Committee** emphasized the **government's duty** to provide free legal aid, e.g. coverage for court fees, lawyer fees, etc.
- **1958: 14th Law Commission Report** - emphasized free legal aid was the **state's obligation**.
- **National Conference on Legal Aid (1970) and Expert Committee Report (1973)**: chaired by V.R. Krishna Iyer, advocated for a **statutory basis** for legal aid.
- **1976**: Legal aid was formalized under the constitution with the insertion of **Article 39A**.
- **1980**: The Committee for Implementing Legal Aid Schemes was established under Justice P.N. Bhagwati to manage legal aid programs nationwide.
- **1987**: Legal Services Authorities Act, 1987, was enacted.

Constitutional Provisions for Legal Aid



Article 39A	Article 21	Article 22(1)	Article 14
Inserted by the 42nd Amendment (1976), mandates the State to secure free legal aid.	Right to free legal aid as a fundamental right implicit in the Right to Life and Personal Liberty .	Guarantees the right of an arrested person to consult and be defended by a legal practitioner of his or her choice.	Ensures no person is denied equality before the law and equal protection of laws within India.

About Legal Services Act 1987

- The act established a **three-tier system to provide free and competent legal services**
 - **National Legal Services Authority (NALSA)**: Headed by the Chief Justice of India.
 - **State Legal Services Authorities (SLSA)**: Headed by the Chief Justice of High Court.
 - **District Legal Services Authorities (DLSA)**: Headed by the District Judge.
- **Persons eligible for getting free legal services**
 - SC/ST members, women and children, victims of trafficking or disasters, the mentally ill or disabled, industrial workmen, persons in custody, and those with income below the prescribed limit (below **₹5 lakh for Supreme Court cases**).
 - States can decide the **threshold for eligibility under the act**, which varies from 1 Lakh to 3Lakh.
- **Establishment of Lok Adalats**: An alternative dispute resolution mechanism that settles cases amicably, including pre-litigation matters (See the box after the article)

Role of NALSA

- **Policy and Scheme Development**: NALSA lays down policies and frames schemes for legal services implementation.
- **Victim Compensation**: Through schemes like "**Compensation Scheme for Women Victims/Survivors of Sexual Assault/other Crimes**" NALSA aims to provide compensation and support to women who are victims or survivors of sexual assault or other crimes.

- **Capacity Building:** It mandates standardized selection processes for lawyers and develops Training Modules for Legal Services Lawyers and Para-Legal Volunteers (PLVs).
- **Prison Legal Aid:** Oversees the functioning of Jail Legal Aid Clinics (PLACs) in almost all prisons.
- **Legal Aid and Assistance:** It includes advocate representation, process fee payments, document preparation, including drafting and translation, and provision of certified copies of legal documents in proceedings.
- **Social Justice Litigation (PIL):** e.g. NALSA filed a PIL that resulted in the Supreme Court's landmark 2014 judgment recognizing the rights of the transgender community.

Note: Free legal services also include **providing aid and advice to help beneficiaries access welfare schemes** of the Central or State Government and to ensure their overall access to justice.

Challenges Related to Legal Aid in India

- **Lack of Awareness and Legal Literacy:** Only 15% of rural residents are aware of these free legal services (NALSA report 2022).
- **Substandard Quality of Representation:** Legal aid to the poor often becomes poor legal aid due to inadequate remuneration, high workload, etc.
- **Underfunding:** Department-related parliamentary committee report (2024) flagged **India's per capita free legal aid** spend is critically low, i.e., just ₹0.75 per capita annually.
- **Digital Divide:** While tech programs like **Tele-Law** exist, their effectiveness is limited in rural areas due to low digital literacy and inadequate digital infrastructure.
 - E.g. Only **33% of rural India has access to the internet**, compared to 67% in urban areas.
- **Limited Physical Outreach:** 1 lawyer for every 10,000 people in rural India Vs. 1 for every 1,000 in urban areas portrays low availability in rural areas.

Conclusion

A stronger legal aid system requires better public awareness, improved quality of counsel, and enhanced institutional capacity. Using technology, empowering PLVs, and adopting a needs-based approach for vulnerable groups can greatly improve access to justice.

LOK ADALAT

- **Lok Adalat** is an **ADR** (alternative dispute resolution) forum that settles **pending or pre-litigation** cases reducing judicial pendency
- First held in Gujarat (1982); given statutory status under **Legal Services Authorities Act, 1987** which was amended in 2002 to establish **Permanent Lok Adalats**
- **There are three types of Lok Adalats**
 - **State Lok adalats:** Created organised as per the local conditions and needs
 - **National Lok Adalats:** Conducted quarterly for settlements in all courts in 1 day.
 - **Permanent Lok Adalats:** Permanent establishments in most districts to provide compulsory pre-litigative mechanism for disputes related to Public Utility Services.
- Handles, compoundable criminal, or other disputes eg. labour disputes; **non-compoundable offences** (where settlement is not possible) **are excluded**.
 - India's legal aid system has reached **44.22 lakh people (2022-25)** and resolved 23.58 crore cases through Lok Adalats.
- Awards are **final** and **binding** with no appeal
- Has **civil court powers, can set its own procedure**, and charges **no court fee**.
- **Offers Procedural flexibility** (no strict application of the CPC and Evidence Act) **and direct interaction** with the judges.

1.6. NEWS IN SHORTS

1.6.1. SUPREME COURT ON ASSENT TO BILLS

A 5-Judge bench of the Supreme Court in the 16th Presidential Reference (under Article 143) held that Court cannot impose any **timelines for decisions of the President and the Governor on granting assent to Bills** under **Articles 200/201** of the Constitution.

- Previously, in April 2025, the Supreme Court prescribed specific time-limits for the Governor and President to act on Bills under Article 200 and 201.
- Article 143** allows the President to seek the opinion of the Supreme Court on significant legal or factual questions.

About article 200 & 201



Article 200: When a Bill passed by State Legislature is presented, the Governor has four options:

- Assent to the Bill.
- Withhold assent, effectively rejecting the Bill.
- Return the Bill for reconsideration by the State Legislature.
- Reserve the Bill for the President's consideration.



Article 201: When a Bill is reserved by a Governor for the consideration of the President,

- The President shall declare either that he assents to the Bill or withhold assent or return the Bill for the consideration of the Legislature.
- No timeline is specified** for the President to decide on reserved Bills.

Other Key Highlights of the Judgment

- 'Deemed Assent' is alien to the Constitution:** Courts cannot assume that a Bill is approved merely because the court-ordered time has lapsed.
 - It would amount to **judicial usurpation of constitutional powers** of the President/Governor and violates **Separation of Powers and Constitutional scheme of federal governance**.
- Governors/President Cannot Sit on Bills Indefinitely:** As it violates federalism, legislature's will and constitutional morality.
- Limited Judicial Review:** Courts **can intervene** if the Governor/President acts with **malafide intent**.
 - Review limited to **process**, not **merits** of assent.
- The President is not required to **seek advice of the Supreme Court** whenever a Governor reserves a Bill for her assent as the **subjective satisfaction of the President is sufficient**.



Read our previous coverage on Assent to State Bills

1.6.2. ARTIFICIAL INTELLIGENCE AND THE JUDICIARY

The Supreme Court's Centre for Research and Planning released White Paper on Artificial Intelligence and the Judiciary. The paper reviews the safe use of AI in the judiciary, outlines key ethical challenges, offers recommendations, and draws on international case studies to illustrate emerging risks.

Key Highlights of the Report

Risks and Ethical Challenges of AI (Artificial Intelligence)

- Overreliance and Loss of Human Judgement:** It can weaken **judicial discretion**, and the **opaque nature of models** reduces **accountability**.
- Hallucinations and Fabricated Content:** It may produce false information or non-existent citations. **E.g. US case "Roberto Mata v. Avianca and Coomer v. Lindell"**.
- Algorithmic Bias:** **E.g. The US COMPAS tool**, challenged in State v. Loomis showed **potential racial bias**.
- Others:** **Deepfakes and Evidence Manipulation, Privacy and Confidentiality Risks, Intellectual Property Concerns etc.**

Key Initiatives



India

- **e-Courts Mission Mode Project:** AI tools tackle case backlog and administrative delays.
- **SUPACE (Supreme Court Portal for Assistance in Court Efficiency):** Helps judges summarise case records.
- **SUVAS (Supreme Court Vidhik Anuvaad Software):** Translated >36,000 Supreme Court judgments into 19 Indian languages.
- **Others: TERES (AI-Based Transcription), LegRAA (Legal Research Analysis Assistant).**



Global Initiatives

- **UNESCO:** Published **Recommendation on the Ethics of Artificial Intelligence and Global toolkit on AI and Rule of Law.**
- **OECD:** It published **Principles on Artificial Intelligence** (2019) the first intergovernmental standard for AI.
- **EU:** EU AI Act regulating high-risk judicial AI systems.
- **National Models:** Brazil's **ATHOS**, Singapore's **LawNet AI**.

Key Recommendations

- **Create AI Ethics Committees:** Courts should establish bodies with technical and legal experts to review AI tools and set deployment standards.
- **Prefer Secure In-House AI Systems:** Developing internal tools reduces confidentiality, security and data-exposure risks.
- **Adopt a Formal Ethical AI Policy:** A clear framework must define authorised uses, responsibilities and accountability mechanisms.
- **Others:** Mandate Disclosure and Audit Trails, Provide Comprehensive Training etc.

1.6.3. PRISONS IN INDIA 2025 REPORT

Published by Centre for Research & Planning, Supreme Court of India, this report examines prison manuals, stereotypes, mental health support, wages, and technological reforms, proposing a human-rights-based approach to prison administration.

Key Issues in Indian Prisons

- **Governance:** There is diversity in prison governance as prisons fall in the legislative and administrative domain of the States under List II, Schedule 7 of the Constitution.
 - India follows the **United Nations Standard Minimum Rules for the Treatment of Prisoners**, known as '**The Nelson Mandela Rules**', which advocates the humanisation of prison institutions.
- **Overcrowding:** Prisons have an occupancy rate of 131.4% and 3 out of every 4 prisoners are undertrials.
 - Open prisons remain underutilised with an occupancy rate of 74%.
- **Stereotypes:** Many prison manuals refer to prison work related to conservancy and sanitation as 'menial' or 'work of degrading character', which perpetuates a hierarchical view of labour.
- **Caste Bias:** Some prison manuals continue to retain provisions assign prison work based on caste identity.
 - This has been held unconstitutional in **Sukanya Shantha Case**.
- **Wage Disparity:** Disparity ranges from Rs. 20 (much lower than lowest minimum wage) in Mizoram to Rs. 524 in Karnataka.
- **Women Prisoners:** Prison manuals do not explicitly provide for the right to reproductive choice and limit women prisoners to predominantly domestic tasks like cooking, denying them equal access to work.
- **Ineffective legal aid:** Quality of legal aid for prisoners suffers due to the lack of physical and digital infrastructure.



Read our previous coverage on Prison Reforms

Way Forward



Replace stereotypical terminology associated with certain types of work.



Ensure a **rotational/roster system** to eliminate caste discrimination.



review and **revise prisoner's wage every three years.**



Prioritise cases of undertrial Prisoners.



Real time data update for Inter-operable Criminal Justice System (ICJS)

1.6.4. MODEL YOUTH GRAM SABHA (MYGS)

Ministry of Panchayati Raj, in collaboration with the Ministry of Education and Ministry of Tribal Affairs, launched MYGS initiative.

About MYGS

- It is a pioneering initiative to **strengthen Janbhagidari** and **promote participatory local governance** by engaging students in simulated Gram Sabha sessions.
- It is aligned with **National Education Policy 2020**, and will be implemented across Jawahar Navodaya Vidyalayas (JNVs), Eklavya Model Residential Schools (EMRSs), and State Government Schools.
 - JNVs** are residential schools established under NEP 1986 to provide education to rural children irrespective of their socio economic status.
 - EMRSs** aim to provide quality education to Scheduled Tribes (ST) students in areas having more than 50% ST population and at least 20,000 tribal persons.

Key Objectives



Educate Students about the **Panchayati Raj System**



Encourage Participation in **Gram Sabhas and Local Governance**



Develop Leadership Skills to **Strengthen Local Institutions**



Promote Understanding of Real-Life **Governance Challenges**



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Performance and Progress Analysis

2. INTERNATIONAL RELATIONS

2.1. RISING GLOBAL NUCLEAR RISK AND INDIA'S APPROACH TO DISARMAMENT

Why in the News?

Recently, the US President announced the **resumption of nuclear weapons testing**, a move that could **weaken non-proliferation and disarmament efforts** built over decades.

Factors behind Rising Nuclear Risk

- **Geopolitical tensions:** Rising conflicts push states toward nuclear securitization and readiness.
 - E.g., **SIPRI Yearbook 2024** notes that **operational warheads have been increasing** yearly.
- **Doctrinal ambiguity:** Lack of clarity on nuclear-response thresholds increases miscalculation risk.
 - E.g., uncertainty on retaliation to **cyber-attack on nuclear command systems**.
- **Treaty breakdown:** Collapse of arms control agreements weakens communication and arms limits, raising escalation risk.
 - E.g., **Fall of INF Treaty** (US–Russia), **US withdrawal from Iran nuclear deal**, etc.
- **Faster delivery systems:** New missile tech compresses decision time and raises misidentification dangers.
 - E.g., **Hypersonic missiles** reduce reaction time for states increasing rapid escalation risk.
- **False alarm risks:** Early-warning errors can trigger accidental conflict unless checked by humans.
 - E.g., **1983 Soviet false-alarm incident**.
- **Space militarization:** Arms competition expanding to space creates new strategic instability.
 - E.g., **U.S. Space Force expansion**.
- **Weaponization of AI:** Increased use of AI in military systems can raise nuclear-escalation risk by speeding decisions and increasing chances of misinterpretation, even outside nuclear platforms.

Nuclear Disarmament

- It aims to **reduce or eliminate nuclear weapons** globally, through unilateral decisions or international agreements, with the **goal of a nuclear-free world**.
- **Key Issues**
 - **Ineffective Global Platforms:** Multilateral bodies show minimal progress, weakening confidence.
 - > E.g. **Conference on Disarmament stagnation** over decades reflects stalled diplomacy.
 - **Treaty Loopholes:** Ambiguous clauses allow delay or avoidance of commitments. E.g., **NPT lacks strict timelines** for arsenal reduction.
 - > **Exit from Agreements:** Withdrawal sets precedents for non-compliance and erodes norms. E.g. **North Korea's NPT exit**.
 - > **States Outside the Framework:** De-facto Nuclear-armed countries not bound by core treaties challenge universality. E.g. **India, Israel, and Pakistan** remain outside NPT obligations.

Global Nuclear Weapons Treaties/Other Initiatives



Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (1970)

Prevents the spread of nuclear weapons and promotes disarmament



Comprehensive Nuclear-Test-Ban Treaty (CTBT) (1996)

Prohibits nuclear explosion tests but awaits ratification by key countries



Treaty on the Prohibition of Nuclear Weapons (TPNW) (2021)

Legally binds countries to refrain from nuclear weapons activities



Conference on Disarmament (CD) (1978)

Serves as a forum for negotiating arms control agreements



United Nations Office for Disarmament Affairs

Aims for general and complete disarmament globally



International Atomic Energy Agency

Ensures the safe and peaceful use of nuclear technology











Pact for the Future (2024)

Reaffirms the goal of total nuclear disarmament

- **Commitment-Implementation Gap:** States endorse disarmament in forums but upgrade weapons simultaneously. E.g. Russia backs NPT but also modernizes its delivery systems.
- **Dependency on Nuclear Deterrence:** Military spending gaps push reliance on nuclear deterrence for strategic parity. E.g., Russia sustains nuclear deterrence against NATO's stronger conventional forces.
- **Lack of Binding Rules for Delivery Systems:** Absence of dedicated legal controls enables **unregulated missile competition**.

India's Stand on Nuclear Disarmament

- **Core Principle:** India supports **global, non-discriminatory and verifiable nuclear disarmament** that applies equally to all states.
- **First to Call for Test Ban:** India was the **first country** in 1954 to call for a worldwide ban on nuclear testing.

India's Nuclear Doctrine	
 Credible Minimum Deterrence Maintaining the minimum nuclear capability for effective deterrence.	 No First Use Committing to not initiating nuclear attacks.
 Massive Retaliation Responding to nuclear attacks with overwhelming force.	 Civilian Control Ensuring nuclear weapon use is authorized by civilian leadership.
 Protection of Non-Nuclear States Committing to not using nuclear weapons against non-nuclear states.	 Response to Non-Nuclear WMDs Reserving the option to use nuclear weapons in responses to biological or chemical attacks.
 Non-Proliferation Commitment Enforcing strict controls on nuclear materials and supporting disarmament efforts.	 Vision for Nuclear-Free World Supporting global nuclear disarmament to achieve a world without nuclear weapons.

- **Nuclear Ban Convention:** India proposed a global convention in 1978 to prohibit the use or threat of nuclear weapons.
- **Phased Disarmament Plan:** India introduced a **UNGA Action Plan in 1988** for eliminating nuclear weapons in three phases.
- **Stand on Global Treaties**
 - **NPT: Opposes** because it recognizes nuclear weapons for **only 5 countries**.
 - **CTBT: Not signed** due to **lack of focus on nuclear disarmament** and **India's security concerns**.
 - **TPNW: Not supported** as it lacks **new legal standards for disarmament**.
- **Multilateral Approach:** India advocates negotiated **universal agreements** and supports a **Nuclear Weapons Convention** within the **Conference on Disarmament**, which it considers the **main platform for a global nuclear ban treaty**.

Conclusion

Mitigating nuclear risks will require **rebuilding trust through renewed arms control, transparent doctrines, and inclusive multilateralism** that keeps pace with emerging technologies. India's consistent advocacy for **universal, non-discriminatory and verifiable disarmament**, combined with restraint, risk-reduction measures and civilian oversight, offers a pragmatic pathway. Sustained dialogue, strengthened global institutions, and incremental confidence-building can together bridge the gap between deterrence realities and the shared objective of a nuclear-weapon-free world.

2.2. G2

Why in the News?

At the recent APEC Summit in Busan, South Korea, the **US President described his meeting with the Chinese President as a "G2" engagement**, implying a **US-China duopoly in global affairs**.

Background of the Meeting

- The meeting took place in the backdrop of an **escalating trade war** between US and China.
- It resulted in a **temporary trade truce** including lowering of US tariffs on China, relaxation on export of rare earths from China to US, etc.

G2 (Group of Two)

- The G2 concept was first proposed in **2005** by **economist C. Fred Bergsten**.
- The terminology reflects **formal recognition of China's great-power status** and promotes the idea that the **US and China jointly shoulder responsibility for major global issues**, such as macroeconomic stability, global warming, etc., effectively **dividing the world into two spheres of influence**.

Implications of G-2 duopoly

- **Global Duopoly & Strategic Realignment:** The G-2 framing signals a shift in world order by **acknowledging China as a near-equal to the US**, prioritizing US–China cooperation while sidelining other powers like EU, Russia, India, and Japan.
- **Economic Leverage for China:** China's **weaponization of rare earth exports** reinforces its confidence in holding future bargaining advantages.
- **Eroding Security Guarantees:** US allies fear that a G-2 setup could reduce the US military presence in East Asia and weaken security commitments. **E.g.** Taiwan.
- **Strained India-US Relationship:** The shift comes amid already tense ties including enhanced tariffs on Indian goods.
 - **Further**, the G-2 concept fuels uncertainty about the future of the **India-US partnership in the Indo-Pacific region** to counter China's rise, **e.g.** postponement of the Quad summit.

Key Determinants Limiting G-2 Formation

- **Political and Ideological Differences:** The two nations have vastly different political systems and worldviews. The **U.S. champions a rules-based liberal order** based on democracy, while **China prioritizes sovereignty and state-led development**.
- **Mutual Distrust and Rivalry:** The relationship is primarily defined by **strategic competition and rivalry**, not cooperation.
 - Structural issues such as **the status of Taiwan, territorial disputes in the South China Sea, trade wars, and technology restrictions** fuel deep suspicion and make a genuine, long-term partnership impossible.
- **China's Rejection of the Concept:** China has historically resisted formal G2 framing, **preferring multilateralism via the United Nations or BRICS**, mainly to avoid being seen as a junior partner of the US.

Way ahead for India

- **Preserving Strategic Autonomy:** by avoiding dependence or subordinate alignment with any single power. **E.g.** participation in BRICS, QUAD, etc.
- **Diversify economic and security partnerships:** to minimize vulnerabilities and broaden strategic options by **finalizing more Free Trade Agreements (FTAs)**. **E.g.** with EU
- **Deepening Collaboration:** with like-minded regional and global partners to advance national interests. **E.g.** ASEAN

Conclusion

While talk of a **G2** signals the enduring weight of US–China relations, deep mistrust and ideological differences make a true duopoly unlikely. For India, the priority is to uphold strategic autonomy, expand diverse partnerships, and work with like-minded countries to strengthen a multipolar global order.

2.3. G20 SUMMIT 2025

Why in News?

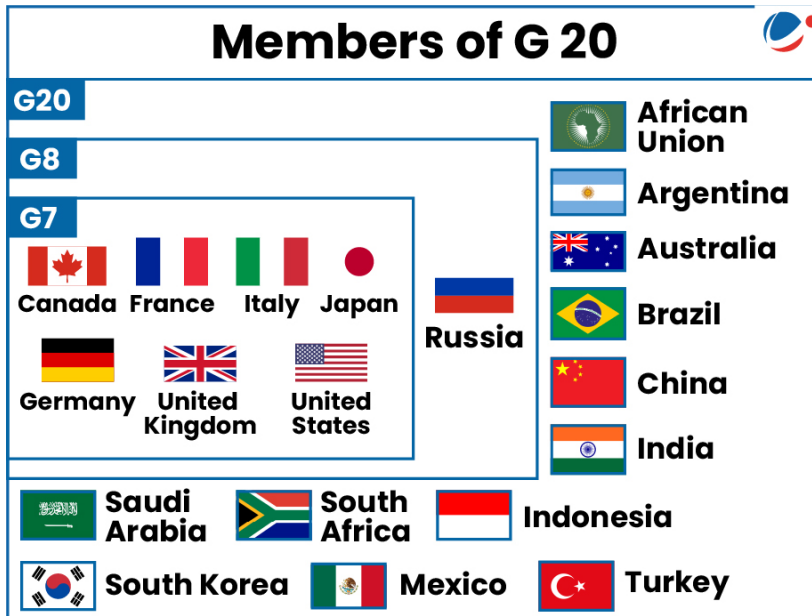
The 20th G20 Summit was held in Johannesburg, South Africa, under the theme of 'Solidarity, Equality, and Sustainability'.

More on the News:

- It was the **first ever G20 Summit held on African soil**.
- South Africa's G20 Presidency was guided by the African philosophy of **Ubuntu (I am because we are)**.

Key Takeaways of the G20 Summit 2025 (Johannesburg Declaration)

- **Debt Sustainability:** It proposed a **Cost of Capital Commission** to examine structural issues that drive up borrowing costs for developing economies.
- **Global Resilience and Development:**
 - Pledged **universal coverage of early warning systems** by implementing **UN Early Warnings for All Initiative** by 2027 for disaster risk reduction.
 - Launched the **AI for Africa Initiative** to expand computing power and talent across African Countries.
- **Energy and Climate Transition:**
 - **Mission 300** led by **World Bank Group** and **African Development Bank** aims to connect 300 million people to electricity in Africa by 2030.
 - Reaffirmed the commitment to **triple global renewable energy capacity** and **double the global average annual rate of energy efficiency improvements** by 2030.
- **G20 Critical Minerals Framework:** It is a voluntary and non-binding blueprint to focus on securing sustainable value chains, investment in mineral exploration, and strengthen governance for sustainable mining practices.
 - It fully preserves the sovereign right of mineral-endowed countries to harness their endowments for inclusive economic growth.
- **Youth & Gender Targets:**
 - Adopted the **Nelson Mandela Bay Target** to reduce the rate of youth **Not in Employment, Education, or Training (NEET)** by 5% by 2030.
 - Adopted revised **Brisbane-eThekweni Goal:** reduce the gender gap in labour force participation by 25 percent by 2030 from 2012 levels.



G20

Inception: It was founded in 1999 after Asian Financial Crisis.

Composition: 19 countries+ European Union (EU) + African Union (AU)

Represents ~80% of global GDP, 75% of global exports & 60% of global population.

Organisational Structure: The G20 operates without a permanent secretariat.

Work is conducted through two parallel streams:-

- a. Finance Track** (led by Finance Ministers and Central Bank Governors) &
- b. Sherpa Track** (It is headed by Sherpa who is representative of the Leader).

India's proposals at G-20 Summit 2025 included creation of



G20 Global Traditional Knowledge Repository



G20 Africa Skills Multiplier



G20 Global Healthcare Response Team



Open Satellite Data Partnership



Critical Minerals Circularity Initiative



G20 Initiative on Countering the Drug Terror Nexus

Significance of the G20:

- **Legitimacy and Inclusivity:** The G20 brings together Advanced Economies (G7) and the Emerging Market Economies (BRICS), giving its decisions greater global legitimacy than any smaller grouping.
 - The inclusion of the AU further solidified its representative stature.
- **Economic Crisis Management:** It serves as the primary coordinating body for global economic policy, having demonstrated its efficacy in preventing the 2008 Financial Crisis from escalating into a global depression.
- **Multilateral Reform Driver:** It acts as a powerful collective voice to drive the reform agenda of key international institutions, specifically the IMF, World Bank, and WTO.
 - It aims to ensure that they are fit for the challenges of the 21st century and represents the multipolar reality.
- **Global Agenda Setter:** The G20 effectively establishes and mainstream key global norms and policies, from international taxation {Base Erosion and Profit Shifting (BEPS), Global Minimum Tax} to the adoption of Digital Public Infrastructure (DPI) models and the framework for global efforts.
- **Effectiveness Related to Global South in G20 Summit 2025:**
 - **Shifting Power Dynamics:** The four-year continuum of Global South Presidencies (Indonesia, India, Brazil and South Africa) successfully used the platform to articulate development priorities such as debt sustainability, building a fairer international order at the global stage.
 - **Africa at the Centre:** G20's ability to achieve a consensus declaration, despite major geopolitical rifts demonstrates operational resilience and growing influence of the Global South.

Do you know?

➤ On the sidelines of G20, **Australia-Canada-India Technology and Innovation (ACITI) Partnership** was announced which aims to enhance cooperation in **critical and emerging technologies**.

Challenges Faced by G20 in Contemporary World Order:

- **Consensus Fatigue:** Rising tensions and diverging interests among major powers (e.g., US-China rivalry, Russia-USA issues) create profound diplomatic friction, leading to vague and watered down language in declarations on sensitive issues.
- **Undermined Legitimacy:** The absence of key world leader (E.g. USA) from 2025 summit due to political disagreements undermines the G20's legitimacy as the premier global steering committee.
- **Non-Binding Pledges:** G20 commitments are non-binding in nature. Moreover, lack of enforcement mechanism leads to chronic delays in implementing critical pledges, particularly in climate finance and debt restructuring.
- **Ineffective Common Framework for uncommon challenges:** E.g. G20 Common Framework for Debt Treatment has been criticized for being too slow and complex.
- **Other Challenges:**
 - **Protectionism and Trade:** Despite commitments to free trade, a resurgence of nationalistic industrial policies and subsidies among major members threatens to create geo-economic fragmentation and undermine the global trading system. E.g. MAGA in USA.
 - **Agenda Overload:** The G20's agenda has expanded significantly to include a vast array of issues (AI governance, health security, gender equality, etc.), which can dilute focus and strain resources, further contributing to implementation difficulties.

Conclusion

India's ability to drive G20 priorities on debt relief, critical minerals, and digital public infrastructure will define its role in shaping a multipolar world order. The Johannesburg Summit therefore marks a strategic inflection point for India to translate agenda-setting into sustained global leadership.

2.4. INDIA-US DEFENSE TIES

Why in the News?

Recently, India and the US have signed a **10-year framework pact for defense partnership**.

More on the News

- This agreement is a follow-up to **similar 10-year Framework Agreements** signed in **2005 and 2015**.
- The US has also approved, recently, the sale of **Javelin anti-tank missile systems, Excalibur guided artillery munitions and related equipment** to India.

India-US Defense Ties

- **India-US defence cooperation** began during the **1962 Sino-Indian War**, when the US supplied India with transport aircraft, weapons, and training.
- **Dialogue Mechanism**
 - **Apex Dialogue: 2+2 Ministerial Dialogue** co-chaired by the Minister of External Affairs and Minister of Defense and the US Secretary of State and Secretary of Defense.
 - **Others:** Defense Policy Group (DPG), Military Cooperation Group (MCG), Defense Joint Working Group (DJWG) etc.
- **Foundational agreements**
 - **General Security of Military Information Agreement (GSOMIA) (signed in 2002):** Allows the **sharing of classified information** by the U.S. government and firms with the **Indian government and state-owned enterprises**.
 - **Logistics Exchange Memorandum of Agreement (LEMOA) (signed in 2016):** It gives the two countries' militaries access to each other's facilities for **refueling and replenishing**.
 - **Communications, Compatibility and Security Agreement (COMCASA) (signed in 2018):** It allows the **sale and exchange of encrypted communications data and equipment**.
 - **Basic Exchange and Communications Agreement (BECA) (signed in 2020):** It enables the two countries to **share advanced Geospatial (satellite) data** for long range navigation and missile targeting.
- **Defense Trade**
 - **Status:** In 2016, US designated India as a **Major Defense Partner**.
 - **Trade Facilitation:** India's **Strategic Trade Authorization (STA)-1 status (2018)** enables faster, license-free access to a wide range of U.S. military and dual-use technologies.
 - **Major Defense Acquisitions:** India operates US-origin platforms like P-8I, C-17, Apache, MH-60R, M777 howitzers, etc.
- **Joint Military Exercises & interoperability**
 - **Bilateral Exercises:** E.g., Yudh Abhyas (Army), Vajra Prahar (Special Forces), Cope India (Air Force), Tiger Triumph (Tri-Service) etc.
 - **Multilateral Exercises:** E.g., Malabar (Quad Navies), RIMPAC, Red Flag etc.

Significance of India US Defense Ties

- **Strategic balancing in the Indo-Pacific:** Cooperation enhances India's ability to **balance China's assertiveness** through deeper maritime cooperation, information-sharing and combined exercises.
 - **Example: Malabar Exercise** with U.S., Japan and Australia.
- **Technology & Industrial Partnership:** Gives India **access to advanced military technology** and strengthens its **defense industrial base** through co-production and tech transfer (e.g., P-8I Aircraft; GE F-414 Aircraft engine manufacturing).
 - **Support for Make-in-India & Export Ambitions:** The U.S. has emerged among **India's top three defense-export customers** (along with France and Armenia).
- **Logistics & Global Reach:** LEMOA agreements **expand India's operational footprint** by ensuring mutual access to facilities and support networks.
- **Economic & Capability Gains:** Defense trade exceeding **\$20 billion boosts jobs, supply chains, and technology ecosystems** in both nations.
- **Diversification beyond Russia:** U.S. defense ties help India **reduce historical over-dependence on Russian platforms** and broaden technological options.

Key irritants in India-US Defense ties

- **Strategic Autonomy Challenges:** India works with both the **US and Russia**. US pressure to restrict Russian oil and arms purchase creates friction.
 - **Example:** CAATSA concerns during S400 deal with Russia.
- **Limited Technology Access:** The US export control rules block many advanced technologies even after **STA-1 status**.
 - **Example:** Sensitive jet-engine components remain subject to U.S. licensing and regulatory clearances.
- **Different Regional Priorities:** The **US continues security engagement with Pakistan**, which creates discomfort for India.
 - **Example:** High-level US-Pakistan military meetings in 2025 after **Operation Sindoor**.
- **Russian Legacy Systems:** India's large Russian inventory **makes interoperability with U.S. platforms difficult**.
 - **Example:** S-400 and Su-30MKI alongside US platforms like Apache.
- **Unpredictable U.S. Politics:** US domestic politics and Congress can delay or block key defense deals.
 - **Example:** MQ-9B drone deal stalled earlier due to congressional holds.
- **Shifting Great-Power Equations:** Any **US–Russia thaw** or stronger **Russia–China partnership** can affect India's defense choices.
 - **Example:** Russia exploring new defense links with Pakistan.

Conclusion

The renewed 10-year defense framework provides an opportunity to shift India-US ties **from a buyer-seller dynamic to a genuine strategic and industrial partnership**. By deepening co-development, easing technology transfer barriers, and aligning cooperation with India's strategic autonomy, the relationship can contribute to a stable balance of power in the Indo-Pacific while strengthening India's long-term defense self-reliance and global security role.

2.5. INDIA-BHUTAN RELATIONS

Why in the News?

Prime Minister paid a two-day State Visit to Bhutan, at the invitation of His Majesty the King of Bhutan.

More on the News

- The visit coincided with the **Global Peace Prayer Festival** in Thimphu, which featured the exposition of the **Piprahwa Relics of Lord Buddha** from India.
- **Major highlights of the visit:**
 - Inauguration of the **Punatsangchhu-II Hydroelectric Project**
 - India to support **Gyalsung National Service Program** (mandatory national service for youth in Bhutan) with **200 Crore grant** and **1500 Crore concessionary loan**.
 - **MoU for establishment of Railway Links**, encompassing the **Kokrajhar-Gelephu** and **Banarhat-Samtse** rail links.
 - India to allot land in **Varanasi** for construction of a Bhutanese temple/monastery.



Historical Development of Relationship

- **Treaty of Friendship and Cooperation (1949)** established diplomatic relations
 - **Security Clause (Article 2):** Bhutan was to be guided by India in external affairs; India provided arms, technology, and military training to Bhutanese security personnel.

- **1949 Treaty revision (2007):**
 - Removed the clause requiring Bhutan to seek India's guidance in external affairs, ensuring greater equality.
 - Revised Article 2 requires **both nations to cooperate closely** and prevent use of their territory for activities harmful to each other's security.

Significance of India-Bhutan Bilateral Relation

- **For India**
 - **Strategic Buffer and Security:** Bhutan's geographical location acts as a **buffer** between India and China. Bhutan's western border (Doklam) is vital to ensure the security of India's **Siliguri Corridor**.
 - **Energy Security:** Bhutan is a dependable hydropower partner, with India involved in five major HEPs totalling 2986 MW (including Chukha, Kurichhu, Tala, Mangdechhu, and Punatsangchhu-II).
 - **Economic Access:** Bhutan remains India's **top trading partner** and a major investment destination.
 - **Internationalisation of BHIM UPI & RuPay Card:** Bhutan is the first country to adopt UPI standards for its QR deployment. The **RuPay Card** is fully interoperable.
- **For Bhutan:**
 - **Economic Development:** India is Bhutan's **principal development partner**, assisting its socio-economic development since its first Five Year Plan in 1961. For the 12th FYP, India's contribution constituted **73%** of Bhutan's total external grant component.
 - **Revenue Generation:** Electricity exports to India generate about **40% of Bhutan's revenue** and **25% of its Gross Domestic Product (GDP)**.
 - **Tackling Landlocked Nature:** The 2016 Trade, Commerce and Transit Agreement establish a **free trade regime** and provide Bhutan **duty-free transit of goods** to/from third countries.
 - **Financial Stability:** India provides crucial RBI financing facilities, including the **INR 1500 Cr Currency Swap Facility** and multiple **Standby Credit Facilities**.
 - **Education and Capacity Building:** India provides several opportunities, including over 1500 scholarships for students (e.g., Ambassador's Scholarship, Nehru Wangchuck Scholarship) and approximately 325 annual ITEC training slots for professionals.
 - **Space Collaboration:** India and Bhutan jointly developed the **India-Bhutan SAT** (2022).
 - **Defense Cooperation:** The Indian Military Training Team (**IMTRAT**) trains Bhutanese security personnel.

Challenges in India-Bhutan Relations

- **Geopolitical Pressure from China:** China is making concerted efforts to establish formal diplomatic and economic ties and pressures Bhutan to finalize border demarcation. China's road and railway extensions in Tibet (e.g., Lhasa-Shigatse line extension to Yatung) are beginning to erode India's geographic advantage.
- **The Doklam Dilemma:** China's long-standing 'package deal' offer to settle the border dispute by ceding control of the strategically critical Doklam plateau remains a security concern for India.
- **Economic Perceptions:** Some Bhutanese perceive India's dominance as exploitative. Critics point out that India's aid often creates "**jobless growth**" and much of the aid flows back to Indian companies.
- **Hydropower Financing Terms:** There is growing domestic criticism regarding India's shifting finance model for hydropower projects.
 - Historically, the grant-loan component was 60:40, but this has recently reversed, with **loans (often at high interest rates) comprising 60-70%** of financial support, raising questions about India's motives.

Conclusion

The India-Bhutan relationship is a unique partnership founded on **shared spiritual heritage and deep mutual trust**, historically cemented by the 1949 Treaty and its revised 2007 version. Recent visits demonstrate India's commitment to remaining a **steadfast and substantive partner** through massive financial commitments and crucial connectivity projects.

2.6. UN80 INITIATIVE ACTION PLAN

Why in the News?

The United Nations (UN) recently presented the **UN80 Initiative Action Plan**, a coordinated roadmap to carry out **system-wide reforms**.

About UN80 Initiative

- It is an **ambitious, system-wide reform effort**, launched in **March 2025** to celebrate **80th anniversary of UN**.
- Objective:** Make the UN **more agile, integrated, efficient, and impactful**, especially amid **shrinking resources**.
- It has **three main work streams**:
 - Identifying efficiencies and improvements** in the way the UN works.
 - Reviewing the implementation of mandates** received from Member States.
 - Examining possible structural changes and programme realignments** in UN system.
- Timeline assigned:** November 2025 to December 2026
- Key Reform Areas (Work Packages)**
 - Peace & Security:** New models for **peace operations** that delegate tasks more efficiently.
 - Humanitarian Response:** A New Humanitarian Compact for **simpler emergency plans** and integrated **supply chains**.
 - Development System:** Reconfiguration of **UN Country Teams and regional structures for cost-effectiveness**.
 - Institutional Mergers:** Assessing possible mergers of **entities with overlapping work for greater coherence and savings**.
 - E.g., UNDP (United Nations Development Programme) and UNOPS (United Nations Office for Project Services).
 - Operational Enablers:** Common data, shared technology platforms, **unified supply chains, and simplified training systems**.



**Read our Weekly
Focus coverage
on UN Reforms**

Need for UN reforms

- Structural challenges**
 - Outdated representation:** UNSC reflects post-WWII geopolitics, not 21st-century realities, with no permanent seats for countries such as India (one of the largest contributors to UN peacekeeping).
 - Loss of Credibility and Global Trust:** Prolonged conflict deadlocks, selective enforcement of human rights, and perceived unequal treatment of nations have eroded trust in UN's authority.
 - E.g., UNSC deadlock due to veto power in case of Russia-Ukraine war, Israel-Palestine conflict etc.
- Governance challenge**
 - New global challenges:** UN lack of specialized bodies and adequate resources to respond effectively to new issues like cyber security, AI ethics, etc.
 - Mandate overload:** 40,000+ mandates **overwhelm the system, creating duplication and inefficient resource use**.
- Institutional challenges**
 - Resource Constraints:** System resources are estimated to fall 25% (from \$66 to \$50 billion) in 2026, compared to 2024.
 - About 80% of **UN system funds** come from **voluntary contributions**.
 - Outdated systems:** **Poor digital tracking and manual processes** slow down mandate management.
 - Institutional fragmentation:** Multiple entities operate in the same thematic spaces, increasing transaction costs for countries and partners
 - E.g., UN-Women and UNFPA (the United Nations Population Fund) do overlapping work.
 - Ambition-resource mismatch:** Member States assign **more tasks than the UN has capacity or funds to execute**.



United Nations (UN)



Genesis: 1945, Charter of the United Nations was signed in San Francisco.



Membership: 193 countries. (India is a founding member).

▶ States are admitted to membership by a decision of the General Assembly upon the recommendation of the Security Council.



Charter Principles: International peace and security, Sovereign equality, cooperation, human rights.



Main Organs:

- ▶ **General Assembly (UNGA):** All UN Member States are its members.
 - ▷ Has Equal vote; elects non-permanent UNSC members.
- ▶ **Security Council (UNSC):** 15 members (P5 with veto + 10 elected); maintains peace & security.
- ▶ **Economic & Social Council (ECOSOC):** 54 members; coordinates economic, social, environmental work.
- ▶ **International Court of Justice (ICJ):** Judicial organ; settles disputes between states (Peace Palace in The Hague).
- ▶ **Trusteeship Council:** Inactive since 1994.
- ▶ **Secretariat:** Headed by UN Secretary-General; administrative & coordination functions.



Specialized Agencies (Autonomous, linked via agreements with UN) (15 Organizations)

- ▶ **FAO** – Rome, **ICAO** – Montreal, **IFAD** – Rome, **ILO** – Geneva, **IMF** – Washington, DC, **IMO** – London, **ITU** – Geneva, **UNESCO** – Paris, **UNIDO** – Vienna, **UN Tourism** – Madrid, **UPU** – Bern, **WHO** – Geneva, **WIPO** – Geneva, **WMO** – Geneva, **World Bank** – Washington, DC.



Funds and Programmes: UNICEF, UNDP, UNEP, UN-HABITAT etc.

Conclusion

Reforms envisioned under UN80 will strengthen the UN's ability to respond to emerging global crises by modernizing multilateral governance, improving efficiency, and reducing costs. They also reinforce the UN Development System, enabling more effective delivery of the Sustainable Development Goals.

2.7. NEWS IN SHORTS

2.7.1. EAST ASIA SUMMIT (EAS)

20th East Asia Summit adopted Kuala Lumpur Declaration on Peace and Stability.

- The declaration aims to implement joint projects and activities under the EAS Plan of Action (2024–2028) aligned with ASEAN 2045: Our Shared Future vision.

About East Asia Summit

- **Overview:** A leaders-led forum for dialogue and cooperation on strategic, political, and economic issues to promote peace, stability, and prosperity in East Asia.
- **Genesis:** Established in 2005, with the first Summit held in Kuala Lumpur, Malaysia.
- **Nature:** An annual meeting of Heads of State or Government of participating countries.
- **Members:** ASEAN Member States, Australia, China, India, Japan, New Zealand, The Republic of Korea, United States and Russia.

2.7.2. ASIA-PACIFIC ECONOMIC COOPERATION (APEC)

2025 Asia-Pacific Economic Cooperation (APEC) summit was recently held in the South Korean city of Gyeongju.

About APEC (Secretariat: Singapore)

- **Founded:** In 1989
- **Members: 21 economies** (Australia, Canada, Chile, China, Indonesia, Japan, South Korea, Malaysia, Mexico, the United States etc.)
 - **India:** Not a member (observer status).
- **Objective:** To build a **dynamic and harmonious Asia-Pacific community** by championing **free and open trade and investment**, promoting economic integration, cooperation, etc.

2.7.3. AUSTRALIA CANADA INDIA TECHNOLOGY AND INNOVATION (ACITI)

India, Australia, and Canada announced a new trilateral framework **ACITI**, on the **sidelines of the G20 Summit in Johannesburg**.

About Australia Canada India Technology and Innovation (ACITI) Partnership

- **Purpose:** Enhance cooperation in **critical and emerging technologies and innovation domains**.
- **Key Focus Areas:** Including clean energy, diversified and resilient supply chains, particularly in critical minerals.
 - Explore ways to **accelerate AI development and mass adoption** to **improve the lives** of their citizens.

2.7.4. WORLD ARTIFICIAL INTELLIGENCE COOPERATION ORGANIZATION (WAICO)

Recently at **APEC (Asia Pacific Economic Cooperation)** meet in South Korea, China pushed for a global body, **WAICO**, to govern Artificial Intelligence (AI) norms.

About WAICO

- **Aim:** Shaping global standards for world cooperation.
 - It incorporates principles from **China's 2023 Global AI Governance Initiative**, emphasizing human-centric design, data sovereignty and algorithmic transparency.
- Announced during **2025 World Artificial Intelligence Conference in Shanghai**.
- **Key Purpose:** Reimagining the international architecture of AI governance, position China as an alternative to USA, exert China's soft Power, etc.

2.7.5. ABRAHAM ACCORDS

Recently USA President confirmed that **Kazakhstan** would be a part of Abraham Accords.

About Abraham Accords

- **Purpose:** Defuse tensions in the **Middle East** by normalizing relations between **Israel** and several so-called **moderate Arab states**, to ensure formal diplomatic, trade and security ties between these states with Israel.
 - Named after the **biblical Abraham**, considered by both Jews and Arabs as their common ancestor and a symbol of brotherhood.
- **Genesis:** Initially signed in **2020**, between **Israel** with the **UAE, Bahrain, and Morocco**.

2.7.6. WATER CONVENTION

Bangladesh became the first country in South Asia to join the U.N.'s Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention).

About Water Convention

- **Adopted in Helsinki in 1992** and **entered into force** in 1996.
- **Legally binding convention** for sustainable management of shared water resources.
- Requires parties to **prevent, control, and reduce** transboundary impacts.

- Ensures reasonable, equitable, and sustainable use of shared waters.
- Mandates cooperation through agreements and joint bodies among riparian states.

2.7.7. ANEGADA PASSAGE

Fighter jets and guided-missile destroyers transited the **Anegada Passage** as a part of USA's **Operation Southern Spear** against Narco Terrorism in the Caribbean.

About Anegada Passage

- **Location:** Channel in the **West Indies**, connecting the **Atlantic Ocean** with the **Caribbean Sea**.
- It **separates the British Virgin Islands (west)** from the **Leeward Islands (southeast)**.
- It is one of the two passages through which subsurface water enters the **Caribbean** (other being the Windward Passage).

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3. ECONOMY

3.1. EXPORT PROMOTION MISSION

Why in the News?

The Union Cabinet approved the **Export Promotion Mission (EPM)**.

More on the News

- This Mission was announced in the Union Budget 2025–26.
- Also, the Cabinet approved the introduction of the **Credit Guarantee Scheme for Exporters (CGSE)**.

About Export Promotion Mission (EPM)

- Vision:** Provides a **comprehensive, flexible, and digitally driven framework** for export promotion.
- Financial Outlay:** Rs. 25,060 crores
- Timeline:** Six years (FY 2025–26 to FY 2030–31)
- Targeted Sectors:** Priority support will be extended to sectors impacted by **recent global tariff escalations**, such as textiles, leather, gems & jewellery, engineering goods, and marine products.
- Mission Architecture:** It will operate through two distinct but integrated sub-schemes:
 - Niryat Protsahan (Financial Support):**
 - Designed to improve access to affordable trade finance for diversification into new markets.
 - Niryat Disha (Non-Financial Support):**
 - Designed to enhance the **market readiness** and **competitiveness** of exporters.
 - Ways under it includes Export quality and compliance support, assistance for international branding, export warehousing and logistics, etc.
- Implementing Agency:** Directorate General of Foreign Trade

Need of Export Promotion Mission (EPM)

- Consolidation of Existing Schemes:** It integrates and modernizes key existing schemes e.g. **Interest Equalisation Scheme** and **Market Access Initiative**.
- Logistics Challenges:** Inadequate Infrastructure and Transit Delays, Sharp Rise in Freight Costs & Shipping Disruptions (E.g., disturbances in the Red Sea route), etc.
- Market Access Challenges:** Limited Visibility and Buyer Connections, Identifying new markets, etc.
- Regulatory Challenges:** This includes regular documents such as a certificate of origin, quality inspection certificate, and packing list, among others.
- International constraints**
 - Competition:** E.g. Indian products are less competitive in comparison with Chinese products due to high production costs, low innovation, etc.
 - Trade barriers and tariffs (increasing global protectionist tendencies):** E.g., recently, the U.S. imposed a steep 50% tariff on Indian goods, significantly reducing India's exports to the U.S., which is India's largest export destination.
 - Other constraints:** Issue of quality standards, Supply chain disruption, etc.

Key Objective of Export Promotion Mission

-  Facilitate access to affordable trade finance for **MSMEs**.
-  Enhance **export readiness** through **compliance** and **certification** support.
-  Improve **market access** and **visibility** for Indian products.
-  Boost exports from **non-traditional districts** and **sectors**.



Data Bank

Overview of India's Export Sector

- **21%** contribution in overall **GDP (FY 2024–25)**.
- **Over 45 million people** are directly and indirectly employed in **Export-oriented industries**.
- **~45% of India's total exports** are contributed by the MSMEs.
- **India's share in global exports** of goods and services is at around **2.5%**.

Other Key Government Initiatives to Strengthen India's Export Landscape

- **Foreign Trade & Export Promotion**
 - **New Foreign Trade Policy (FTP) 2023** (Focuses on export incentives, ease of doing business, and emerging sectors like e-commerce and high-tech products).
 - **Rebate of State and Central Levies and Taxes (RoSCTL) Scheme** (Provide tax and duty reimbursements to exporters, benefiting sectors like pharmaceuticals, chemicals, and steel).
- **Ease of Doing Business & Digital Initiatives**
 - **Compliance & Decriminalization Reforms** (Over 42,000 compliances reduced and 3,800 provisions decriminalized to simplify business processes).
 - **Other: National Single Window System (NSWS)** to streamline approvals, Trade Connect e-Platform, etc.
- **Infrastructure & Logistics:** E.g. National Logistics Policy (NLP) & PM GatiShakti.
- **E-Commerce & Digital Trade:** E.g. E-Commerce Export Hub (ECEH), **ICEGATE Digital Platform** (Modernizes customs processes with e-filing, real-time tracking, and seamless documentation).
- **Agriculture & Organic Exports:** E.g. National Programme for Organic Production (NPOP).

What more can be done to Promote Exports?

- **Finalising Free Trade Agreements (FTA):** Several upcoming free trade agreements can also be negotiated better to improve market access (e.g. Europe, central Asia etc.) and favourable trading terms.
- **Harness demand for high-value technical services:** For instance, specialised technical expertise in the fields of R&D, manufacturing services, supply chain management and maintenance and repair.
- **Strengthening MSME exports:** Through increased MSME participation in trade shows and exhibitions. MSMEs should also be trained on important aspects of export procedures, documentation, and standards.
- **Strengthen Innovation & Value Addition:** E.g., Agricultural and Processed Food Products Export Development Authority (APEDA) launched **BHARATI** (Bharat's Hub for Agritech, Resilience, Advancement and Incubation for Export Enablement) to promote innovation and create new export opportunities for young entrepreneurs.
- **Unlock E-Commerce Exports:** E.g., create separate customs supervision codes for e-commerce exports.
- **Create National Trade Network (NTN):** Proposed unified digital platform to centralize all export-import processes (customs, DGFT, banks, ports) into one system.
 - Implementing NTN would prove beneficial in minimizing transaction costs and addressing the informational asymmetry.

Credit Guarantee Scheme for Exporters (CGSE)

- **Objective:** To enhance liquidity, support market diversification, boost employment, and improve global competitiveness.
- **Total Credit Support:** Up to additional ₹20,000 crore collateral-free with 100% guarantee coverage by **National Credit Guarantee Trustee Company Limited (NCGTC)**.
- **Beneficiaries:** Both MSME and non-MSME exporters.
- **Implementing Agency:** Department of Financial Services (DFS) through NCGTC
- **Oversight Body:** A management Committee formed under the chairmanship of Secretary, DFS.

Conclusion

EPM provides a unified and digitally driven framework to overcome fragmented export schemes and strengthen India's global competitiveness. By addressing key challenges like logistics gaps, quality standards, and market access, it aims to drive sustained and diversified export growth.

3.2. MANUFACTURING IN INDIA

Why in the news?

Recently, **NITI Aayog's Frontier Technology Hub**, in collaboration with the Confederation of Indian Industry (CII) and Deloitte, unveiled a 10-year roadmap titled "**Reimagining Manufacturing: India's Roadmap to Global Leadership in Advanced Manufacturing**".

Key Highlights of the Roadmap

- **Core Frontier Technology Enablers: Artificial Intelligence & Machine Learning, Advanced Materials, Digital Twins** (virtual, data-driven replicas of physical systems), and **Robotics**.
- **Key features of the roadmap**
 - **Sector-Focused Approach:** It identifies **13 priority manufacturing sectors** where frontier technologies can generate the greatest impact, ranging from electronics, semiconductors, and pharmaceuticals to green energy.
 - **Frontier Technology Integration:**
 - > **Artificial Intelligence & Machine Learning** for predictive maintenance, quality control, and process optimization.
 - > **Digital Twins** to simulate real-time factory environments.
 - > **Advanced Materials** to enhance product performance and sustainability.
 - > **Robotics and Automation** to improve precision, productivity, and safety.

Significance of Manufacturing

- **Balancing Economic Structure:** Manufacturing shifts labour from low-productivity agriculture to higher-productivity non-farm employment, which the service sector could not achieve desirable scale.
- **Employment:** The sector has the highest backward and forward linkages compared to any other sector, i.e., it generates more jobs indirectly for every direct job created.
- **Strategic autonomy:** A strong manufacturing base enhances self-reliance in critical sectors such as defence, semiconductors, pharmaceuticals, and energy equipment.
 - COVID-19 exposed dependence on imports for APIs, medical equipment, and semiconductors.

Innovation spillovers:

Manufacturing fosters R&D spillovers, supplier development, skilling, and ecosystem-wide productivity gains.

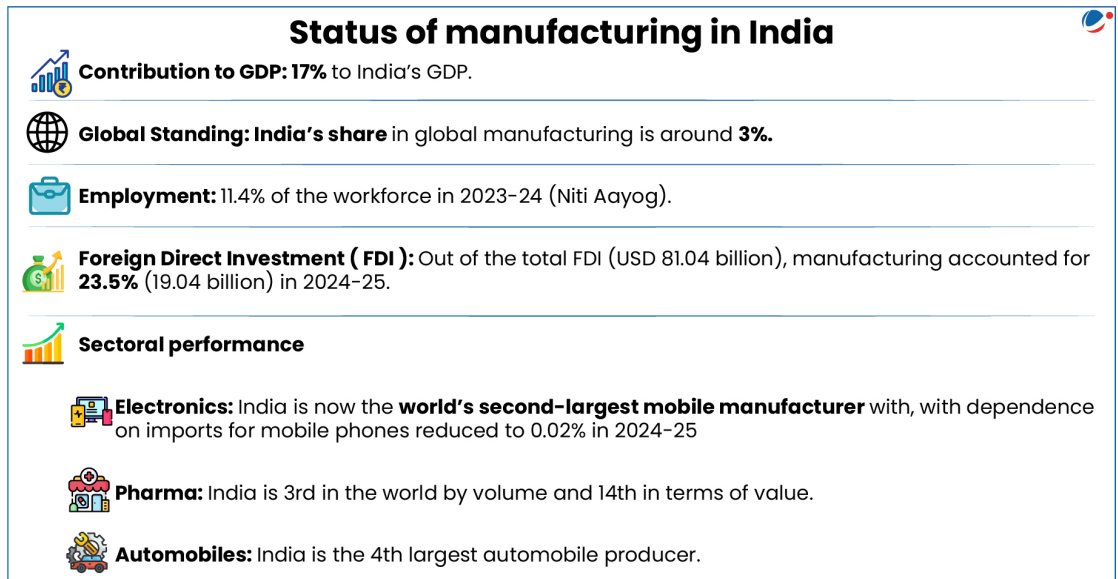
Regional Balance:

Manufacturing can decentralise growth by creating jobs in Tier-2, Tier-3 cities and rural hinterlands, reducing distress migration to metros.

- E.g., **Micro & Small Enterprises Cluster Development Programme**, a central sector scheme focusing on rural areas, the northeast, aspirational district for balanced regional development.

Challenges Faced by Manufacturing in India

- **Funding Gaps:** By the government and industry for frontier technologies to support pilot-to-scale transitions.



- Inadequate adoption of these technologies could result in a reduction of **India's share of global manufacturing to 2.5% by 2035 (NITI Aayog)**.
- **Low Investment in R&D:** E.g., R&D spending in India accounted for **only 0.64% of GDP** in 2023, far below China, which spent around 2.5%.
- **Disincentives to Scale:** Stringent regulations incentivise **MSMEs to remain small** to avoid regulations and taxes, reducing employability and scalability.
 - Approx 35.5% of manufacturing output is accounted by MSMEs.
- **Manufacturing vs Services Imbalance:** India experienced services-led growth; bypassing manufacturing-led structural transformation seen in East Asia, e.g. Services account for approximately 55% of GDP.
 - This has resulted in **unemployment** as Services (especially IT and finance) are high-productivity but low-employment sectors.
- **Low labour productivity:** According to the ILO, GDP per working hour in India was \$8, placing it at the 133rd position.
- **Unequal distribution:** The top 5 states account for nearly 54% of manufacturing GVA.

Initiatives by Government for boosting Manufacturing

- **'Make in India' Initiative (2014):** It targets the share of **the manufacturing sector to 25% of GDP by 2025**, create 100 mn jobs, increase growth rate of Indian industry to 12-14%/year etc.
- **Production Linked Incentive scheme (2020):** For 14 key sectors to strengthen manufacturing sector by offering incentives to eligible companies **based on incremental sales**.
- **National Logistics Policy (2022):** To reduce the logistics cost to an average of 8% of GDP by 2030. (India's logistics cost has recently dropped to **7.97%** of GDP.)
- **Modified Programme for Semiconductors and Display Manufacturing Ecosystem (under MeitY):** To attract investments in the field of semiconductors and display manufacturing by providing 50% of project cost as incentive.
- **PM GatiShakti:** To achieve Aatmanirbhar Bharat and a \$5 trillion economy by 2025 through multimodal and last-mile connectivity infrastructure.
- **National Industrial Corridor Programme:** To develop competitive greenfield industrial regions and nodes across all approved industrial corridors with 32 projects.



Read our previous coverage on Make in India

Conclusion

To unlock the full potential of the manufacturing sector, India may pursue coordinated reforms in **regulations, land, tariffs, infrastructure, and logistics to reduce costs and improve ease of doing business**. Simultaneously, greater investment in R&D, adoption of frontier technologies, and industry-aligned skill development are essential.

3.3. WORLD INEQUALITY REPORT 2026

Why in News?

Recently, World Inequality Lab released World Inequality Report 2026.

Key Highlights of the Report

Global

- **Global Wealth Share:**
 - Global **Top 10%** of population **owns ~75% of total wealth** &
 - **Bottom 50%** holds a mere **2%**.
- **Income Divide:**
 - **Global top 10%** of income-earners earns more than remaining 90% combined &
 - **Poorest half** of the global population receives **<10%** of total global earnings.

- **Climate Inequality (The Carbon Divide)**
 - **Stark Disparity:** Poorest half of global population accounts for a mere **3% of private capital-related carbon emissions**, while the wealthiest 10% are responsible for **approximately 77% of these emissions**.
 - **Unequal Distribution of Risk:** A clear climate injustice exists, where those who emit the least (often in low-income countries) are the most vulnerable and exposed to climate shocks.
- **Systemic Global Financial Inequality**
 - **The "Exorbitant Privilege":** The global financial system reinforces inequality by allowing rich economies to borrow cheaply and receive higher returns on foreign investments.
 - **Wealth Transfer:** This system results in a net income transfer of **approximately 1% of global GDP flowing annually from poorer to richer nations**, an amount nearly three times the total global development aid.

Measurement of Inequality

Gini Index

- Gini index (ranging from 0 to 100) measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution.
- It is commonly defined through **Lorenz curve**.
- Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.

Kuznets Ratio

- It measures the share of income going to the top quantiles divided by the income going to the bottom quantiles.
- The greater the ratio, the higher inequality.
- One example of a Kuznets ratio is Palma Ratio.
 - **Palma Ratio** is the share of income going to the top 10% divided by the income share of the bottom 40%.

India

- **High Income Inequality:**
 - **Top 10%** of earners capture **58% of the national income &**
 - **Bottom 50%** receives only **15%** of the national income.
- **Extreme Wealth Inequality:**
 - **Richest 10%** hold **~65% of the total national wealth &**
 - **Top 1% alone** holds approximately **40% of the total national wealth**.

Consequences of High Inequality

- **Economic inefficiency and stagnation:** Inequality reduces overall economic performance as inadequate healthcare, nutrition & education among large population limits productivity and leads to the wastage of talent. **Eg: Anaemia impacts workforce participation, reducing household incomes and impeding economic growth. (NFHS-5)**
- **Intergenerational poverty traps:** Unequal outcomes reinforce unequal opportunities, with parental income and education strongly predicting children's life prospects, thereby **reducing social mobility**.
- **Undermined climate action:** Excessive consumption and carbon emissions by the very rich drive climate change, which harms the global economy and disproportionately affects the poor. **Eg. Per Capita Carbon emissions are low in developing countries.**
- **Increased vulnerability and debt:** Low-income and informal sector households face high risks from economic shocks and carry increased debts, threatening broader economic stability. **Eg: Impact of COVID-19 lockdown on migrant workers and street vendors.**
- **Erosion of trust and democracy:** Economic inequalities translate into political inequalities, creating a cycle wherein rules are shaped to favour the rich, deepening economic divides and social polarization. **Eg: Oil wealth concentration in the hands of elites in Nigeria.**

Policy Imperatives and Steps to be Taken



Explore Universal Basic Income (UBI) as a solution in India

- Grounded in principles of Universality and Unconditionality, it seeks to recognize every citizen as a right-holder to a minimum basic income.
- UBI is designed to directly target the inequality by placing purchasing power in the hands of the poorest.



Fiscal and Wealth Redistribution

- **Progressive Taxation:** To mobilize resources for public goods reduces inequality.
- **Global Minimum Wealth Tax:** Coordinating a global minimum effective tax standard for ultra-high-net-worth individuals.



Gender Parity Policies

- **Valuing Unpaid Work:** Implementing policies to recognize unpaid care work by offering affordable childcare, gender-neutral parental leave.
- **Labour Market Fairness:** Ensuring strict enforcement of equal pay laws and strengthening protections against workplace discrimination.



Climate Policy and Ownership Reforms

- **Equitable Climate Tax:** Such as introduction of a progressive carbon tax on wealth calculated based on the carbon content of owned assets.
- **Targeted Regulations:** Such as incorporation of taxes and regulations on high-carbon investments within climate policy frameworks.

Conclusion

According to the World Bank, India ranks fourth globally in income equality with a Gini Index of 25.5. India's extreme poverty also fell to 2.3% in 2022–23, with 171 million people moving out of extreme poverty between 2011–23. It has been supported by schemes such as PM Jan Dhan Yojana, Direct Benefit Transfer, Ayushman Bharat and **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**. This reflects progress in the right direction, though stronger measures in employment generation, education, skilling and social protection are needed to sustain and deepen equity gains.

3.4. IMPLEMENTATION OF LABOUR CODES

Why in the news?

Recently **Ministry of Labour and Employment** brought into force the **4 Labour Codes** almost 5 years after being cleared in Parliament.

More on the News

- These codes are the **Code on Wages, Industrial Relations Code, Code on Social Security, and Occupational Safety, Health and Working Conditions Code**.
- These codes consolidate **29 existing central labour laws**.

India's Labour Law Framework

- **Constitutional Provisions**
 - **Concurrent Jurisdiction:** Labour is in the **Concurrent List** under the 7th schedule, allowing both the centre and the state to legislate.
 - **Preamble:** Emphasise social justice, dignity of the individual, equality of status, which become guiding principles for labour welfare and labour legislations
 - **Directive Principles**
 - > **Article 39:** The State shall secure equal pay for equal work, irrespective of gender.
 - > **Article 41:** Provide for the right to work, education and public assistance in case of unemployment, old age, sickness and disablement.
 - > **Article 42:** Secure fair and humane conditions of work and maternity relief

- > **Article 43:** The State to secure for all workers a living wage, conditions of work, ensuring the decent standard of life
- > **Article 43A:** Rights of workers to participate in the management of industries.
- **Fundamental Rights**
 - > **Article 16:** Equality of opportunity in matters of public employment,
 - > **Article 19(1) (C):** Protects the rights to form associations or unions.
 - > **Article 23:** Prohibits human trafficking and forced labour
 - > **Article 24:** Prohibits the employment of children below 14 in hazardous industries
- **Labour Force:** Overall Labour Force Participation Rate (LFPR) for 2024 was **59.6%**, with 90% of workers engaged in the unorganized sector.
 - In 2023-24, 64.33 crore people were employed in India, with 41.7% female LFPR.
- **Institutional mechanism**
 - **Ministry of Labour and Employment** to protect and safeguard the interests of workers
 - **Labour Bureau:** Publishes information on industrial disputes, closures, retrenchments, lay-offs, wages, earnings, working and living conditions and evaluates the working of various labour Acts
 - **Chief Labour Commission:** Prevents and settles industrial disputes, enforces labour laws and promotes the welfare of workers under the Central Government.
 - **Employees' State Insurance (ESI) Scheme:** Under the Employees' State Insurance Act of 1948.
 - > It insures employees against sickness, maternity, disablement and death due to employment injury and provides medical care to insured persons
 - > It covers employees in non-seasonal units and earning up to 21000 Rs/month.
 - **Employees' Provident Fund Organisation (EPFO):** Under Employee's provident fund act, 1952.
 - > It manages the **Employees Provident Funds Scheme 1952**, a retirement saving scheme in which both the employee and employer contribute a fixed percentage of the employee's salary every month.

Need for Labour reform

- **Simplifying compliance:** Multiplicity of laws leads to difficulty in compliance.
 - **The 2nd National Commission on Labour** highlighted the multiplicity of labour laws and advocated for consolidation into 4 or 5 comprehensive labour Codes.
- **Modernisation of Archaic Laws:** Many previous laws originated in colonial or early post-independence and were outdated for contemporary economic and technological realities.
 - **Eg, Payment of Wages Act, 1936**, which governed how and when wages were paid, applied only to employees earning up to a certain wage limit (24000 Rs/month).
- **Universal Coverage Gap:** Approximately 90% of workers work in unorganized sector and traditionally lacked access to social security benefits and comprehensive labour protections.
- **Promoting Economic Objectives:** The new codes aim to boost investment, growth, and jobs by simplifying compliance and improving Ease of Doing Business.
- **Addressing New Work forms:** The reforms were crucial to formally recognise and provide social security to categories like **gig and platform workers**, and **inter-state migrant workers**.
 - According to NITI Aayog in 2020-21, 7.7 million workers were engaged in the gig economy, constituting 1.5% of the total workforce in India.

Key terms

- **Gig and Platform Workers and aggregator**
 - **Gig worker:** A person who works outside a traditional employer-employee relationship.
 - **Platform workers** are those whose work is based on online apps or digital platforms. Eg. Ola, Uber, Zomato, Swiggy, Urban Company etc.
 - **Aggregator** - digital intermediary connecting buyers and sellers of goods and services
- **Fixed-Term Employees (FTE):** Refers to workers employed for a fixed duration based on a contract signed directly between the worker and the employer.

- Employment lapses upon completion of that term, unless contract is renewed. No notice is required for retrenchment upon the completion of the term.
- **Layoff, Retrenchment and closure**
 - **Lay-off** occurs when an employer temporarily cannot provide work to a worker for reasons such as a shortage raw materials, natural calamity, etc.
 - **Retrenchment** refers to the termination of the service of a worker for any reason other than disciplinary action.
 - **Closure** refers to the permanent shutting down of an establishment or undertaking
- **Contract Labour** is when a worker is engaged in an establishment through a contractor or intermediary rather than being directly on the payroll of the principal employer.
- **Floor wage:** A central government benchmark set to ensure a minimum subsistence level across the country, below which state minimum wages cannot fall.

Details and Analysis of the four codes have been discussed in the subsequent articles.

3.4.1. THE CODE ON WAGES, 2019

Consolidates four laws relating to wages and remuneration.

- **Aim:** To strengthen workers' rights while promoting simplicity and uniformity in wage-related compliance for employers.
- **Key Provisions**
 - **Universal Minimum Wages:** The Code establishes a statutory right to minimum wages for all employees across both organized and unorganized sectors.
 - > **Criteria for Wage Fixation:** skill levels, geographic areas, and job conditions such as temperature, humidity, or hazardous environments.
 - **Introduction of Floor Wage:** A statutory floor wage shall be set by the Government based on minimum living standards, with scope for regional variation.
 - > No state can fix minimum wages below this level, ensuring uniformity and adequacy nationwide.
 - **Compensation:** Mandates timely payment and provides for overtime compensation at least 2x the normal rate.
 - **Simplification:** Standardises key definition e.g. 'wages', 'employee', across the entire legislative framework, reducing compliance confusion.

Merits/significance	Concerns/Demerits
<ul style="list-style-type: none"> ● Reduced Regional Disparity: As it allows Central govt to fix National Floor Wage based on minimum living standards. ● Ensures Gender Equality: Equal wages and working conditions across genders (including transgenders). ● Establishes Trust based ecosystem: By Decriminalization of Offences i.e. it replaces imprisonment for some 1st time offences with monetary fines. 	<ul style="list-style-type: none"> ● Implementation: The success of the provisions hinges on effective implementation, especially in the informal and rural sectors. ● Federal Rights: May be impacted as right to decide minimum wages in the States will be impacted due to national floor wage.

3.4.2. THE INDUSTRIAL RELATIONS CODE, 2020

Incorporates three laws relating to dispute resolution, industrial relations, etc.

- **Aim:** To simplify laws related to trade unions, conditions of employment in industrial establishment or undertaking, investigation and settlement of industrial disputes.
- **Key provisions**
 - **Trade Unions:** Now requires **51% membership** to be recognised as the sole negotiating union, streamlining the negotiation process.
 - > In case of more than 1 trade union, negotiating council will be formed with representatives of unions having 20 % of workers as members.
 - **Fixed-Term Employment (FTE):** Explicitly institutionalises FTE, intended to reduce excessive contractualisation and offers cost efficiency to employers.

- **Expanded Worker Definition:** Covers sales promotion staff, journalists, and supervisory employees earning up to ₹18,000/month.
- **Higher Threshold for Lay-off/Retrenchment/Closure:** Approval limit raised from 100 to 300 workers; States may enhance the limit further.
- **Broader Definition of Industry:** Includes all systematic employer-employee activities, regardless of profit or capital.

Merits	Demerits
<ul style="list-style-type: none"> • Boost skills: eg. Re-skilling Fund, in which employers pays 15 days' wages for every worker retrenched for retraining them. • Simplified Dispute Resolution and Grievance Handling- The Codes provide for establishing Internal Grievance Redressal Committees (IGRCs) for establishments employing 20 or more workers 	<ul style="list-style-type: none"> • A higher threshold for removal: It can lead to a hire and fire policy. • Permanent temporariness: FTEs can replace permanent employment with short-term contracts. • Weakening collective bargaining strength of workers: 51% threshold risks marginalising smaller unions and centralizing bargaining power.

3.4.3. THE CODE ON SOCIAL SECURITY, 2020

Incorporates nine existing social security laws.

- **Aim:** To extend social security to all workers, including unorganized, gig, and platform workers.
- **Key Provisions**
 - **Gig and Platform Workers and aggregator:** Legally defined for the 1st time.
 - > Aggregators to contribute **1-2% of annual turnover** (max 5% of payments to workers) to the **social security fund**.
 - **Expanded ESIC (Employees' State Insurance) Coverage:** ESIC now applies pan-India, eliminating the criteria of "notified areas."
 - > Establishments with fewer than 10 employees may voluntarily opt in with mutual consent of employers and employees.
 - > Coverage would be mandated for **hazardous occupation and extended to plantation workers**.
 - **Uniform Definition of Wages:** "Wages" now include basic pay, dearness allowance, and retaining allowance.
 - > 50% of the total remuneration (or such percentage as may be notified) shall be added back to compute wages, ensuring consistency in calculating gratuity, pension, and social security benefits.
 - **Gratuity for Fixed-Term Employees:** Fixed-term employees become eligible for gratuity after one year of continuous service (earlier five years).

Merits	Demerits
<ul style="list-style-type: none"> • National Database for Unorganized Workers: Provides for creating a national digital platform (NDUW) with registration and skill details of unorganized workers. • Expanded social security: As both organised and unorganised workers are covered 	<ul style="list-style-type: none"> • Lack of clarity on funding mechanisms of social security fund • Lack of Universal social security: The coverage of schemes remains dependent on establishment size thresholds. <ul style="list-style-type: none"> ○ For ESIC- Establishments with fewer than 10 employees may voluntarily opt in

3.4.4. THE OCCUPATIONAL SAFETY, HEALTH, AND WORKING CONDITIONS CODE, 2020 (OSHC)

Incorporates 13 central laws, focusing on improving workplace safety, health, and working conditions.

- **Aim:** To balance the twin objectives of **safeguarding worker rights and safe working conditions, and creating a business-friendly regulatory environment**.

• Key Provisions

- **Unified Registration:** A uniform threshold of 10 employees is set for electronic registration.
- **Extension to Hazardous Work:** The Government can extend the Code's provisions to any establishment, even with one employee, engaged in hazardous or life-threatening occupations.
- **Wider Definition of Migrant Workers:** The definition of inter-state migrant workers (ISMW) now covers workers employed directly, through contractors, or migrate on their own.
- **Women's Employment:** Women can work in all types of establishments and during night hours (before 6AM, beyond 7PM) with consent and safety measures.
- **National Occupational Safety & Health Advisory Board:** A single tripartite advisory board replaces six earlier boards to set national safety and health standards across sectors, ensuring uniformity and quality.
- **Institutional oversight**
 - > **Safety committee** to be constituted by factories with 500+ workers, construction units (250+ workers), and mines (100+) workers with employer and worker representatives.
 - > **Welfare officer** to be appointed in units where 250 or more workers are ordinarily employed.
 - > **National occupational safety and health advisory board (tripartite body)** to be constituted by central government to set national safety and health standards
- **Contract Labour:** Norms apply to contractors with 50+ workers (earlier 20), and employers are allowed to engage contract labour even in defined core activities such as sanitation, subject to conditions.

Merits	Demerits
<ul style="list-style-type: none"> • Strengthened workers right: E.g., working hours capped at 8 hrs in a day & 48 hrs a week. • Transparency and accountability: Mandatory appointment letters to all workers and though online mechanisms • Boost Female labour force participation: Permits women to work in all types of units, including night shifts subject to their consent and mandatory safety protocols. 	<ul style="list-style-type: none"> • Narrowed Coverage: Threshold for factory licence raised (10 to 20 workers with power, and to 40 in without power) can exclude many small units from safety compliance requirements. • Oversight Gaps: The shift towards self-certification by employers, risks underreporting of violations and inadequate enforcement of safety standards.

Conclusion

The new Labour Codes represent a major reform in India's labour system by balancing worker welfare with business efficiency. They simplify compliance, improve safety, and ensure fair wages, while promoting a more transparent and growth-oriented economy.

3.5. PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS (PPV&FR) ACT, 2001

Why in the News?

Silver Jubilee of the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001 was celebrated.

More about the news

- The PPV&FR Act was enacted to fulfil the **enforcement of the TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement** of the WTO that India ratified.
 - The TRIPS Agreement offer member countries the choice to protect plant varieties through patents, an effective **sui generis system**, or a combination of both patent and sui generis systems.
 - > A sui generis system refers to a **customised, unique legal framework** designed to protect something that doesn't fit neatly into existing categories, especially in intellectual property (IP) law.
 - India opted **not to grant patents for plants**, instead choosing to safeguard plant varieties through the **sui generis system**.

About PPV&FR Act

- **Objective:** To establish an effective system for the protection of plant varieties, the rights of farmers and plant breeders, and to encourage the **development of new plant varieties**.
- **About:** It is in conformity with the **International Union for the Protection of New Varieties of Plants (UPOV), 1978** and also protects the interests of public sector breeding institutions and the farmers.
- **Variety Registration:** A variety is eligible for registration if it essentially fulfils the criteria of **Distinctiveness, Uniformity and Stability (DUS)**.
- **Rights under the Act:**
 - **Breeders' Rights:** Breeders will have exclusive rights to produce, sell, market, distribute, import or export the protected variety.
 - **Researchers' Rights:** Researchers can use any of the registered varieties for conducting experiments or research.
 - > This includes the **use of a variety as an initial source of variety for the purpose of developing another variety** but repeated use needs prior permission of the registered breeder.
 - **Farmers' Rights:** Entitled for registration of a new variety and protection in like manner as a breeder of variety.
 - > Farmers' variety can also be registered as an extant variety.
 - > Farmers are eligible for recognition and rewards for the conservation of **Plant Genetic Resources of land races and wild relatives of economic plants**.
 - > Farmers shall **not be entitled to sell branded seed** of a variety protected under this act.
- **Benefit Sharing:** If any organisation or individual uses a farmer variety for production, development, or breeding, the farmer must receive a share of the profits.
- **Categories of Varieties:** Categorized into three major groups:
 - **Extant Varieties:** Varieties notified under section 5 of the seed Act 1966, and also the varieties in the public domain, are called extant varieties.
 - **Farmers' Varieties/ Community Varieties:** These varieties are traditionally cultivated and evolved by the farmers in their fields. The wild relatives, land races which the farmer possess also fall in this category.
 - **Essentially Derived Varieties:** These varieties are predominantly derived from an initial variety that retains the characters of the initial variety and is clearly distinguishable from such initial variety at least for one trait.
- **Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA):** It is a statutory body established under PPV&FR Act, under
 - **Ministry:** The Ministry of Agriculture & Farmers' Welfare.
 - **Headquarters:** New Delhi,
 - **Primary objectives** are to:
 - > **Grant intellectual property rights to plant breeders** for their innovations in developing new plant varieties.
 - > Recognise and reward farmers and communities who **conserve traditional varieties and biodiversity**.
 - > Promote the **protection of farmers' rights** to save, use, sow, resow, exchange, share, and sell farm-saved seed of registered varieties
 - > **Encourage research and innovation** in plant breeding and agriculture
 - **Members:** Chairperson and 15 other members, including representatives of farmers, tribal organization, seed industry and women's organisation.
- **Establishments under PPV&FRA:**
 - **National Register of Plant Varieties:** The National Register contains the names of all registered plant varieties along with the rights of breeders in respect of registered varieties.
 - **National Gene Bank:** Established to store the seed material, including parental lines submitted by the breeders of the registered varieties.
 - **National Gene Fund:** Utilized for any amount to be paid by way of benefit sharing, compensation payable to farmers and supporting sustainable use of genetic resources.

Limitations of the Act

- **Procedural Complexities:** There are obstacles in the registration process, and meeting DUS testing criteria can be difficult without technical assistance.

- **Disputes:** Potential disputes in benefit sharing and difficulties in balancing between breeders' rights and farmers' rights.

Weak Enforcement Mechanisms:

There are challenges in Effective Execution due to a lack of awareness among farmers and the non-availability of sufficient enforcement capacity.

- **Balancing Rights and Access:** There are concerns that it can facilitate the monopolization of particular varieties by large firms, which may disadvantage small-scale farmers.
- **Loss of Traditional Knowledge:** Lack of sufficient incentives for traditional breeding practices that may hamper the proliferation of traditional climate-resilient seed varieties.

Conclusion

As the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001, completes twenty-five years, it stands out as a distinctive Indian response to global intellectual property obligations, one that consciously balances innovation with equity. Going forward, simplifying registration processes, strengthening institutional capacity, expanding farmer outreach, and ensuring fair benefit-sharing will be crucial to realise the Act's full transformative potential.

Significance of the Act



Improved Yields: Increases access to a wider range of high-quality seeds.



Protection of Farmers' Rights: Recognizes and protects farmers' rights to save.



Development of Quality Seeds: Contribute to strengthening both public and private sector seed systems.



Research and Innovation: Incentivize breeders to invest in R&D of new and improved varieties.



Sustainable Agriculture: Contribute to enhanced food security and climate resilience.



Preservation of Traditional Knowledge: Safeguard farmers' traditional knowledge and ensure equitable benefits.

3.6. MARITIME SECTOR OF INDIA

Why in the News?

The Prime Minister unveiled landmark maritime initiatives to boost growth and sustainability in the maritime sector during India Maritime Week 2025.

Major Initiatives launched in India Maritime Week

- **Maritime Investment Roadmap:** India invited Singapore to join its **\$1 Lakh Crores Maritime Investment Roadmap** covering shipbuilding, port modernisation, and green-fuel collaboration.
- **Digi Bandar:** A national framework to make all ports **data-driven, AI-enabled, and interconnected**.
 - It aims to improve efficiency, safety, and transparency across India's ports.
- **Green Tug Programme:** Launched to deploy **100 eco-friendly tugs by 2040**, with an investment of about **₹12,000 crore**, supporting India's transition to cleaner and energy-efficient maritime logistics.

India's Maritime Sector and Vision

- **Trade:** Nearly **95% of India's trade by volume and about 70% by value** moves through maritime routes, highlighting the sea as the lifeblood of India's commerce.
- **Indian Ports:** In FY 2024–25, major ports handled ~855 million tonnes of cargo, with total port capacity nearly doubling from **1,400 million metric tonnes per annum (MMTPA)** to **2,762 MMTPA**.
 - Average vessel turnaround time of major ports has been reduced from **93 hours to just 48 hours**, enhancing overall productivity and global competitiveness.
- **Shipping Sector:** Number of **Indian-flagged vessels** has risen from **1,205 to 1,549** and **gross tonnage** of the Indian fleet has increased from **10 million gross tonnes (MGT)** to **13.52 MGT**.
- **Inland Waterways:** Number of **operational waterways** has increased remarkably from **3 to 29** with an increase of 710% in cargo movement from 2014.

- **Workforce: India's seafarer workforce** has surged from **1.25 lakh** to over **3 lakh**, now accounting for **12% of the global seafaring workforce**, making the country one of the **world's top three suppliers** of trained seafarers.

Challenges in Maritime Sector

- **Connectivity Bottlenecks:** Lack of adequate last-mile connectivity to the ports through road/rail hinders trade, market access and increases logistics costs.
- **Transshipment Competitiveness:** Limited transshipment handling capacity and tough competition from nearby transshipment hubs like the Port of Colombo.
- **Indian Flagged Tonnage:** High tax provisions with progressively higher tax on larger vessels discourages ship registration under Indian flag.
 - India's shipping registry accounts for only 0.8% of the world's vessels.
- **Manufacturing Gaps:** India's share in global shipbuilding remains modest, at about 1% and India imports more than 95% of marine engines installed on commercial ships.
- **Maritime Security:** India faces diverse maritime security threats including non-state threats (terrorism, smuggling of drugs/arms, piracy), economic threats (IUU fishing, pollution, greenhouse emissions) and state-led threats from China and Pakistan.

Major Programmes for Atmanirbhar Maritime Sector

- **Maritime India Vision 2030 (MIV 2030):** Launched in 2021, it identifies ten pivotal themes that will shape India's journey toward becoming a global maritime powerhouse.
- **Maritime Amrit Kaal Vision 2047:** A long-term roadmap for India's maritime resurgence, with nearly ₹80 lakh crore invested in ports, coastal shipping, inland waterways, shipbuilding, and green shipping.
- **Sagarmala Programme:** The programme focuses on cutting logistics costs, enhancing trade efficiency, and creating employment through smarter, greener transport networks.
- **Port Development:** India operationalised its first deep-water international trans-shipment hub at Vizhinjam and the **One Nation One Port Process** initiative aims to unify documentation and processes across all major ports.
- **Legal Transformation:** Parliament passed five key maritime acts, namely Indian Ports Act, Merchant Shipping Act 2025, Carriage of Goods by Sea Act, Bills of Lading Act, and the Coastal Shipping Act, 2025.
- **Favourable Investment Climate:** The government allows 100% Foreign Direct Investment (FDI) in port development.
- **"Jalvahak" Cargo Promotion Scheme:** To promote Inland Water Transport (IWT), it offers 35% reimbursement on operational costs and launching scheduled cargo services on key NW routes.

Greening of Maritime Sector

Need

- **Emissions:** Maritime transport accounts for **~3% of global greenhouse gas (GHG) emissions** and ports are among the major sources of air and water pollution, and greenhouse gases (GHGs).
- **Biodiversity:** Maritime emissions stress on the rich biodiversity and marine life found in the mangroves, lagoons, coral reefs, and beaches along the coast.
- **Energy Security:** Conventional shipping relies heavily on imported **heavy fuel oil (HFO) and marine diesel**, which are affected by volatile global prices and geopolitical shifts.
- **Fulfilment of SDGs:** In alignment with SDG goals, International Maritime Organization (IMO) has set a target of 40% CO2 reduction from shipping sector by 2030.

Measures

- **Indian Ports Act, 2025:** Mandates adherence to global green norms, and introduces robust pollution control and disaster readiness measures to promote sustainability and eco- friendly port practices.
 - It also aligns with The **International Convention for the Prevention of Pollution from Ships (MARPOL) and Ballast Water Management**.
- **Maritime India Vision (MIV) 2030:** It identified key interventions like increasing usage of renewable energy, reducing air emissions, optimizing water usage, improving solid waste management, etc.

- **Harit Sagar Green Port Guidelines:** They serve as a comprehensive framework to help Indian ports develop safe, efficient, green, and sustainable operations.
- **Green Tug Transition Programme (GTTP):** It aims to drive the transition from conventional fuel-based harbour tugs, a marine vessel that helps other vessels by pushing or pulling them, with direct contact or a tow line, to greener, more sustainable alternatives.
- **Harit Nauka (Green Vessel) Initiative:** Launched to promote adoption of greener technologies in inland waterway vessels.

Conclusion

India's maritime sector is undergoing a decisive transformation from a support service for trade to a strategic engine of economic growth, sustainability, and global influence. With rising port efficiency, expanding inland waterways, a globally competitive seafaring workforce and a strong push towards decarbonisation, India is aligning its maritime growth with the twin imperatives of Atmanirbhar Bharat and climate responsibility.

3.7. NEWS IN SHORTS


3.7.1. FINANCIAL SECTOR ASSESSMENT PROGRAM (FSAP) REPORT BY WORLD BANK

The FSAP report has urged India to accelerate financial sector reforms to achieve its long-term goal of becoming a **USD 30 trillion economy by 2047**.

Key Highlights of the Report


- **Resilient system:** Financial system is stronger and more diversified, with assets rising to about **175% of GDP (from 144% in 2017) with the state playing a dominant role.**
- **Digital strength:** Digital public infrastructure has improved access, efficiency, and financial inclusion.
- **Regulatory progress:** Reforms by the RBI and SEBI have enhanced supervision, though challenges persist in NBFC oversight and risk management.
 - India's expansion of regulatory authority on cooperative banks, tightening of key prudential rules has been appreciated.
- **Market development:** Corporate bond and infrastructure financing remain shallow, with investors preferring government securities.
- **Tax disparities:** Uneven tax treatment between debt and equity discourages bond market participation.

Required Reforms




Boost private capital mobilisation

- Deepen bond and securitisation markets to attract long-term investors.




Strengthen NBFC regulation

- Refine scale-based frameworks and align with global prudential norms.




Integrate digital and financial reforms

- Link fintech innovations with broader financial inclusion goals.



Sustain reform momentum

- Maintain coordination among financial regulators to ensure market stability and growth.



Mobilise green finance

- Use **DFIs** (Development Finance Institutions) to fund low-carbon projects and reduce investor risk.

About FSAP

- **Genesis:** FSAP is a joint World Bank-IMF program started in 1999.
- **Conduct:** FSAPs in advanced economies are conducted **by the IMF**. In developing and emerging market economies, **FSAPs are conducted jointly with the World Bank by IMF**.
- **India's previous FSAP was conducted in 2017.**

3.7.2. INITIAL PUBLIC OFFERING (IPO)

India's **Chief Economic Advisor** raised concerns regarding use of **Initial Public Offering (IPO)** as an **exit route for early-stage investors** rather than an instrument for **raising long-term capital**.

About Initial Public Offer (IPO)

- An IPO is the **selling of securities of private companies to the public** in the **primary market (for the first time)**.
- IPO transforms a **privately-held company into a public company**.
- It is the largest source of funds with **long or indefinite maturity** for the company.
- **Types of IPO: Fixed Price Issue and Book Building Issue** (no fixed price, but a price band).

3.7.3. DIGITAL INITIATIVES LAUNCHED TO MODERNISE WAREHOUSING AND BOOST PDS TRANSPARENCY

Union Minister of Consumer Affairs, Food & Public Distribution launched **major digital initiatives** to modernize warehousing operations, improve supply chain efficiency and enhance transparency across the Public Distribution System (PDS).

Significance



Supports Government's mission to reduce **logistics cost**, minimize **turnaround time** and strengthen **supply chain efficiency**.



Promotes integrated **logistics ecosystem** under **PM Gati Shakti**.



Ensures accurate, faster, dignified delivery of subsidized foodgrains.

Initiative	Details
Bhandaran 360	<ul style="list-style-type: none"> • Introduced by Central Warehousing Corporation (CWC), it is a cloud-based ERP platform which integrates HR, finance, warehouse management, contract monitoring etc. • Benefits: real-time monitoring of warehouse operations, Standardization across all CWC warehouses.
Smart EXIM Warehouse System	<ul style="list-style-type: none"> • CWC has introduced the Smart EXIM Warehouse System for container freight stations (CFS/ICD) and general warehouses. • It uses technologies like AI, IoT, FASTag, OCR/ANPR, and GNSS to automate key processes. • Benefits: Gate Automation and Yard Management, cargo tracking., Smart Inventory Management.
ANNA DARPAN	<ul style="list-style-type: none"> • Introduced by FCI, it is a new microservices-based (mobile-first) platform that replaces the existing Depot Online System. • It integrates procurement, storage, movement, sales, labour & contract management enabling real-time dashboards and faster decision-making across the food supply chain.
ASHA Platform	<ul style="list-style-type: none"> • The Department of Food and Public Distribution has launched ASHA (Anna Sahayata Holistic AI Solution). • It is an AI-based platform that allows beneficiaries to share their feedback on ration distribution through AI enabled calls in their preferred language.

3.7.4. NATIONAL INDUSTRIAL CLASSIFICATION (NIC) – 2025

Released by MoSPI the NIC is a fundamental tool for statistical surveys, censuses, economic research, and policy formulation.

National Industrial Classification (NIC) – 2025

- NIC 2025 updates the previous NIC 2008. (It was first introduced in 1962).
- It was prepared by MoSPI in alignment with the **International Standard Industrial Classification of All Economic Activities (ISIC) Revision 5** developed by the **United Nations Statistics Division (UNSD)**.

4. SECURITY

4.1. WHITE COLLAR TERRORISM

Why in the News?

The National Investigation Agency (NIA) has arrested Doctor from Baramulla, J&K, as the eighth key accused in the last month's Delhi bomb blast case described as an act of White-Collar Terrorism.

About White Collar Terrorism (WCT)

- **Genesis:** The concept derives its origin from Edwin Sutherland concept of "White-Collar Crime" which shifts focus to crimes by respected professionals in the society.
- **Definition:** It refers to the **covert participation of professionals** in enabling, designing, financing, or shielding terrorist operations.
 - These individuals **weaponise intellect** rather than arms, crafting encrypted communication systems, laundering funds across borders, forging identities, exploiting bureaucratic loopholes, or leaking classified information.
 - There is currently **transition from the role of intellectuals as facilitators to direct participation** in the acts of terror as seen in the Delhi Blast case.
- **Evolution of White-Collar Terrorism:** In 1980s, White-collar professionals raised funds for violent organizations such as Palestinian Liberation Organization (PLO) and the Irish Republican Army (IRA) in North America.
 - The Engineers in ISIS's weapons program, doctors in AlQaeda's networks, and IT specialists who created sophisticated propaganda machinery.
 - **India:** The entire group of ISIS recruits from **Kerala** came from **well-to-do upper-middle-class** families with sound educational background.
- **How it is different from Traditional Terrorism:**
 - Unlike **traditional terrorism, which relies on overt violence and intimidation**, WCT operates through **subversion and enablement**. Its motivation is ideological, religious, or political, which distinctly separates it from **white-collar crime, which is solely motivated by financial gain**.
 - It thrives on deception, legitimacy, and their privileged access to sensitive structures.

Factors leading to White-Collar Terrorism

- **Rise of Digital Technology:** Technical skills and global networks enable precise, high-impact operations, such as drone-based explosives and complex funding mechanisms. Their expertise allows terror plots to be more sophisticated, sustained, and potentially devastating.
- **Difficult to detect:** The advantage of institutional cover where universities, hospitals, corporate offices, NGOs, and research labs provide respectability, access to sensitive materials etc.
- **Transnational linkages & networked radicalism:** The Delhi blast module was ideologically and operationally linked to Jaish-e-Mohammed handlers based in Pakistan.
- **Deemed Religious Superiority:** Belief that Sharia-sanctioned governance, judicial, social and educational setups are far superior to secular, democratic, and modern institutions.
- **Relative Deprivation Theory:** In this, extremism is driven by perception of gap between expectations and reality leading to feelings of injustice and resentment.
- **Social Identity Theory:** Grievances can be channeled into a search for an all-encompassing identity. E.g., Professional designation might be subordinated to an extremist 'higher-purpose' identity.
- **Diaspora and Connectivity:** E.g. Kerala has a large diaspora in the Gulf nations, with high rates of passport ownership and frequent international travel making it easier for recruits.

India's Counter Terrorism Strategy

- **Investigation and Intelligence Agencies:** National Investigation Agencies, National Security Guards, Intelligence Bureau, etc.
- **Legal Regime:** Unlawful Activities (Prevention) Act, 1967.
- **Preventing Terror Financing:** Terror Funding and Fake Currency Cell (TFFC) under NIA; Combating Financing of Terrorism (CFT) Cell under Ministry of Home Affairs, etc.
- **Retaliatory Responses:** Surgical Strike (2016); Operation Sindoor (2025) etc.

Way Forward

- **Stronger Regulation & Enforcement:** Tighten NGO audits, compliance, and blacklisting; empower ED/CBI to probe financial links to WCT.
- **Enhanced Institutional Oversight:** Enforce background checks, forensic audits, and security officers in universities; digitally track sensitive materials.
- **Global Transparency Alignment:** Adopting FATF aligned reporting to close funding and oversight gaps.
- **Crack Down on Laundering Networks:** Strengthen KYC with biometrics; monitor high-value transactions and shell entities via FIU-India and ED.
- **Fiscal Transparency & Accountability:** Promote citizen led budget monitoring to curb corruption and misuse of public funds.
- **Unified Risk Intelligence Grid:** Create a national registry of sensitive professions linking IB, NIA, ED, and state police databases.
- **Early Radicalisation Warning:** Train educators and managers to identify red flags; enable anonymous reporting and prevention programs.

Conclusion

White collar terrorism is, ultimately, the **new face of extremism, quiet, intelligent, and embedded within society** itself. In India's case, it is not an anomaly but **an emerging pattern**, one that requires urgent recognition and strategic countermeasures. The threat no longer comes only from the shadows of conflict zones; it now emerges from classrooms, clinics, offices, and research labs. And that is what makes it far more formidable.

4.2. NEWS IN SHORTS

4.2.1. EXERCISE IN NEWS

Exercise	Details
Trishul 2025	• A major tri-Service drill along western border with Pakistan across Gujarat and Rajasthan.
Sagar Kavach	• Biannual coastal security exercise conducted by the Indian Coast Guard to assess preparedness of in handling coastal security emergencies.
Mitra Shakti	• Bilateral annual joint military exercise between the Indian Army and Sri Lankan Army. • Alternatively, hosted by India and Sri Lanka.
VINBAX	• Bilateral army exercise between India and Vietnam
Malabar	• Aim: To strengthen cooperation and security in the Indo-Pacific region. • Participating countries: India, Australia, Japan, and the United States of America.
GARUDA	• Bilateral air exercise between Indian Air Force and French Air and Space Force.
AJEYA WARRIOR	• Biennial India-UK Joint Military Exercise.

4.2.2. GPS SPOOFING

Airlines have reported a surge in GPS spoofing over Delhi, triggering government investigations into the unusual navigation disruptions.

About GPS Spoofing

- It is a type of **cyberattack** that transmits false GPS (Global Positioning System) signals to **mislead navigation systems**.
- Function:** It **exploits the weak signals of GPS satellites** by overpowering them with fake signals, making receivers show false locations.

4.2.3. BUREVESTNIK MISSILE

Russia has successfully tested its nuclear-powered and nuclear-capable **Burevestnik missile**.

About Burevestnik missile (also called SSC-X-9 Skyfall)

- It is one of six **strategic weapons of Russia's** new-generation **nuclear arsenal**.
- Type:** Long-range, low-flying **nuclear-powered cruise missile**.

Cruise missile is powered by jet engines for continuous flight throughout their journey.



Lakshya Prelims & Mains Integrated Mentoring Program 2026

(A 9.5 Months Strategic Revision, Practice, and Mentoring Program for UPSC Prelims and Mains Examination 2026)

VisionIAS introduces the Lakshya Prelims & Mains Integrated Mentoring Programme 2026, offering unified guidance for UPSC aspirants across both stages, ensuring comprehensive support and strategic preparation for success

Highlights of the Program

- Coverage of the entire UPSC Prelims and Mains Syllabus
- Highly experienced and qualified team of senior mentors
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Date	Duration	Medium	Mode
30 December	8 Months	English & Hindi	Offline & Online

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5. ENVIRONMENT

5.1. UNFCCC COP30


Why in News?

Recently, 30th Conference of Parties (COP30) to United Nations Framework Convention on Climate Change (UNFCCC) was held in Belém, Brazil which also coincided with the 10th anniversary of the Paris Agreement.

More on News


- Hosted in the Amazon region, the summit was framed as the "COP of Implementation", "COP of Truth", and the "Forest COP".
- COP30 aligned with the deadline for countries to submit **updated** Nationally Determined Contributions (**NDC 3.0**) in **2025**.
- It concluded with adoption of **Belem Package**, by **195 Parties**, including agreements on topics such as **just transition, adaptation finance, trade, gender, and technology** etc.
- Key meetings included:**
 - COP 30** (UNFCCC), **CMP 20** (Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol) & **CMA 7** (Conference of the Parties serving as the meeting of the Parties to the Paris Agreement).





UNFCCC

Bonn, Germany



Genesis: It emerged from **1992 Earth Summit at Rio de Janeiro**, adopted in 1994.

It is one of the **three sister conventions (Rio Conventions)**, the other two being UN Convention on Biological Diversity (**UNCBD**) and **UN Convention to Combat Desertification (UNCCD)**.

The **first COP** meeting of the **UNFCCC** was held in **Berlin, Germany, 1995**.

Signatories: 198 (India is a member)

Outcome	Primary Purpose	Launched By/Under
Implementation Work Programme (Mutirao Decision)		
Belém Mission to 1.5°C	<ul style="list-style-type: none"> action-oriented platform under the COP29-COP31 troika to foster enhanced ambition and international cooperation across mitigation, adaptation, and investment 	COP29-COP31 Troika (UAE, Azerbaijan, Brazil)
Global Implementation Accelerator	<ul style="list-style-type: none"> voluntary initiative launched to support countries in implementing their NDCs and National Adaptation Plans (NAPs) 	COP 30 & 31 Presidencies
National Adaptation Plans (NAPs) Implementation Alliance	<ul style="list-style-type: none"> launched as a new PAS (Plan to Accelerate Solutions) under the COP 30 Action Agenda. supports implementation of NAPs and mobilize public and private investment to advance national adaptation priorities 	UNDP , Italy, Germany, NAP Global Network, NDC Partnership
Forests & Nature		
Tropical Forest Forever Facility (TFFF)	<ul style="list-style-type: none"> Establish a \$125B fund Tropical Forest Investment Fund (TFIF) that pays tropical forest nations for countries for maintaining and expanding tropical and subtropical moist broadleaf forests. Mandates that at least 20% of all payments flow directly to Indigenous Peoples and Local Communities. (IP&LC) 	Brazil, Indonesia, DRC, China etc. (India has joined as an Observer) Trustee and Interim host: World Bank
Resilient Agriculture Investment for net-Zero	<ul style="list-style-type: none"> A project to restore 3 million hectares of degraded farmland using blended finance and private capital. 	Brazil & 10 Partner Nations

land degradation (RAIZ) Accelerator	<ul style="list-style-type: none"> Based on “Green Way and Eco Invest in Brazil”. Coordinated by : FAO, Food and Land Use Coalition (FOLU), Consultative Group on International Agricultural Research (CGIAR), G20 Land Restoration Initiative, World Bank 	Hosted by Brazil’s Ministry of Agriculture under the FAO FAST Partnership
Scaling J-REDD+ Coalition (Jurisdictional Reducing Emissions from Deforestation and forest Degradation+)	<ul style="list-style-type: none"> A new coalition of governments, Indigenous Peoples, investors, intermediaries, standard setters, and civil society offers a credible, mature pathway to mobilize \$3–6 billion per year by 2030 to halt and reverse tropical deforestation. 	UK, Singapore, Costa Rica, Ethiopia, Ghana, Guyana, Kenya etc
Finance & Economy		
Baku to Belém Roadmap to 1.3T	<ul style="list-style-type: none"> The official pathway to mobilize the New Collective Quantified Goal (NCQG) of \$1.3 trillion/year by 2035. 	COP 29 & 30 Presidencies
Tripling of adaptation finance	<ul style="list-style-type: none"> Increase adaptation finance to \$120 billion per year, as part of the broader \$300 billion per year in climate finance (known as New Collective Quantified Goal (NCQG), agreed at COP29). 	-
Baku Adaptation Roadmap	<ul style="list-style-type: none"> Approves and establishes the work for 2026-2028, until the next Global Stocktake of the Paris Agreement. 	-
FINI (Fostering Investible National Implementation)	<ul style="list-style-type: none"> Make National Adaptation Plans (NAPs) investible and implementation-ready. Develop project pipelines of USD 1 trillion in adaptation investment pipelines by 2028, with 20% coming from private investors Led by: Atlantic Council’s Climate Resilience Center and Natural Resources Defense Council 	Supported by: Interamerican Development Bank (IDB) and the Green Climate Fund (GCF)
Open Coalition on Compliance Carbon Markets	<ul style="list-style-type: none"> Initiative to harmonize carbon pricing and integrity standards across national borders and collaborate in defining best practices for Monitoring, Reporting, and Verification (MRV). 	Brazil,, China, EU,UK Canada, Germany, Singapore etc.
Belem Declaration for Green Industrialization	<ul style="list-style-type: none"> Accelerating decarbonization of heavy emitting industries and promoting green industrialization in pursuit of global climate and development goals 	35 countries and organisations (such as UNDP,UNIDO) etc.
Energy & Infrastructure		
Plan to Accelerate the Expansion and Resilience of Power Grids	<ul style="list-style-type: none"> coordinate relevant stakeholders towards grid expansion and a renewables-powered future. 	Green Grids Initiative (GGI)
Plan to Accelerate Coal Transitions (PACT)	<ul style="list-style-type: none"> A roadmap to fast-track the transition from coal to clean energy while ensuring energy security. 	Powering Past Coal Alliance (PPCA)
Belém 4x Pledge on Sustainable Fuels	<ul style="list-style-type: none"> Quadruple the use of sustainable fuels (hydrogen, biofuels, e-fuels) by 2035 compared to 2024 levels. 	Italy, Japan, India and Brazil etc. International Energy Agency (IEA) will track progress
Social & Health		
Belém Health Action Plan	<ul style="list-style-type: none"> world’s first international climate adaptation plan dedicated to health 	>30 countries & 50 organizations

	<ul style="list-style-type: none"> \$300 million in initial funding to build climate-resilient health sector especially in the Global South. 	
Belém Gender Action Plan (GAP)	<ul style="list-style-type: none"> designed to implement Lima Work Programme on gender 	Adopted by Parties at COP30 for 2026–2034
Declaration on Information Integrity on Climate Change	<ul style="list-style-type: none"> It establishes shared international commitments to address climate disinformation and promote accurate, evidence-based information on climate issues. first time the topic of information integrity has been included in the COP Action Agenda. It treats “information pollution” as a structural barrier and aims to protect public trust in climate science. 	Global Initiative for Information Integrity on Climate Change Endorsed by Brazil, Canada, Chile, Denmark, etc.
Belém Declaration on Hunger, Poverty, and People-Centered Climate Action	<ul style="list-style-type: none"> To promote actions that address the unequal ways climate change affects populations worldwide, particularly the most vulnerable. 	Signed by 43 countries and the European Union
Emergency Action		
2030 Strategy	<ul style="list-style-type: none"> enabling climate-vulnerable nations to build early warning systems 	Climate Risk and Early Warning Systems (CREWS)
Call to Action on Integrated Fire Management and Wildfire Resilience	<ul style="list-style-type: none"> Acknowledges International cooperation for integrated fire managements 	Brazil

Significance of the COP30

- Implementation over promises:** The summit shifted global climate governance from pledge-making to implementation and accountability.
- Adaptation Priority:** It marked a global push for adaptation finance and operational frameworks addressing long-standing Global South concerns.
- Forest Leadership:** The TFFF introduces a scalable global model for forest conservation not tied to carbon markets.
- Finance Overhaul:** The USD 1.3 trillion/year goal represents the most ambitious climate finance mobilisation target.
- Multilateral Resilience:** Despite geopolitical tensions, all 195 parties adopted the Belém Package.

Way Forward

- Closing the gaps:** Countries must ensure that **NDC 3.0** includes economy-wide absolute emission reduction targets.
 - Policies need to integrate “**enabling conditions**” (grids, storage) to make these targets credible, as seen in the “**Belém Mission to 1.5°C**”.
 - The promised **finance and technology support must materialize: Developed nations** should spell out contributions to the **NCQG** and fulfill **fast-start adaptation pledges**.
- Operationalising mechanisms:** Parties should **finalize GGA** (Global Goal on Adaptation) **indicators** and build data systems for adaptation monitoring.
 - The **Global Implementation Accelerator (GIA)** and **Belem 1.5 Mission** need **clear mandates and resources** to assist vulnerable countries.
- Strengthening equity and collaboration:** The **CBDR** (Common but Differentiated Responsibilities) principle must guide mitigation timelines and finance flows
 - International cooperation **platforms** (e.g. UNFCCC, WTO climate-trade dialogue) should be used to resolve tensions over carbon borders and trade measures.
 - A “**mutual recognition**” agreement where a developing country’s verifiable carbon price is accepted by border systems to **avoid double taxation**.

- **Effective operationalisation of TFFF**, by closing the **capitalization gap** can create long-term conservation incentives.
- **Engaging non-state actors:** Governments need to **build on private sector pledges** (e.g., from **TFFF** or **Ocean Breakthroughs**) by **creating enabling environments:** clear regulations, incentives, and monitoring **to ensure** these voluntary commitments yield **real emission cuts**.
- **Public engagement** (as seen in the **Belém Climate March**) also **needs institutional pathways** to inform policymaking.

Conclusion

COP30 signaled a shift toward **operationalising the Paris Agreement** by expanding adaptation finance, refining implementation mechanisms, and institutionalising forest conservation. **The Belém Package** signals a pivotal shift toward implementation and inclusion. **The task now** is to **implement Belém’s blueprint** by raising NDC ambition further, executing forest and ocean pledges, and swiftly operationalizing climate finance flows.

5.1.1. OTHER IMPORTANT OUTCOMES OF COP30

Initiative/Coalition/Outcome	Launched by	Details
Systematic Observation Impact Bond	Systematic Observations Financing Facility (SOFF) , a United Nations fund created by UNEP, WMO and UNDP	<ul style="list-style-type: none"> ● World’s first impact bond on weather and climate data ● Announced as part of COP30 (UNFCCC) Action Agenda. ● Aim: Finance instrument to strengthen resilience and early warnings worldwide. <ul style="list-style-type: none"> ○ Seeks initial capitalization of USD 200 million by end of 2026. ● Significance: Help 30 Least Developed Countries (LDCs) and Small Island Developing States (SIDS) meet Global Basic Observing Network (GBON) standards.
Climate and Health Funders Coalition (CHFC)	Private Institutional and individual funders like Bloomberg Philanthropies, Gates Foundation, etc.	<ul style="list-style-type: none"> ● Committed an initial \$300 million for integrated action to tackle climate change and its consequences on health. ● The committed funders currently include: ● Immediate focus: Extreme heat, Air pollution, Climate sensitive infectious diseases, Critical climate and health data for decision makers.
Plan to Accelerate the Solution (PAS) on Multilevel Governance	Coordinated by COP30 Presidency, Brazil’s Ministries of Environment and Cities, and UN-Habitat .	<ul style="list-style-type: none"> ● Targets integration of multilevel structures into 100 countries Nationally Determined Contribution (NDCs) by 2028 and 120 by 2030.
Global Mutirão Against Extreme Heat / Beat the Heat Implementation Drive	COP30 Presidency and UNEP-led Cool Coalition	<ul style="list-style-type: none"> ● Joined by 185 cities in implementing heat action plans and nature-based solutions (e.g., urban forests, green roofs), ● Aim: To reduce heat risks for 3.5 billion people globally and integrate solutions into 50 national adaptation frameworks by 2030. ● 72 nations have endorsed Global Cooling Pledge (reduce cooling-related emissions by 68% by 2050).
Food Waste Breakthrough	Led by UNEP	<ul style="list-style-type: none"> ● Launched as a 2030 Climate Solution under Marrakech Partnership for Global Climate Action.

		<ul style="list-style-type: none"> • Target: Halving global food waste and Up to 7% reduction in methane emissions by 2030. • Funding Support: Global Environment Facility commits US\$3 million. • Participation: Country champions include Brazil, Japan and the United Kingdom
Oceans Breakthroughs Dashboard	-	To track progress within 5 ocean sectors, namely marine conservation, renewable energy, shipping, aquatic food, and coastal tourism that could help cut emissions by up to 35% by 2050
Global network of regenerative seascapes	One Ocean Partnership	Designed to mobilize at least USD 20 billion for a Regenerative Blue Economy.
Marine Biodiversity and Ocean Health (MBOH) toolkit	-	To enable stakeholders to take informed action to protect marine biodiversity and economic resilience.
No Organic Waste (NOW)	Supported by Global Methane Hub	Commits to cutting 30% of methane emissions from organic waste by 2030.
Indigenous Land Tenure Commitments (ILTC)	15 Governments Spanning Latin America, Africa, Asia, and the Pacific	Set a goal to advance ownership and protection of 160 million hectares of land for Indigenous and Afro-descendant groups.
Global Carbon Harvest Coalition	Brazil, India, and Kenya's national agricultural research institutions	It will accelerate and scale field research on soil organic carbon , biochar, and enhanced rock weathering.
Brazilian Sustainable Taxonomy (BST)	-	Launched to define sustainable investments.
Integrated Forum on Climate Change and Trade (IFCCT)	-	To help countries collectively explore practical approaches to make trade a driver of a just, sustainable and inclusive transition.
Utilities for Net Zero Alliance (UNEZA)	Established at COP28 with adoption of UAE Declaration of Action	It raised its annual investment targets to USD 148billion at COP30 . Members collectively aim to invest ~USD 1 trillion by 2030 to expand clean energy and modernize power grids.

5.1.2. INDIA'S POSITION AT COP30

Why in News?

India's negotiating posture at the **COP30** in Belém was sharply focused on **implementation** and operationalizing **climate justice**.

Core Objectives

India's strategy, delivered across the G77+China, **BASIC**, and **LMDC** groupings, rested on these **non-negotiable principles**:

Key Developing Country Negotiating Blocs at COP	
Grouping	Members & Composition
G77	The largest coalition of developing countries, now comprising 134 members.
LMDC (Like-Minded Developing Countries)	A more hardline group within the G77, including countries like India, China, Bolivia, Cuba, Egypt, and Iran.
BASIC	A coalition of four large, rapidly developing economies: Brazil, South Africa, India, and China.

India's Position at COP 30

Key Area	India's Stance and Statements
Equity and Climate Justice	<ul style="list-style-type: none"> Reiterated that Equity and "Common but Differentiated Responsibilities" (CBDR-RC) remain the central cornerstone of the global climate regime. Cautioned that the burden of mitigation must not be shifted to those with the "least responsibility in causing the problem".
Climate Finance as a Legal Obligation	<ul style="list-style-type: none"> Highlighted that the implementation of Article 9.1 is a legal obligation for developed countries to provide finance. Stated that finance remains the "key barrier to raised ambition" and requested a clear, universally agreed definition climate finance
Adaptation and the Global Goal	<ul style="list-style-type: none"> Declared that COP 30 must be the "CoP of Adaptation". Welcomed progress on the Global Goal on Adaptation (GGA), supporting a minimum package of indicators provided there is flexibility for national circumstances.
Just Transition Mechanism	<ul style="list-style-type: none"> Welcomed the establishment of the Just Transition Mechanism as a "significant milestone" to operationalize equity. Insisted that transition work programs must result in "action-oriented institutional arrangements" that are people-centric.
Mitigation and Net Zero Responsibilities	<ul style="list-style-type: none"> Stressed that developed countries must "reach net-zero earlier" to preserve equitable carbon space. Called for developed nations to invest more in negative emissions technologies.
Unilateral Trade Measures	<ul style="list-style-type: none"> Called for "Unilateral Trade-restrictive Climate Measures" to be rejected as they act as instruments of protectionism.
Technology Transfer and Access	<ul style="list-style-type: none"> Asserted that "Technology Access is a Right, not a Bargaining Tool". Emphasized that intellectual property and market barriers must not hinder technology transfer to developing nations.
Multilateralism and Diplomacy	<ul style="list-style-type: none"> Expressed unwavering support for multilateralism and international cooperation. Praised the Brazilian Presidency for leadership rooted in the "spirit of Mutirão" (inclusion and balance).


5.1.3. CLIMATE FINANCE

Why in the News?

India along with 12 other developing countries and African Islands States Climate Commission (AISCC) announced plans to develop **'Country or Regional Platforms for Climate and Nature Finance'**.


More on the News

- These plans were unveiled at the recently concluded **Conference of Parties (COP30)** to the **United Nations Framework Convention on Climate Change (UNFCCC)** at Belém, Brazil.
 - 12 developing countries are Cambodia, Colombia, Kazakhstan, Lesotho, Mongolia, Nigeria, Oman, Panama, Rwanda, the Dominican Republic, Togo, and South Africa.
- About the Platforms:** Country Platforms are **strategic, country-driven mechanisms** that translate climate priorities into **programmatic investment approaches**.
 - They are designed to **align global support and investment flows with the national priorities** of each country.



GCF

Incheon, South Korea



Genesis: Established in **2010** under the **Cancún Agreements** at COP16 to UNFCCC.

Aim: To **help developing countries fund projects and programs that address climate change**, supporting their shift to low-emission, climate-resilient development pathways.

- It serves as the **financial mechanism of the UNFCCC and the Paris Agreement**.

GCF is mandated to invest **50% of its resources to mitigation** and **50% to adaptation** in grant equivalent.

- **Funding:** The platforms will be supported under the **Green Climate Fund's (GCF) Readiness Programme**.
 - The Readiness Programme is as the **largest climate action capacity-building facility for developing countries**.
 - GCF funds already support two existing platforms, the **Brazil Country Platform and the Caribbean Regional Platform**.
- These platforms seek to **replace a fragmented project approach**, by helping to **coordinate various public and private, international and local stakeholders**.

Issues related to climate finance

- **Ambition without guaranteed delivery:** Targets rely on voluntary pledges and private flows, not guaranteeing the **public, concessional funding** vulnerable countries need.
 - Developing nations require an estimated **US\$1.3 trillion** each year for climate action.
 - However, the **New Collective Quantified Goal (NCQG)** agreed upon at COP29 is just **US\$300 billion** annually.
- **Concessionality and access issues:** LDCs and SIDS face barriers to access; blended instruments risk creating debt unless grant elements are preserved.
- **Overreliance on private finance:** Private capital prefers bankable mitigation projects over adaptation and L&D, which require grants.
- **Unspent Funds at GCF:** Despite the GCF having over **US\$19 billion** committed across 134 developing countries, it faces criticism from developing countries for **it's difficult to comply with disbursal mechanisms**.
 - Of the total amount of GCF funding for projects under implementation, only **~40% has been disbursed**.
- **The 2035 problem (Slow Timelines):** Targets pushing major increases to 2035 are politically easier but problematic for countries facing immediate climate impacts.
- **Transparency and additionality:** Concerns remain **regarding double-counting** and whether "**mobilized**" private finance is **truly additional to existing ODA** (Official Development Assistance).

Climate Finance Viewpoints

- **Historical Responsibility:** Developed countries hold the bulk of cumulative emissions yet contribute insufficient public finance.
- **Distributional Inequality:** LDCs, SIDS and Indigenous Peoples face the highest climate risks.
- **Intergenerational Equity:** Delaying adaptation finance to 2035 weakens future resilience.
- **India's Stand:** Reaffirmed Equity and CBDR-RC; opposed shifting the burden to private finance.

Climate Finance and India

India's Climate Finance Needs (TERI)

- **Net-Zero by 2070:** Requires ~USD 10.1 trillion.
- **NDC Implementation (2015-2030):** Estimated USD 2.5 trillion to USD 6-8 trillion.

Steps Taken to Mobilize Climate Finance (Domestic)

- **Sovereign Green Bonds (SGRBs):** FY23: ₹16,000 crore, FY24: ₹20,000 crore
- **Carbon Credit Trading Scheme (CCTS):** Established the Indian Carbon Market (ICM). GHG intensity targets notified for various sectors.
- **RBI & Climate Risk:** Draft Disclosure Framework proposes banks/NBFCs to disclose climate risks .
 - Framework for Green Deposits issued to prevent greenwashing.
- **IFSC, GIFT City:** Developing as a sustainable finance hub for foreign capital.

Way Forward for India and other developing countries

- **Push for predictable public flows** and a defined timeline for the **USD 300 billion** mobilization target.
- **Safeguard concessionality:** Insist on **grant** elements for adaptation/L&D and instruments avoiding harmful debt.
- **Standardize "mobilization" accounting:** Advocate for **transparent methodologies to avoid double-counting**.
- **Strengthen Domestic Frameworks:** Align climate finance taxonomy and disclosure norms with global standards (ISSB).
- **Create bankable pipelines with domestic safeguards:** Develop sovereign pipelines (renewables, resilience) tied to social/environmental safeguards.

- **Regional cooperation on blended facilities:** Explore **South-South blended mechanisms** aligning private capital with public interest.

Conclusion

The country platform initiative is an effort by the **Global South to take leadership of climate finance** and reshaping the architecture of global climate cooperation. COP30 created a political framework and introduced promising vehicles. But success now depends on implementation and transparency. Belém's credibility rests on turning commitments into predictable, public, and concessional finance. Most importantly, delivery instruments must protect vulnerable countries from taking on new debt.

5.2. URBAN AIR POLLUTION

Why in the News?

Commission for Air Quality Management (CAQM) implemented **Stage-III Graded Response Action Plan (GRAP)** across the entire NCR highlighting the issue of urban air pollution in India.

About Graded Response Action Plan (GRAP)

- It is an emergency response mechanism based on **AQI level of Delhi** implemented by Commission for Air Quality Management (**CAQM**).
- It was first created on **Supreme Court directions (M. C. Mehta vs. Union of India)**.
- It has **four stages**, based on AQI levels-
 - **Stage 1:** Poor category (AQI 201 to 300).
 - **Stage 2:** Very poor category (AQI 301-400).
 - **Stage 3:** Severe category (AQI 401-450).
 - **Stage 4:** Severe + category (AQI 451+)

Causes of Urban air pollution in India

- **Meteorological Factors:**
 - **Winter weather conditions** like **temperature inversion and low wind speeds** trap pollutants near the ground and prevent their dispersion in cities like Delhi.
 - **Pre-Monsoon Dust Transport** from **Thar Desert and Middle East into Indian cities**, in northern regions like Delhi.
- **Urban and Industrial Factors:** Pollution from **Industries** like cement, steel, refineries, brick kilns (e.g., refineries and chemical industries in Mumbai's Chembur area), **Vehicles** (Delhi's vehicles doubled since 2005), **Construction and Demolition Activities** (e.g., rapid construction along Gurugram's Golf Course Road) etc.
- **Urban layout:** **Narrow streets with tall buildings (street-canyon effect)** trapping pollutants; Shrinking green/blue spaces due to **unplanned urban expansion reduces natural filtration** etc.
- **Transboundary pollution:** Pollution in Delhi due to seasonal **stubble burning in neighboring states**; Worsened air quality over Chennai due to Aerosols transported from north India etc.
- **Other sources:** Ground-level ozone (forms when **NOx and VOCs react under strong sunlight**); Burning firecrackers during festivals; **open waste burning, frequent landfill fires** (e.g., Delhi, Ghaziabad, Bhalswa-Ghazipur landfills) etc.

Impact of Air Pollution

- **Health Impacts:** Cardiovascular disease, respiratory infections, irritation in eyes etc.
 - E.g., Air pollution linked to ~15% of all deaths in Delhi in 2023 (Centre for Research on Energy and Clean Air).
- **Environmental Impacts**
 - **Climate Change:** Pollutants like **black carbon and ground-level ozone** contribute to global warming.
 - **Acid Rain:** Emissions of SO₂ and NOx react with water vapour to form acids, **damaging** soils, crops, forests, monuments and aquatic ecosystems.



Data Bank

Extent of Air pollution in India (IQAir World Air Quality Report 2024-25)

- **5th most polluted** country in world
- **13 of world's 20** most polluted cities in India
- **Byrnihat (Assam-Meghalaya border)** is world's most polluted city
- **Delhi- world's most polluted national capital for 6th year**
- **> 10 times** annual **PM2.5 levels** prescribed by WHO guidelines recorded in **~35% of Indian cities**.

> **E.g.,** yellowing and surface corrosion in **Taj Mahal**.


- **Economic Losses:** India lost economic output equivalent to **9.5% of GDP in 2022 due to air pollution**. (The Lancet Countdown on Health and Climate Change report, 2025)
- **Social Impacts:**
 - **Reduced quality of life** due to poor visibility, closure of schools and offices.
 - **Disproportionate impact on vulnerable groups** like Children, elderly, and poor.

Steps taken to curb the Air Pollution

- **National Clean Air Programme (NCAP):** Aims to reduce particulate matter **concentrations by 40% by 2026 in 131 cities**
- **Graded Response Action Plan (GRAP):** Emergency measures to **combat air pollution in Delhi-NCR**.
- **Commission for Air Quality Management (CAQM), 2021:** Statutory body established for improved **air quality management in the National Capital Region**.
- **Measures for Vehicular Emission Control**
 - **Leapfrogging to BS-VI fuel and vehicle standards** (2020 nationwide).
 - Transition to 20% Ethanol Blended Petrol (E-20)
 - **RFID system** for toll & **Environment Compensation Charge** on commercial vehicles entering Delhi.
 - **Promotion of electric mobility** under PM E-DRIVE Scheme, Electric Mobility Promotion Scheme 2024 (EMPS 2024).
 - **SATAT initiative** for creating Compressed Bio-Gas (CBG) ecosystem.
- **Air Quality Monitoring & Data Systems**
 - **National Air Quality Index (AQI)** launched in 2015 (see infographic).
 - Installation of **Online Continuous Emission Monitoring System (OCEMS)** in red category air polluting industries in Delhi-NC.
 - **System of Air Quality and Weather Forecasting and Research (SAFAR)** Portal **provides air quality updates**.
- **Municipal Solid Waste (MSW) & Construction Dust Control**
 - Guidelines for **C&D waste management and dust mitigation (2017)**.
 - **Biomining** and bioremediation of **legacy waste to prevent landfill fires**.
 - Shifting of all operational brick kilns to **zig-zag technology in Delhi and NCR**.

Challenges in curbing Air Pollution in India

- **Policy & Governance Challenges**
 - **Transboundary pollution:** About 30% of urban pollution originates outside city limits yet **National Clean Air Programme (NCAP) city plans operate in silos**.
 - **Reactive measures:** Focus on **crisis-time and temporary actions** like GRAP, smog towers, rather than continuous, long-term pollution control.
 - **Fragmented governance:** Involvement of multiple agencies (Central government, Delhi government, multiple NCR state governments, CPCB) with differing responsibilities and budgetary resources.
 - **Poor enforcement:** Persistent Stubble burning; Unregulated construction; outdated industrial boilers etc.

National Air Quality Index 		
AQI Category	AQI Range	Possible Health Impacts
Good	0-50	Minimal impact
Satisfactory	51-100	Minor breathing discomfort
Moderate	101-200	Breathing discomfort to people with lung/heart disease, children and older adults
Poor	201-300	
Very Poor	300-400	Breathing discomfort to people
Severe	>400	Respiratory illness on prolonged exposure
Monitored Pollutants: PM10, PM2.5, NO ₂ , SO ₂ , CO, O ₃ , NH ₃ , Pb		

Monitoring & Data Limitations

- **Sparse Network:** Many smaller towns and rural areas lack **PM2.5/PM10 monitors**.
- **Lax National Standards:** India's air pollution standards are more relaxed in comparison to WHO's prescribed guidelines.

Pollutant	WHO 2021 Guideline	India (NAAQS)
PM2.5	5 µg/m ³	40 µg/m ³
PM10	15 µg/m ³	60 µg/m ³
NO ₂	10 µg/m ³	40 µg/m ³

Other Challenges:

- **Slow EV penetration in public transport** compared to China's full electric bus fleets (e.g., Shenzhen).
- **Heavy reliance on coal-based energy** due to rising power demand.
- **Public Apathy** and Limited Awareness about chronic health impacts of PM2.5/PM10 exposure.
- MSMEs like small brick kilns and dyeing units **lack funds to afford pollution-control equipment**.

Way Ahead

Parliamentary standing committee recommendations to reduce stubble burning:

- **Price system like Minimum Support Price (MSP)** to guarantee returns when farmers sell stubble.
- **Real-time Mapping of Crop Acreage** and Forecasting of Crop Maturity to assess district-wise crop yields for better planning.
- **Unified National Policy** for integrating agricultural residue into bioenergy generation

Governance & Institutional Measures

- **Strengthen Legal and Institutional Framework:** Give NCAP **statutory backing** and **empower pollution control boards** for strict enforcement.
- **Inter-State & Regional Coordination:** Adopt **airshed-based planning for coordinated action** on stubble burning, transport, and industrial emissions.
 - > Set up regional clean-air councils **modelled on international cross-border pollution frameworks**.
- **Long-Term Planning:** Convert **GRAP-style triggers into year-round**, city-specific clean air action plans.

Economic & Financial Measures

- **Technology-Driven Air Quality Management:** Adopt **predictive systems using AI/ML to forecast** pollution surges and identify real-time sources **allowing preventive rather than reactive action**.
- **Ensure Stable and Adequate Funding:** Increase predictable **budget allocations** and adopt **innovative tools like green bonds** and pollution taxes.
- **De-risk Clean Technology Investments:** Support risk-sharing for renewable energy and EV sectors and reform DISCOM finances to lower investment risks.

Best practices

- **Emissions Trading:** Surat's particulate emissions trading system (2019) cut industrial pollution by 20–30%.
- **Urban Greening:** Tirunelveli's Miyawaki forests reduced PM2.5 **showing micro-forests** on unused land deliver measurable benefits.
- **Sustainable transport:** London's congestion pricing; Paris's car-free days; Amsterdam's 2030 plan to ban fossil-fuel vehicles; Beijing Model- Electrification of major public transport, tightened vehicular emission norms.

Conclusion

India's clean-air journey requires moving from **short-term fixes to sustained, technology-driven and well-coordinated action**. A **multi-sector, data-backed approach** is essential for achieving durable, healthier air for all.

5.3. INDIA'S RENEWABLE ENERGY GROWTH

Why in the News?

In 2025 India's renewable energy sector achieved two historic milestone- renewable energy met **51.5 % of total electricity demand** (July 2025) and **share of installed electricity capacity of non-fossil fuel sources** reached **51 %** (September 2025).

About Renewable energy (RE)

- It is energy derived from natural sources that are **replenished at a higher rate than they are consumed**, e.g., Solar Energy, Wind Energy, Geothermal Energy, Hydro Power, Ocean Energy, Bio Energy.
- India's key targets for renewable energy sector:
 - Nationally Determined Contributions (NDC) target** (Updated in 2022)
 - Achieving **50%** of cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030 (**achieved five years ahead**).
 - Panchamrita targets (for 2030)**
 - Meet **50% of energy requirements** from renewable energy
 - Reach **non-fossil energy capacity of 500 GW**

Status of India's Renewable Energy (RE) sector

- Installed electricity capacity of non-fossil fuel sources** (renewable energy, hydro, and nuclear): 256.09 GW (September 2025) (see infographic for energy-wise breakdown)
- Global Ranking (IRENA RE Statistics 2025):** 4th in Renewable Energy Installed Capacity; 4th in Wind Power; 3rd largest ethanol producer and 3rd in Solar Power capacity.
- Progress:**
 - ~3 times increase in Installed RE capacity (2014 to 2025).
 - ~40-fold increase in Solar energy (2014 to 2025).
 - 30% increase in Wind energy capacity (2020-2024).
 - 13-fold increase in Ethanol blending in petrol (1.5% in 2014 to 20% in 2025).
- Top 5 RE states:** Rajasthan, Gujarat, Tamil Nadu, Karnataka, Maharashtra.

Non-Fossil Fuel		
Category	Installed Generation Capacity (MW)	% Share in Total
RES (Incl. Hydro)	2,47,310	49.4%
Hydro	50,108	10.0%
Wind, Solar & Other RE	1,97,201	39.4%
Wind	53,124	10.6%
Solar	1,27,332	25.4%
BM Power/Cogen.	10,757	2.1%
Waste to Energy	854	0.2%
Small Hydro Power	5,134	1.0%
Nuclear	8,780	1.8%
Total Non-Fossil Fuel	2,56,090	51.1%

Significance of Renewable Energy in India



Meeting global climate commitments

- ▶ **NDC:** Reducing carbon intensity of economy by **45% by 2030**, over 2005 levels.
- ▶ **Panchamrita:** Net Zero by 2070.



Energy Security

- ▶ Cuts dependence on imported coal, oil and gas.
- ▶ Improves trade balance and strategic autonomy.



Economic Gains

- ▶ Attract large investments.
- ▶ Boosts manufacturing.
- ▶ Creates green jobs.



Inclusive Development

- ▶ Decentralised RE (rooftop, farm solar, mini grids) improves energy access.
- ▶ Affordable (Solar tariffs fell to ₹2-₹2.5 per kWh).

Reason behind growth in Renewable Sector

- High potential:** E.g., Tropic of Cancer passes through many states, giving **300+ sunny days annually**; High wind energy potential due to long coastline and elevated terrains etc.
- Supportive Government Policies and Initiatives:**
 - National policies for long term planning:** E.g., Offshore Wind Energy Policy, 2015; National Wind-Solar Hybrid Policy, 2018; National Policy on Biofuels, 2018 etc.



**Read our Weekly
Focus coverage
on India's Energy
Security**

- **Development of Infrastructure: Green Energy Corridor (GEC)** scheme for transmission infrastructure; **PM Surya Ghar Muft Bijli Yojana** providing subsidized rooftop solar panels installation (10 Lakh Installations as of March 2025) etc.
- **Regulatory & Market Reforms:**
 - > **Renewable Purchase Obligation (RPO):** Mandates that **states and utilities must procure a minimum percentage** of their electricity from **renewable sources**.
 - > **Indian Carbon Market (2024):** A **carbon trading platform with Carbon Credit Trading Scheme (CCTS)**, notified under Energy Conservation Act, 2001 to incentivize **low-carbon power generation**.
 - > **Green Open Access Rules (2022):** Allow **large consumers to buy renewable energy** from any source nationwide, bypassing local distribution constraints.
- **Dedicated schemes:** National Green Hydrogen Mission (NGHM) with target of **5 MMT of Green Hydrogen** production annually by 2030; **Ethanol Blended Petrol (EBP) Programme** with target of 20% ethanol blending in petrol by 2025-26; **National Solar Mission (NSM)**; National Bioenergy Programme (2021–2026); Waste to Energy Programme; etc.
- **Accelerating investment:** **100% FDI** allowed under automatic route; RE classified as a sub-category under **RBI's Priority Sector Lending; Sovereign green bonds etc.**
- **Domestic manufacturing of components:** Schemes like Production Linked Incentive (PLI) Scheme for High Efficiency Solar PV Modules, Scheme for “Development of Solar Parks and Ultra Mega Solar Power Projects” promote domestic manufacturing.
 - > E.g., India's solar module manufacturing capacity jumped **from 38 GW to 74 GW during FY 2024–25**.
- **International collaborations:**
 - **International Solar Alliance (ISA):** Launched by India and France at COP21 in 2015, brings together 100+ countries to **mobilise \$1 trillion in solar investments** to make clean energy affordable.
 - **One Sun, One World, One Grid (OSOWOG):** Launched by India at the ISA Assembly in 2018, **aims to create a global interconnected solar grid**.

Challenges in realizing true potential of Renewable sector

- **Financial & Investment Barriers:**
 - **Low annual investment:** India requires **around USD 10 trillion by 2070 for its clean-energy transition**.
 - **DISCOM financial distress:** DISCOMs suffer from poor **billing efficiency, revenue gaps, tariff delays** affecting working capital and debt servicing for RE companies.
- **Infrastructure Challenges**
 - **Intermittency of Renewables:** E.g., Solar peaks during **the day but not at evening peak demand** forcing states to backstop solar with coal.
 - **Transmission Bottlenecks:** E.g., in states like Tamil Nadu with high wind capacity, power often cannot be fully evacuated because the grid network is congested.
 - **Limited Storage Capacity:** Battery **storage cost remains high** (~₹5–6 per unit storage cost), making round the clock renewable power costly.
 - **Land acquisition:** Renewable energy projects **require large tracts of land, leading to delays, high costs, and conflicts** with local communities as well as **food security concerns**.
 - > E.g., Solar can need **300 times as much space as nuclear energy** (Economic Survey 2023-24).
- **Manufacturing Constraints**
 - **Heavy dependence on imports:** India imports **80–90% of solar cells and modules from China** due to limited domestic **polysilicon/wafer manufacturing**.
 - **Global Supply Chain Disruptions:** Production and processing of many critical minerals are geographically concentrated, making global supply vulnerable to several risks.
 - > E.g., China controls **60% of rare earth production, 60% of critical minerals production and 80% of the processing worldwide**.
- **Other issues:** Poor enforcement of RP targets; Inconsistent net metering rules; Environmental concerns related to extraction of minerals

Way Ahead

- **Enhance DISCOM reform:** Focus on loss reduction, smart metering, tariff rationalisation to improve payment discipline.
- **Build Domestic Manufacturing Capacity:** India must **expand manufacturing of solar modules, wind turbines, batteries and green hydrogen** components through **PLI schemes** to reduce import dependence.
- **Promote Advanced Storage Technologies:** Large-scale storage solutions like **ACC batteries, pumped-storage hydropower and hybrid systems** must be expanded.
- **Unified renewable energy law:** It can ensure **clear rules for Power Purchase Agreement** enforcement, land acquisition, and grid access to boost investor confidence.
- **Increase Financial Mobilization:** Explore diversified funding sources like **green bonds, multilateral financing, blended finance**, and private investments.
- **Plan for a just transition in coal-dependent regions:** through Jobs, reskilling, local RE manufacturing.
- **Improve Grid Infrastructure and Renewable Integration:** Modernize transmission corridors **and enable smart-grid systems** through AI/ML technologies.

5.4. SEED MANAGEMENT

Why in the News?

The Department of Agriculture and Farmers Welfare has released the Draft Seeds Bill, 2025.

About Draft Seeds Bill, 2025

- The Proposed Legislation seeks to replace the **Seeds Act, 1966**, and **Seeds (Control) Order, 1983**,
- **Objective:** It will regulate the **quality of seeds and planting materials** available in the market.

Key Highlights of the Bill

- **Mandatory Registration:** No seed, except farmers' variety and the one produced exclusively for export purposes, shall be sold unless registered.
- **Mandatory boarding on SATHI portal:** It is a national portal created by the Ministry of Agriculture and Farmers' Welfare, in partnership with National Informatics Centre (NIC) to provide complete traceability of the seeds from the point of origin till they reach the farmer.
- **Regulation of the sale of seeds:** Seed varieties to conform to the **Indian Minimum Seed Certification Standards**.
- **Seed Committees: Central and State Seed Committees to be** constituted by the Central Government and State Governments, respectively.
 - **The Central Seed Committee shall** offer advice on matters relating to **seed programming, planning, seed development, production, storage, processing, export, and imports**, etc.
- **Registration Sub-Committees:** To recommend kinds or varieties of seeds for registration after scrutinizing their claims.
- **National Register on Seed Varieties:** It is a **register of all Kinds or Varieties of seed** kept under the **control and management** of the Registrar.
- **Protect Farmer's rights:** protect farmers' rights to save, use, exchange, or sell their seeds (like traditional varieties) without needing brand registration, but they can't sell them under a brand name.
- **Establishment of Central and State Seed Testing Laboratories:** Equipped with Seed Analysts and Inspectors.

Comparative Analysis of Seeds act, 1966 and draft seeds bill, 2025		
Aspect	Seeds Act, 1966	Draft Seeds Bill, 2025
Regulatory Scope	Limited to Notified Varieties, leaving a large part of the seed market unregulated	Covers all commercially sold seed varieties, creating a uniform regulatory landscape
Seed Registration	Registration depended on government notification and wasn't Mandatory for every variety.	Mandatory registration for every seed variety before trade; old notified varieties are deemed registered.

Quality Assurance Mechanisms	Basic standards for germination and chastity, with limited testing structure.	Stricter quality marks, digital labelling, QR traceability, and expanded accredited laboratories.
Farmer Rights	Limited protections; Farmers had no structured compensation avenue.	Farmers can save, exchange, and sell their seeds.
Market Responsibility	Weak oversight allowed limited seeds to circulate.	Stronger monitoring through enrolment, labelling, and traceability conditions.
Penalty	Fines were low and out-dated	Three tier penalty system (Trivial, minor and major) with significantly advanced fines.
Technological adaptation	Did not aim to regard hybrids, GM seeds, or biotechnology advancements.	Incorporates biotech norms, regulated seed imports, and oversight mechanisms for modern technologies.

Overview of India's Seed Sector

- India is the **5th** largest Seed Industry in the World (the USA has the largest industry).
- Seed exports amount to USD 150 million within a global export market valued at USD 15 billion (less than 1%) in 2023-24.
- The **seed programme** follows the **limited generations' system** for **seed multiplication** in a **phased manner**.
 - It recognizes three generations, namely **breeder**, **foundation** and **certified** seeds.

Three Generations of Seeds		
Breeder Seed: Progeny of the nucleus seed of a variety and is produced by the originating breeder or by a sponsored breeder. <ul style="list-style-type: none"> ICAR promotes sponsored breeder seed production programme through National Seeds Corporation/State Farms Corporation of India, Krishi Vigyan Kendras etc. 	Foundation Seed: Progeny of breeder seed. <ul style="list-style-type: none"> Production of foundation seed has been entrusted to the NSC, SFCI, State Seeds Corporation, State Departments of Agriculture and private seed producers. 	
	Certified Seed: It is the progeny of foundation seed.	

Existing Challenges in the Seed Sector

- Low Seed Replacement Rate (SRR):** In India, many open pollinated crops in food grains and oilseeds, the SRR is less than 25%-30%.
- Seed Market Monopoly:** Multinational companies (e.g., Bayer, Monsanto) dominate seed markets, limiting access to local seeds.
- Seed Production Constraints:** Ensuring adequate and timely seed production to meet the requirements of India's highly diverse cropping system remains a major challenge.
- Seed Availability:** Farmers primarily meet their seed requirements through farm-saved seeds, with approximately 65% relying on their own saved seeds or those distributed among them.
- Poor Quality Seeds:** Inferior quality seeds result in **low germination rates** and **suboptimal crop performance**.
- Other:** Inefficient post-harvest seed management, including storage, processing, and distribution, further affects seed quality and availability.

Know the term

- **Seed Replacement Rate:** It is the percentage of area sown out of the total area of crop planted in the season by using certified/quality seeds other than the farm-saved seed.

Key Initiatives Taken

- Sub-Mission on Seeds & Planting Materials:** Seeks to ensure the production and multiplication of high-yielding, certified/quality seeds
- National Seeds Policy, 2002:** It emphasizes seed production, quality assurance and seed distribution and marketing, etc.

- **Protection of Plant Varieties and Farmers' Rights Act, 2001:** The legislation provides for the establishment of an effective system for the protection of plant varieties, the rights of farmers and plant breeders, and encourages the development of new varieties of plants.
- **Seed Village Programme (Beej Gram Yojana):** Improve farmers' saved seed quality.
- **National Seed Reserve:** Maintains reserves to ensure seed availability during climatic disruptions.
- **Other:** National Seeds Project Phase-III (NSP-III), Seed Management 2.0 system, etc.

Way Forward

- **Promoting Biotech-Innovation:** For high-yielding, stress-tolerant, and nutrient-rich seed varieties to address climate change and food security concerns. E.g. ICAR recently developed **two genome-edited rice varieties (DRR Rice 100 (Kamala), based on Samba Mahsuri, and Pusa DST Rice 1, based on MTU 1010).**
- **Establishing Community Seed Banks:** It will help in preserving and promoting local seed varieties.
- **Identify seed hubs:** They can produce and supply seeds to farmers in specific areas.
 - This approach not only minimizes transportation costs but also helps reduce the overall cost of seed supply for farmers.
- **Increasing SRR:** Timely replacement of seeds to progressively increase the SRR, particularly for regionally important varieties
- **Improve Seed Quality Assurance:** Upgrade seed testing laboratories, promote digital traceability, and enforce strict quality standards to ensure high germination and varietal purity.
- **Other:** Establishing safe storage facilities to ensure post-harvest management of seed, etc.

Conclusion

The Draft Seeds Bill, 2025 seeks to strengthen India's seed system by improving quality standards, ensuring farmer access to affordable certified seeds, and promoting innovation. By tackling persistent gaps in regulation and seed availability, it can enhance productivity and support a more resilient agricultural sector.

5.5. VULTURES

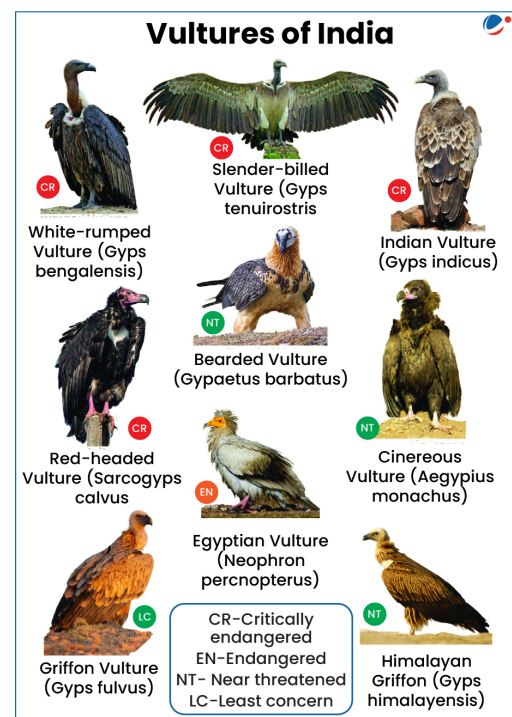
Why in the news?

Wildlife Institute of India (WII) releases its 1st Pan-India Assessment and Monitoring of Endangered Species (Vultures).

Major Findings

This first nationwide assessment estimated breeding adult populations focusing on **four Critically Endangered species** i.e., **the White-rumped, Indian, Slender-billed, and Red-headed vultures.**

- **Geographic Scope:** The survey documented vulture presence at 216 sites across 17 states.
- **Contraction of Range:** It revealed **absence of nesting in nearly 70% of historical sites** previously known across the country.
- **Dependence on Protected Areas (PAs):** PAs hold **54% of all documented nests.**
- **Species specific findings**
 - **Indian Vulture (*Gyps indicus*):** Found mainly in Madhya Pradesh & Rajasthan (largest at Mukundra Hills); reliant on secure cliff sites
 - **White-rumped Vulture (*Gyps bengalensis*):** Concentrated in Kangra Valley, Himachal Pradesh
 - **Slender-billed Vulture (*Gyps tenuirostris*):** Breeding mostly in Upper Assam
 - **Red-headed Vulture (*Sarcogyps calvus*):** Found in Madhya Pradesh; depends on dense, undisturbed forests; population extremely low and fragmented.



Vultures

- Large carrion-eating birds, mainly found in tropics and subtropics; 9 species in India.
- **Significance:** Clean environment by consuming carcasses, controlling wildlife diseases.
- **Conservation Status:** Protected under **Schedule I, Wildlife Protection Act, 1972.**
- **Threats:** Habitat loss, food scarcity, diclofenac poisoning, electrocution.
- **Conservation Initiatives:** Ban on diclofenac, ketoprofen, aceclofenac; Action Plan for Vulture Conservation (2020–25)

5.6. NEWS IN SHORTS

5.6.1. INDIA-BOTSWANA CHEETAH TRANSLOCATION PACT

India-Botswana formally announced translocation of **eight cheetahs** to India as a part of 'Project Cheetah'.

About Project Cheetah

- **About:** Launched in **2022**, Project Cheetah aims to **translocate African cheetahs** to India. It is the **world's first intercontinental large wild carnivore translocation initiative**.
 - In **2022**, **eight cheetahs** from **Namibia** were translocated to **Kuno National Park**, followed by **twelve cheetahs** from **South Africa** in **2023**.
- **Implementing agency:** National Tiger Conservation Authority (NTCA).
 - NTCA is a **statutory body** under the Ministry of Environment, Forests and Climate Change constituted under enabling provisions of **Wildlife (Protection) Act, 1972**, as amended in 2006.
- **Cheetah Project Steering Committee:** Established by NTCA in 2023 to oversee, evaluate, and advise on implementation of Project Cheetah.
- **It operates under** the umbrella of **Project Tiger (renamed as Project Tiger and Elephant from 2023-24)**.

Significance of Re-introducing Cheetah in India



Ecological Restoration: Cheetahs are apex predators and play a vital role in maintaining overall health of grassland ecosystems.



Biodiversity Conservation: As a flagship species they help conserve its prey base and protect other endangered grassland and semi-arid species.

About Cheetah (*Acinonyx Jubatus Venaticus*)

- World's fastest Mammal and the only large carnivore to be **extinct in India (1952)**.
- Unlike other big cats (lions, tigers, leopards, and jaguars) cheetahs don't roar.
- **Two Species** of Cheetahs exists:
 - **African Cheetah** (IUCN Status- Vulnerable).
 - **Asiatic Cheetah** (IUCN Status- Critically Endangered).
- Found only in the **arid regions of eastern Iran in Asia, and in Africa**.

5.6.2. SUPREME COURT DIRECTIONS FOR TIGER RESERVES PROTECTION

These directions were issued to address **increasing Human-Wildlife Conflicts (HWCs)** due to habitat degradation, unregulated tourism, and corridor fragmentation.

Directions issued by the Supreme Court

- **Tiger Safari Restrictions:** Permitted **only on non-forest or degraded forest land** in buffer zones;
 - No safaris in **core areas or designated tiger corridors**.
 - **Night Tourism:** To be banned in **core/critical** tiger habitats.
- **Prohibited Activities:** Commercial mining, polluting industries, major hydro projects, exotic species introduction, low-flying aircraft or commercial firewood extraction **barred in buffer/fringe areas**.
- **Eco-Sensitive Zones (ESZs):** All reserves must notify ESZs as per the **2018 Ministry of Environment's guidelines** under the **Environment Protection Act, 1986**.

- **Tiger Conservation Plans (TCPs): States** must prepare/revise TCPs within stipulated timelines;
 - **Core and buffer areas** to be notified **within six months**.
- **Natural Disaster Status:** States to treat **HWCs as a natural disaster** to ensure rapid relief.
 - **Compensation:** Uniform ex-gratia of **₹10 lakh** for human deaths due to HWCs.
 - **Draft HWC mitigation guidelines:** To be drafted by the **National Tiger Conservation Authority (NTCA)** within six months, and **to be implemented by all States**.

About Tiger Reserves

- **Definition:** Legally protected areas under **Project Tiger (1973)** for long-term conservation of tigers, comprising
 - **Core Areas (critical habitat):** Inviolable; no tourism or commercial activity.
 - **Buffer Areas (sustainable use zone):** Regulated eco-development; limited tourism.
- **Declaring Authority:** **NTCA** (a statutory body under the **Wildlife (Protection) Act, 1972**) **approves and notifies** reserves; **States propose sites**.
- **Total Reserves:** 58 tiger reserves across India.

5.6.3. SC RECALLS JUDGMENT STRIKING DOWN EX POST FACTO ENVIRONMENTAL CLEARANCES

The Vanashakti judgment had previously barred the granting of ex-post-facto environmental clearances (EC).


- Under Vanashakti Judgment, court had struck down a **2017 notification and 2021 Office Memorandum (OM) of Centre**, which in effect recognised the grant of ex post facto ECs.

Reasoning for Recalling the Vanashakti Judgment:



- **Legal precedents ignored:** CJI observed that the Vanashakti judgment was rendered without taking notice of previous judgments of coordinate benches, thus rendering it per incuriam.
 - **E.g. D Swamy vs Karnataka State Pollution Control Board (2021)** held that post-facto EC can be granted in exceptional cases
 - **SC in Alembic Pharmaceuticals Ltd (2020)** while discouraging post-facto EC, had regularized existing post-facto ECs with directions to pay monetary penalties.

Environmental Clearance (EC) in India

EC is required in India for projects that can significantly impact the environment.

EIA Notification, 2006
 Lists over 39 types of activities (mining, infrastructure, power plants, etc.) that need EC prior to start of a project.

Categorization of Projects

 Category A projects: Considered at the Central level in the Ministry of Environment, Forest & Climate Change (MoEF&C).	 Category B projects: Handled at the State level by the State/UT Environmental Impact Assessment Authority (SEIAA).
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- **Economic costs:** Adhering to the Vanashakti ruling would lead to the **demolition of completed public projects**.
 - Also demolishing large structures may cause more pollution e.g. debris, reconstruction emissions etc.

About Ex-Post Facto Environmental Clearance:

- An ex-post facto EC essentially **allows a project proponent to continue with its project without obtaining an EC** prior to project commencement.
- **The Environmental Impact Assessment (EIA) Notification, 2006**, clearly requires '**prior environmental clearance**' before a project can start.
- Previously, in **Common Cause v. UoI & Ors. (2017)**, Supreme Court held that the concept of ex post facto or **retrospective environmental clearance** is completely alien to environmental jurisprudence.

5.6.4. DUMPSITE REMEDIATION ACCELERATOR PROGRAMME (DRAP) LAUNCHED

It is a **year-long**, targeted initiative under **Swachh Bharat Mission-Urban 2.0** to achieve the goals of **Lakshya Zero Dumpsites** by **September 2026**.

- **Swachh Bharat Mission (SBM-U) 2.0** was launched in 2021 to achieve Garbage Free Status for all cities. It also aims at remediation of all **legacy dumpsites** and converting them into **green zones**.

About DRAP

- **Objective:** Prioritize high-impact locations, covering **approximately 8.8 crore MT of legacy waste**.
 - Legacy Waste refers to **aged municipal solid waste** in landfills or dumpsites, it is a mix of partially or completely decomposed biodegradable waste, plastic waste, etc.
 - About **80% of the legacy waste** is concentrated in **214 sites across 202 Urban Local Bodies**.
- **Ministry:** Ministry of Housing and Urban Affairs (MoHUA).
- **Eligibility:** All States/UTs with ongoing legacy waste projects with **priority to** sites containing over **45,000 MT of legacy wastes**.
 - No minimum threshold for eligibility for UTs and North Eastern States.

Dumpsites and its Management in India

- **Status:** Currently, **1,428 sites** are undergoing remediation (1,048 have been fully remediated).
- **Major emissions of primary concern:**
 - **Leachate:** Polluted water that emerges at the base of dumpsite waste.
 - **Landfill Gas:** Mixture of **carbon dioxide and methane** formed because of anaerobic conditions created in dumpsites during waste decomposition.

Key Technologies for Managing Dumpsites	
Biocapping	Biomining
<ul style="list-style-type: none"> • Meaning: Transforming dumpsite from a wasteland to a natural environment like park. • Issues: Generates Leachate and Landfill gases that needs to managed. <ul style="list-style-type: none"> ○ Requires maintenance for atleast 15 years. 	<ul style="list-style-type: none"> • Meaning: Uses microorganisms to extract materials of economic interest. • Benefits: Resolves the issue of leachate and landfill gases. <ul style="list-style-type: none"> ○ No monitoring required once the complete land is reclaimed.

5.6.5. GLOBAL REPORTING INITIATIVE

Recently, the **Global Reporting Initiative (GRI)** launched the **Integrity Matters Checklist**, a UN-endorsed framework designed to align corporate climate disclosures with the United Nations' **net-zero standards**.

About Global Reporting Initiative (GRI)

- It is an **international, non-profit body** that sets the world's most widely used **sustainability reporting framework**.
- **Established:** Founded in **1997**.
- **ESG Disclosure:** GRI Standards enable organizations to report **economic, environmental, and social impacts**.
- **Modular Structure:** GRI Standards follow a three-part system comprising Universal, Sector, and Topic Standards.

5.6.6. LEADERSHIP GROUP FOR INDUSTRY TRANSITION (LEADIT)

Union Environment Minister of India addresses **Leadership Group for Industry Transition (LeadIT)** Industry Leaders' Roundtable at **CoP30, Belém, Brazil**.

About LeadIT

- Launched jointly by **India and Sweden** and supported by the **World Economic Forum** at the **UN Climate Action Summit** in **2019**.

- **Aim:** It was the **first** global high-level initiative aimed to **achieve net-zero carbon emissions from high-emitting industries by 2050**.
- LeadIT drives **just and equitable industry transition** by fostering **public-private partnerships**, mobilising **resources** and supporting **knowledge-sharing**.
- **LeadIT 2.0 (2024-2026)** was adopted at the annual LeadIT Summit at COP28.
- **Members:** 18 member countries and 27 companies.

5.6.7. UAE CONSENSUS

- **Adopted at COP28 (2023):** The UAE Consensus marked the **first-ever Global Stocktake** under the Paris Agreement.
- **Energy Transition:** Urges nations to transition away from fossil fuels in a just, fair, and balanced way.
- **Renewables & Efficiency:** Sets clear goals to **triple renewable energy and double energy efficiency by 2030**.
- **Climate Finance:** Calls for greater adaptation support and financial reforms to help vulnerable nations.
- **Global Goal:** Reinforces the collective aim to **keep 1.5°C** within reach and achieve **net zero emissions by 2050**.

5.6.8. UNEP'S ADAPTATION GAP REPORT 2025

Key Findings

- **Finance Gap:** Developing nations face an **adaptation shortfall of \$310–365 billion/year** by the mid-2030s.
 - **Current Funding:** Global adaptation finance is only **\$26 billion**, far below needs.
- **Implementation Lag:** Most nations have plans, but **execution and quality** remain weak.
- **Urgent Action:** Calls for a **major scale-up** in finance, innovative tools, and stronger resilience planning.
- **India's Scenario:** India has advanced its **National Adaptation Fund** and **State Action Plans**, but **remains highly vulnerable** to heat stress, erratic monsoons, and coastal flooding.

5.6.9. EMISSION GAP REPORT, 2025

Recently “**Emission Gap Report 2025: Off Target**” was released by **UN Environment Program (UNEP)**.

Key Highlights of the Report

- Even the **updated Nationally Determined Contribution pledges under the Paris Agreement**, could lead to global temperature rise by 2.3-2.5 °C by this century.
 - This falls short of Paris agreement's goal of limiting warming to well below 2 °C, while pursuing efforts to cap it at 1.5 °C.
- GHGs emissions rose 2.3% in 2024, reaching 57.7 gigatonnes of CO₂ equivalent.
 - To align with 1.5 °C target, emissions would need to fall by 55% by 2035.
- Highest absolute increase in total GHG emissions was observed in India and China. However, **per capita GHG emission for India** remained **below the world average**.

5.6.10. STATE OF THE CRYOSPHERE REPORT 2025

Released by International Cryosphere Climate Initiative, the report highlights the status and impact of changes in **five key components of cryosphere – Ice Sheets, Mountain Glaciers and Snow, Polar Oceans, Sea Ice, and Permafrost**.

Key Highlights of Report

- **Ice Sheets:** Losses from the Greenland and Antarctic ice sheets have quadrupled since the 1990s.
 - **Impact:** Sea-level rise results in widespread loss of infrastructure, agricultural land, homes, and livelihoods in coastal regions.
- **Polar Oceans:** Rising greenhouse gases are impacting their role as heat/carbon absorbers and drivers of global circulation.
 - **Impact:** Two major ocean current systems, Antarctic Overturning Circulation (AOC) and Atlantic Meridional Overturning Circulation (AMOC), have slowed substantially due to freshwater melt.
- **Mountain Glaciers and Snow:** Glacier ice loss is increasing exponentially worldwide, with 273 gigatons lost per year between 2000 and 2023.
 - **Impact:** Threatens water, food, economic, and political security for billions of people.

- **Sea Ice:** Sea ice extent and thickness have **declined 40-60% at both poles** since 1979.
 - **Impact:** Loss of sea ice drives Arctic amplification, threatens ice-dependent species, disrupts weather and ocean currents and increases sea-level rise risks.
- **Permafrost:** Over 210,000 km² of permafrost has thawed per decade since current warming began.
 - **Impact:** Thawing permafrost **decreases the global carbon budget** and releases vast amounts of ancient organic carbon (three times more than currently in the atmosphere).

5.6.11. GLOBAL COOLING WATCH 2025 REPORT

Report published by the **UN Environment Programme's (UNEP) Cool Coalition**, details a **Sustainable Cooling Pathway** aimed at dramatically reducing projected GHG emissions from cooling by 2050.

Key concerns raised in the Report

- **Surge in cooling demand:** Under a Business-as-Usual (BAU) Cooling Pathway, the **global stock of cooling equipment will more than triple by 2050**, from 22 terawatts (TW) in 2022 to 68 TW.
- **Policy Gaps:** Only 54 nations meet full Sustainable Cooling Pathway standards despite broad policy inclusion.
- **Escalating extreme heat:** Global population exposed to deadly heat stress could rise from 30% today to between 48% and 76% by the end of the century. (IPCC)
 - This gets further amplified by **urban heat island effect, heatwaves**, etc.

Proposed Sustainable Cooling Pathway

- **Passive Cooling:** Reduce cooling loads through passive design, urban planning, and simple measures like doors on refrigerated cabinets to cut costs and emissions.
- **Low-Energy Cooling:** Prioritize low-energy systems such as fans and evaporative coolers instead of, or alongside, air conditioning to cut energy use and costs.
- **Best Energy Efficiency:** Adopt high-efficiency systems with variable-speed compressors and proper maintenance for optimal performance.
- **Rapid HFC Phase-Down:** Select low-GWP refrigerants that maintain system efficiency to reduce direct emissions and support sustainable cooling.

About Beat the Heat Global Initiative

- Joint effort by **UNEP's Cool Coalition and Brazil** (COP30 Presidency) to turn Global Cooling Watch findings into real-world climate action.
- **Objective:** Promotes multi-level governance involving governments, cities, industries, and financial institutions for equitable cooling access.
- **Focus areas:**
 - Passive and nature-based cooling design integration.
 - Public procurement of efficient, low-GWP (Global Warming Potential) technologies.
 - Urban heat planning and inclusive cooling for vulnerable communities.

5.6.12. CLIMATE CHANGE PERFORMANCE INDEX (CCPI) 2026

Recently, CCPI was released which compares climate performance of 63 countries and the EU, which together account for over 90% of global GHG emissions.

Findings for India

- **India ranks 23rd, going from a *high performer* to a *medium one* in this year's CCPI.**
- There is **no national coal exit timeline** and new coal blocks continue to be auctioned.
- **Key demands:** time-bound coal phase-down and eventually a phase-out and redirecting fossil subsidies toward decentralised, community-owned renewable energy

Climate Change Performance Index



Published by
Germanwatch, NewClimate Institute & Climate Action Network (CAN).



Ranking
None of the countries are in the top 3.
Denmark is 4th, followed by UK & Morocco.



Measures performance
It measures climate mitigation performance in four categories of GHG Emissions, Renewable Energy, Energy Use and Climate Policy.

5.6.13. CLIMATE RISK INDEX 2026

Germanwatch releases Climate Risk Index (CRI) 2026.

- It ranks countries based on the human and economic toll of extreme weather events, highlighting the urgency for stronger climate resilience.

About Climate Risk Index (CRI)

- Genesis:** Introduced in 2006 as an annual global climate impact index.
- Key Findings:**
 - Between 1995 and 2024**, 9,700 extreme weather events caused over **8 lakh deaths** and **\$ 4.5 trillion** in damages.
 - India** ranked **15th** in **CRI Rank 2024** and **9th** in **CRI Rank 1995-2024**.
 - India** faced nearly **430 extreme weather events** in three decades, causing **\$ 170 billion losses** and **1.3 billion** affected.

5.6.14. STATE OF FOOD AND AGRICULTURE (SOFA) 2025 REPORT

Food and Agriculture Organization of the United Nations (FAO) released The State of Food and Agriculture (SOFA) 2025 Report.

Key Highlights of Report

- Land Degradation** is defined as a long-term decline in the land's ability to deliver essential ecosystem functions and services.
 - It is driven by natural causes (soil erosion and salinization) and anthropogenic causes (deforestation, overgrazing, unsustainable cropping and irrigation practices etc.)
- Impact of Land Degradation**
 - Yield Loss:** For about 1.7 billion people, crop yields are 10% lower because of human-induced degradation.
 - Asian countries are the most affected** - both because of their accumulated degradation debt and their high population densities.
 - Productivity Loss: Total factor productivity growth**, which reflects technological advancement and efficiency improvements, has **declined since the 2000s**, particularly in the Global South.
 - Convergence with Food Security:** Globally, 47 million children under five years of age suffer from stunting live in hotspots where stunting overlaps with significant yield losses.
 - Ecosystem Impact:** Degradation affects all agricultural systems, **undermining livestock production** in rangelands and – through forest loss driven by agricultural expansion – **disrupting climate patterns and biodiversity**.

Policy Options for Sustainable Land Use

- Regulatory Policies:** Land use zoning, deforestation bans, soil conservation mandates etc.
- Incentive-based Policies:** Uses voluntary and flexible financial rewards for sustainable practices such as payments for ecosystem services.
- Cross-compliance Mechanisms:** Link government subsidies or government support to adherence to environmental standards.
- Land Degradation Neutrality (LDN) Hierarchy** of avoid > reduce > reverse land degradation.

5.6.15. MONTREAL PROTOCOL

Thirty-Seventh Meeting of the parties to the **Montreal Protocol on Substances that Deplete the Ozone Layer (MOP37)** has recently concluded.

- It highlighted **discrepancies in HFCs emissions between** reported and measured data, **lack of atmospheric monitoring stations** in many regions, etc.

About Montreal Protocol

- **Signed:** in 1987
- It is a **global legally binding treaty** to **eliminate production and use of Ozone depleting Substances (ODS)**.
- Implemented **under the Vienna Convention (adopted in 1985)**.
- **Kigali Amendment to Montreal Protocol:** Adopted in 2016 to **phase-down production and consumption of HFCs** (non-ODS but potent greenhouse gases).

5.6.16. MINAMATA CONVENTION

COP-6 to the **Minamata Convention on Mercury** (COP-6) in Geneva agreed to end the use of dental amalgam by 2034. It was also agreed to step up global efforts to eliminate **mercury-added skin-lightening products**.

About Mercury

- **Properties:**
 - Mercury (Hg) is a naturally occurring, **heavy, silvery-white transition metal** with atomic number 80.
 - It is **ductile, malleable**, and is able to **conduct heat and electricity**.
 - It is the **only common metal that is liquid at room temperature**.
- **Sources:**
 - **Natural:** Include **volcanic eruptions**, emissions from the **ocean**, etc.
 - **Anthropogenic:** **Mining** (e.g. during gold mining), **fossil fuel combustion, metal and cement production**, etc.
- **Usage:** Historically used in **thermometers, barometers, fluorescent lighting, certain batteries, and dental amalgams**.
- **Toxicity:**
 - Mercury emitted into the air eventually settles into water or onto land. Once deposited, **certain microorganisms can change it into methylmercury**.
 - > Methylmercury is a highly toxic form that **builds up in fish, shellfish and animals that eat fish (bioaccumulation)**.
 - Even very small amounts of mercury exposure can be highly toxic, affecting the **nervous system, kidneys, skin, eyes, digestive system and immune system**.

Minamata Convention on Mercury



Treaty Details

Legally binding treaty signed in 2013, effective 2017, to protect from mercury.



Convention Origin

Named after Minamata Bay, Japan, site of severe mercury poisoning.



Membership Status

Includes 153 parties, with India as a member.



Secretariat Role

UNEP provides secretariat support, aiding implementation and compliance.

5.6.17. LAKE TURKANA

Recent studies show that fall in water levels of Lake Turkana due to climate change has led to increased earthquake activity in the region.

- When a lake's water level drops, the reduced weight decreases pressure on the Earth's crust, making faults more prone to movement and increasing the likelihood of earthquakes.

Lake Turkana

- It is world's largest permanent **desert lake** and largest **alkaline lake**.
- **Location:** It lies mainly in **Kenya**, with the northern tip extending into **Ethiopia**.
- Over 90% of inflow comes from the Omo River (located in Ethiopia).
- The Lake Turkana National Parks site was inscribed on the World Heritage List in 1997.

5.6.18. VOLCANIC ERUPTIONS IN NEWS

- **Mount Semeru, Indonesia:**
 - **Highest volcano on Java island.**
 - **Part of the Pacific Ring of Fire**, a highly seismically active belt.
 - **Type:** Stratovolcano
 - **Other recent volcanic eruptions in Indonesia:** Mount Lewotobi Laki Laki, Merapi Volcano etc.
- **Hayli Gubbi, Ethiopia:** Eruption sent a massive ash cloud across Red Sea and South Asia, causing a thick ash cloud to reach India leading to diversion of several flights.



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6. SOCIAL ISSUES

6.1. DECOLONISING THE INDIAN MIND

Why in the News?

Prime Minister urges 10-Year national pledge to shed Colonial Mindset rooted in British MP Thomas Babington Macaulay's Legacy and his major campaign of to uproot India from its cultural foundations.

Macaulay's Contribution to Indian Administration

- **Education Policy:** As President of the Committee of Public Instruction, Macaulay broke the deadlock between Orientalists (favoring Indian languages) and Anglicists (favoring English education).
 - His **Minute on Education (1835)** established English as the medium of instruction and prioritized Western literature and science over traditional Indian learning.
 - Aimed to create "**Indian in blood and colour, but English in taste, in opinions, in morals, and in intellect**" as an intermediary class.
 - **Downward Filtration Theory:** Focused on establishing elite English institutions rather than promoting mass elementary education, expecting knowledge to filter down from the educated elite.
- **Legal Reforms:** Appointed first Law Member of the Governor-General's Council (1834-1838) under the Charter Act of 1833.
 - Removed privileges of British settlers who could appeal to Calcutta's Supreme Court.
 - As Chairman of the First Law Commission (1835), **codified Indian criminal law**, leading to the Civil Procedure Code (1859), Indian Penal Code (1860), and Criminal Procedure Code (1861).
- **Civil Service:** The Macaulay Committee (1854) introduced merit-based competitive examinations, replacing the patronage system.
 - Emphasized general academic education, preferring university graduates from Oxford or Cambridge.
- **Social Reforms:** Championed press freedom, abolition of slavery, free trade, free movement of people, and women's property rights.

Key aspects of Colonial Mindset in India

- **Instilling Inferiority:** Macaulay's policy broke India's self-confidence and instilled a "**sense of inferiority**" by discarding thousands of years of India's indigenous science, art, philosophy.
- **Language:** Use of English in courts and universities is seen as aspirational, sometimes hindering access for non-English speakers.
 - E.g., Former CJI D.Y. Chandrachud stated that "English language in its 'legal avatar' is **not comprehensible to 99.9% of the citizens**".
- **Culture:** Colonial rule imposed Western cultural elements including western dress, food, art forms, manners, and values, often projecting Indian knowledge systems as inferior.
 - E.g., Western dress codes are tied to professionalism, especially in corporate sector.
- **Laws & Institutions:** Many colonial laws, such as the IPC (Indian Penal Code), Forest Laws, Sedition etc. and criminal procedures, are rooted in establishing control rather than service.
- **Economic System:** Imported economic models and emphasis on private capital led to impoverishment of a large section of population.
- **Knowledge Systems:** Indigenous knowledge systems forgotten due to large emphasis on imported models of research and innovation.
 - **Ayurveda** and **Siddha** were labeled "unscientific," while While Western medicine accorded the status of official medicine.

Impact of colonial Mindset on India

- **Bureaucratic Overreach:** A pervasive, license-permit style state, intrusive policing, and a command-and-control bureaucracy reflect continuity with colonial governance focused on control rather than facilitation.

- **Seeking foreign validation:** In various fields such as in academia, corporate standards, policy design etc.
- **Colorism:** A deep-seated preference for lighter skin tones persists in Indian society, directly linked to colonial-era racial hierarchies that favored fair-skinned Indians for social recognition.
- **Social differences:** E.g., **Caste stereotypes** were hardened through colonial census as it constructed Indian social identities using categories of convenience.

Cultural movements to tackle Colonial Mindset

- **Arya Samaj (1875):** Swami Dayanand Saraswati founded this movement with slogan "Back to the Vedas, aimed to purify Hinduism, rejected western influences.
- **Ramakrishna Mission:** Established by **Swami Vivekananda in 1897**, it emphasized the universal spirit of all religions and promoted Indian spiritual traditions in the West.
- **Swadeshi Movement (1905–1908):** It focused rejecting Western goods and cultural consumption encouraged indigenous textiles, music, art, theatre etc.
 - Mahatma Gandhi visualized swadeshi as an important tool for India's economic development.
- **The Bengal School of Art:** Spearheaded by **Abanindranath Tagore**, it focused on rejecting Western academic realism, reviving traditional Indian artistic styles and sought inspiration from **Mughal, Pahari art**.
- **Nationalist historiography:** Nationalist historians are scholars who, influenced by nationalism, write history with a focus on national pride, including M.G. Ranade, Radha Kumud Mukherjee, and R. C. Majumdar etc.

Initiatives taken to Remove Colonial Vestiges

- **Repealing Laws:** Government has **repealed more than 1,500 old and obsolete colonial-era laws by** and replaced IPC, CrPC, Evidence Act with Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagarik Suraksha Sanhita (BNSS), and Bharatiya Sakshya Adhiniyam (BSA).
- **National Education Policy (NEP) 2020:** The NEP, 2020, promotes teaching in the **mother tongue** (Bharatiya languages).
- **Symbolic and Nomenclature Changes:** Rajpath in New Delhi was renamed "**Kartavya Path**", Race Course Road being renamed as **Lok Kalyan Marg** (2016) etc.
- **Revival and institutionalization of traditional knowledge:** Establishment of the WHO Global Centre for Traditional Medicine (GCTM) (2022) in Jamnagar, Gujarat.
- India is set to co-host the 2nd WHO Global Summit on Traditional Medicine in New Delhi in December 2025, in collaboration with the World Health Organization (WHO).
- **New Naval Ensign:** A **new ensign** of the Indian Navy was unveiled, which removed the **St George's Cross**.
- **Budgetary Changes:** The **Railway Budget was merged with the annual Union Budget** in 2017, breaking a 92-year-old British-era tradition.
- **Affirming Cultural Pride:** The **Biplobi Bharat Gallery** was inaugurated at Victoria Memorial Hall in Kolkata, dedicated to showcasing the contribution of revolutionaries in the freedom struggle.

Way Forward

- **Following panchpran presented by India's PM:** It includes a resolve of developed India; removing any trace of colonial mindset; taking pride in our legacy; India's strength of unity ;and fulfilling the duties of citizens with honesty.
- **Cognitive Decolonisation:** Through Policy Measures such as promoting Indian languages in the National Education Policy, reviving indigenous knowledge systems etc.
- **Behavioural and economic Shift:** Support a shift towards self-reliant innovation, sustainable lifestyles and community-centred development.
 - E.g., promotion of traditional sustainable practices in Mission LIFE.
- **Cultural Revival:** Revitalization of indigenous festivals and crafts, e.g., International Yoga Day.
- **Promoting pluriversal forms of liberatory thinking:** Creating form of 'epistemic de-linking' and 'epistemic reconstruction' which challenges the dominance of Western knowledge systems by accepting plural thinking.
- **Restoring Pride and Heritage with responsibility:** in line with constitutional values, scientific temper and social justice.

6.2. JUVENILE JUSTICE SYSTEM IN INDIA

Why in the News?

The recently released report “**Juvenile Justice and Children in Conflict with the Law: A Study of Capacity at the Frontlines**” by the **India Justice Report** evaluated the **functioning of the Indian Juvenile Justice System** ten years after enactment of Juvenile Justice (Care and Protection of Children) Act 2015 (JJ Act, 2015).

System of Juvenile Justice in India

- It is based upon **Juvenile Justice (JJ) Act, 2015** (replaced JJ Act, 2000). It was amended by JJ (Care and Protection of Children) Amendment Act, 2021.
- JJ Act, 2015 **consolidates and amends law relating to children found to be in conflict with law** and children in need of care and protection by catering to their basic needs through proper care, development and treatment.
 - It defines **Child** as a person who has not completed 18 years of age, and **Juvenile** as a child below age of 18 years.
 - Child in conflict with law** means a child below 18 years of age who is alleged/ found to have committed an offense.

Key provisions of JJ Act, 2015

- Juvenile Justice Board (JJB):** It mandates **setting up JJBs in every district** to deal with cases of Children in conflict with law.
- Monitoring of Implementation of Act:** By National Commission for Protection of Child Rights (National level) and State Commission for Protection of Child Rights (State level).
- Preliminary Assessment into heinous offences:** In case of heinous offences alleged to have been committed by a child above 16 years of age, JJB shall conduct a preliminary assessment to assess capacity of the child.
 - After preliminary assessment, **Children’s Court may decide** whether the child can be tried as an adult.
- Child Welfare Committee (CWC):** Constituted for every district by State Government to conduct inquiry for declaring fit persons for care of children in need of protection; direct placement of a child in foster care etc.

Issues in Juvenile Justice System

- Inconsistent JJBs:** As of 2023-2024, there were **707 JJBs across 765 districts**. Only 18 states and the UT of Jammu & Kashmir had a JJB in every district.
- Uneven capacity of JJBs:** Of the 470 out of 707 JJBs, **24% (i.e. 111/470) functioned without a full bench**, resulting in weaker child- sensitive adjudications, longer case durations and institutional stays for children.
- Rising Pendency:** 55% of juvenile justice cases filed before 362 JJBs remained pending as of October 31, 2023 due to resource constraints. Also, the **pendency rate varies widely** from 83% in Odisha to 35% in Karnataka.
- Lack of oversight:** Oversight of children in custody fails to meet statutory targets. Despite legal mandate for monthly CCI inspections, **JJBs conducted only 810 inspections** across 14 states and J&K against mandated 1,992.
- High institutionalisation in Observation Homes:** ~83% of total children in custodial facilities were in observation homes, reflecting prolonged pendency of enquiries.
- Weak Access to Information:** There is **no central public repository for juvenile cases** such as National Judicial Data Grid for the adult judicial system.
- Sparse Funding:** Despite available JJ funds, many states **underutilise allocations due to capacity gaps** and **delayed disbursements**, leading to **persistent financial management deficits** and poor outcomes for children.

Important Judicial Pronouncement related to Juvenile Justice System

- Sheela Barse v. UoI (1986):** Supreme Court directed regular visits by District and Sessions Judges to ensure that rights of detained juvenile children were not being violated.
- Sampurna Behura v. UoI (2005):** Supreme Court directed all States/UTs to establish and ensure functioning of JJBs, Child Welfare Committee, to prevent case backlogs.

Way Forward to strengthen Juvenile Justice System

- Recommendations of India Justice Report**
 - Strengthen JJB Capacity:** with adequate personnel in key positions such as judges, superintendents, probation officers, counsellors and legal aid counsel.

- **Leverage technology to enhance efficiency:** Deploy **digital case-management systems** and **centralised database by linking police, court, CCI** to track children in conflict with law and ensuring their best interests.
- **Prioritize Training as force multiplier** and **Conduct periodic evaluations**
- **Establish Fast-track juvenile courts:** to preventing prolonged detention of children awaiting trial.
- **Strict monitoring and accountability mechanisms:** to prevent rights violations, mistreatment, or abuse within juvenile institutions.
- **Juvenile handling:** Establishing **specialized juvenile justice units within police stations** and courts can improve sensitive handling of juvenile cases and ensure that due process is followed.

Conclusion

Strengthening India's juvenile justice system requires **moving decisively from a compliance-driven approach to a child-centric, rights-based framework** that prioritises rehabilitation over retribution. Bridging capacity gaps in Juvenile Justice Boards, leveraging technology for transparency and case tracking, and institutionalising regular training and oversight can significantly improve outcomes for children in conflict with the law.

6.3. CURRICULUM ON AI IN SCHOOLS

Why in the News?

The Department of School Education & Literacy (DoSE&L), Ministry of Education, will introduce **curriculum on Artificial Intelligence and Computational Thinking (AI & CT)** in all schools from Class 3 from the academic session 2026–27.

About AI & CT Curriculum in the schools

- This step is aligned with the **National Education Policy 2020 (NEP 2020)** and falls under the broad ambit of the **National Curriculum Framework for School Education (NCF SE) 2023**.
- **Goal:** Reinforce the concepts of learning, thinking, and teaching, and gradually expand toward the idea of **“AI for Public Good”**.
- **Curriculum Development:** Central Board of Secondary Education (CBSE) has constituted an expert committee to develop the AI & CT curriculum.
- **Implementation:** Teacher training and learning-teaching materials on **National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA) platform**.

What role can AI & CT play in Education?

- **Development of Computational Thinking:** It is a problem-solving approach that involves understanding a complex problem and develops possible solutions in a way that computer can execute.
 - It has **four key techniques** – **decomposition** (breaking down complex problem), **pattern recognition**, **abstraction** (focusing on important information), and **algorithms** (developing step-by-step solution to problem).
- **Foundational Skills:** Introducing AI at young age helps build critical thinking, logical reasoning, and ethical awareness.
 - Students learn to understand and question technology, **developing meta-skills** that are becoming as crucial as literacy and numeracy in the digital age.
- **Enhancing Accessibility and Inclusion:** AI enables learning systems to adapt to diverse needs, particularly for students with disabilities and special needs.
 - **UNICEF's Accessible Digital Textbooks initiative** uses AI to create customizable digital educational tools that accommodate varied learning requirements, ensuring inclusive resources for differently-abled students.
- **Improving Foundational Literacy and Learning Outcomes:** For instance, in Brazil the **Letrus programme employs AI-powered feedback mechanisms** to significantly improve literacy outcomes cutting across socioeconomic barriers.
- **Personalized Learning and Mentorship:** AI allows learning pathways to be tailored to individual strengths and learning speeds, promoting deeper engagement.
 - For example, South Korea's Ministry of Education is developing **AI-powered digital textbooks** calibrated to student proficiency levels, enabling personalized learning while reducing dependence on private coaching.

- **Future Readiness:** As automation transforms industries, AI curriculum ensures the next generation is skilled and adaptable to rapidly changing job market.
 - The World Economic Forum predicts that 40% of core skills required in all jobs will change within five years.

Challenges in Implementation of AI & CT in education

- **The Risk of "Dis-education":** There is a fear that AI is **"systematically taking away the incentive to learn"** if machines can answer questions instantly, leading to a loss of "inter-generational learning"
- **Teacher Upskilling:** Teaching force of over one crore educators with varying degree of experience with technology need reskilling/upskilling.
- **Localization:** AI models are often not available in local languages.
- **Basic Infrastructure:** In India, approximately **9% of schools have only one teacher**, and many schools lack basic amenities like **electricity or computers**.
- **Curriculum Fluidity and Relevance:** There are difficulties in designing a static syllabus for a rapidly evolving technology.
 - For instance, specific skills like **"prompt engineering"** may become **obsolete** within a few years.
- **Psychological Impact:** Students may share things with AI chatbots, raising concerns about emotional dependency and privacy.

Current Initiatives in India

- **'Skilling for AI Readiness' (SOAR) Initiative:** By the Ministry of Skill Development and Entrepreneurship, Initiative has enabled thousands of CBSE schools to offer AI as a **skill subject starting from Class 6 to 12**.
- **National Centre of Excellence in AI for Education:** The Union Budget 2025–26 announced the Centre of Excellence in Artificial Intelligence (AI), aligned with NEP 2020's vision of integrating technology in education.
- **Integration of AI and Digital Learning in Skill India Mission (SIM):** AI and digital learning programs within the Skill India Mission (SIM) to prepare a future-ready workforce.
- **Skill India Digital Hub (SIDH) Platform:** A comprehensive digital platform under MSDE for skill enhancement, offering industry- relevant courses in AI/ML and digital technologies at various expertise levels, along with job and entrepreneurship opportunities to empower Indian youth.
- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 4.0: Launched in 2015 and focuses on short-term training, upskilling, and recognition of prior learning by prioritising futuristic skills like Artificial Intelligence (AI).**
- **YUVA AI for ALL:** The Ministry of Electronics and Information Technology (MeitY), under the **IndiaAI Mission**, has launched first-of-its-kind free course aims to empower **1 crore (10 million)** citizens with foundational AI skills.

Way Forward

- **Curriculum Focus:** Education in AI should be treated as a **basic universal skill** linked to **The World Around Us (TWAU)** and curriculum must be broad-based, inclusive, and aligned with NCF SE 2023.
- **Adopt an "Unplugged" Approach:** For regions with limited infrastructure, the curriculum must be adaptable such computational thinking logic (algorithms) using physical objects rather than digital devices.
- **Interdisciplinary Integration:** AI can be woven into mathematics, science etc. as done in **Ceibal Computational Thinking and Intelligence programme** in Uruguay.
- **Foster "AI Entrepreneurship" and Applied Skills:** For older students (Class 9-12), the focus should shift from literacy to workforce readiness and entrepreneurship.
 - For example, **Kabakoo Academies (West Africa)** The AI provides 24/7 mentoring and feedback on assignments, helping youth build locally relevant businesses.
- **Establish Ethical and Safety Protocols:** As children interact with AI, safety must be the "minimum threshold" defined by policymakers, regarding what data is shared with chatbots.

Conclusion

Embedding AI and Computational Thinking in school education marks a decisive step towards preparing India's children for a technology-driven yet human-centric future. Over time, such an approach can help democratise technological competence, reduce future skill gaps, and enable young learners not just to use AI, but to shape it for inclusive growth and public good in a rapidly evolving world.

6.4. NEWS IN SHORTS

6.4.1. SECOND WORLD SUMMIT FOR SOCIAL DEVELOPMENT



Second World Summit for Social Development concluded in Doha, Qatar with adoption of Doha Political Declaration of the “World Social Summit”.

About Second World Summit for Social Development

- **Convened by:** United Nations General Assembly, through its resolutions 78/261 and 78/318.
 - The 1st World Summit for Social Development took place in **Copenhagen, Denmark, in 1995**.
- **Aim:** To address the gaps and recommit to the **Copenhagen Declaration on Social Development and the Programme of Action** and its implementation, and give momentum towards the implementation of the 2030 Agenda.
- **Major events held on the sidelines of the Summit**
 - **Global Alliance Against Hunger and Poverty:** The first high-level meeting of this Alliance, launched under **Brazil's G20 Presidency in 2024**.
 - **Private Sector Forum:** Specialized forum, co-hosted by the International Organisation of Employers, the UN Global Compact, and UN DESA, focused on how companies can support **inclusive growth**.

10 Commitments

Copenhagen Declaration On Social Development

 Creating an enabling environment	 Eradicating poverty	 Promoting full employment	 Promoting social integration
 Achieving equality and equity between women and men	 Accessing health and education services	 Accelerating development in Africa and in the least developed countries	
 Including social development goals in structural adjustment programmes	 Allocating resources for social development	 Cooperating for social development	

Key highlights of Doha Political Declaration

- **Renewed Commitment to Copenhagen Declaration and Programme of Action.**
- **Monitoring Role:** UN Commission for Social Development, a Commission within the United Nations Economic and Social Council (ECOSOC), retains the primary responsibility for the follow-up and review of the implementation.
- **Three Pillars Reaffirmed:** It centers social development on the 3 mutually reinforcing pillars—**poverty eradication, full and productive employment and decent work for all, and social inclusion**.
- **Financing and Architecture:** Reaffirms the Addis Ababa Action Agenda and welcomes the **Sevilla Commitment** to renew the global financing for development framework.
 - It stresses the urgency of **reforming the global financial architecture** to ensure fair access to development and climate finance, especially for developing countries facing debt distress.

6.4.2. GENERATIONAL BAN ON TOBACCO

Maldives became first country to impose generational ban on tobacco.

About Generational Ban

- **Generational Tobacco Ban, or Lifetime Tobacco Ban,** refers to a policy that permanently prohibits the sale of cigarettes or other tobacco products to anyone born after a specified date—meaning they can never legally purchase tobacco at any age.
- **Other measures used for tobacco control:** Monitoring use, warning about harms, banning advertising, raising taxes, stopping illicit trade, and regulating new nicotine products.



Read our previous coverage on Tobacco use


Status of Tobacco Consumption

Status
Around 80% of the world's 1.3 billion tobacco users live in low- and middle-income countries.

Forms of Tobacco Use
Includes cigarette smoking, waterpipe tobacco, cigars, heated tobacco, roll-your-own tobacco, pipe tobacco, smokeless tobacco products, etc.

Steps Taken
WHO Member States adopted the **WHO Framework Convention on Tobacco Control (WHO FCTC)** in 2003.

183
countries are Parties to this treaty



6.4.3. REPORTS IN NEWS

Reports	Details
International Migration Outlook 2025	<ul style="list-style-type: none"> • Released by: Organization for Economic Co-operation and Development (OECD). • Major Findings: <ul style="list-style-type: none"> ○ In 2023, 225 000 Indian citizens acquired the nationality of an OECD country.
World Urbanisation Prospects 2025 Report	<ul style="list-style-type: none"> • Released by: United Nations Department of Economic and Social Affairs (UN DESA). • Major findings: <ul style="list-style-type: none"> ○ The cities are now home to 45 % of the global population (approx. 8.2 billion). ○ The number of megacities quadrupled from eight in 1975 to 33 in 2025. (A megacity has population of over ten million people) <ul style="list-style-type: none"> > Jakarta (Indonesia) is now the world's most populous city, followed by Dhaka (Bangladesh), Tokyo (Japan) and New Delhi. > India has 44 per cent population living in towns in India. > India, along with six other countries, will add more than 500 million city residents between 2025 and 2050




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7. SCIENCE AND TECHNOLOGY

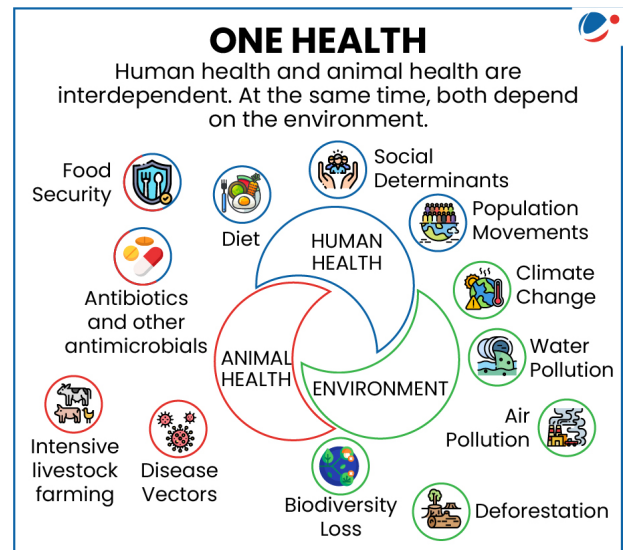
7.1. NATIONAL ONE HEALTH MISSION

Why in the News?

Government to launch National One Health Mission (NOHM).

About National One Health Mission

- **A multi-sectorial initiative** integrating **human, livestock, wildlife and environmental** health to strengthen coordinated surveillance, diagnostics and outbreak response.
- **Vision:** To build an integrated disease control and pandemic preparedness system in India by bringing human, animal and environmental sectors together for better health outcomes, improved productivity and conservation of biodiversity.
- **Approved by:** Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC) in its 21st meeting in 2022.
- **Nodal Agency:** Anchored by Indian Council of Medical Research (ICMR) under **Office of the Principal Scientific Adviser (PSA)**
- **Anchor Institution:** National Institute of One Health, Nagpur.



Key Pillars of One Health Mission:

- **Research and Development:** Driving targeted R&D to develop essential tools such as vaccines, diagnostics, and therapeutics.
- **Clinical Readiness:** Enhancing preparedness in terms of clinical care infrastructure and response capabilities.
- **Data Integration:** Streamlining data and information linkages across the human, animal, and environmental sectors for improved access and analytics.
- **Community Engagement:** Ensuring close community participation to maintain a constant state of response readiness.

Need of the Mission:

- **Zoonotic Risk Mitigation:** It responds to the global evidence that nearly **60% of emerging infectious diseases** are zoonotic in origin.
 - Thereby enhancing **India's capacity for early detection and prevention** of potential spillover events.
- **Pandemic Preparedness:** Establishes **predictive and preventive health-security architecture**, shifting India from a **reactive response model to an anticipatory, systems-based public-health framework**.
- **Rise of Antimicrobial Resistance (AMR):** Misuse of antibiotics in humans, livestock, and aquaculture is accelerating drug resistance.
- **Climate Change Impacts:** Changing climate patterns are expanding the range of vectors like mosquitoes, increasing diseases such as dengue and malaria.
- **Livelihood Protection:** Enhances **livestock health, productivity, and disease resilience**, contributing to higher farmer incomes and greater rural economic stability.
- **Ecosystem Health:** Strengthens **wildlife disease surveillance and biodiversity monitoring**, reinforcing ecological security and addressing environment-linked disease dynamics.
- **Global Alignment:** Aligns India with the **WHO, FAO, WOA, and UNEP One Health Quadripartite**, positioning the country as a regional leader in integrated health governance.

About 'One Health' Approach

- It is an integrated, unifying approach that aims to **sustainably balance and optimize the health of people, animals, and ecosystems**.
- It is particularly important to **prevent, predict, detect, and respond to global health threats** such as the COVID-19 pandemic.

Way Forward

- **Legal Mandate:** Establish a **statutory** or formally notified **inter-sectorial coordination authority** to institutionalize convergence across human, animal and environmental health domains.
- **Capacity Building:** Prioritize systematic training in **veterinary epidemiology, wildlife disease surveillance, genomic science and field diagnostics** to strengthen technical and operational capacity.
- **State-Level Strengthening:** Set up **State One Health Cells** with dedicated financial resources, trained manpower, and technological support to ensure decentralized implementation.
- **Improved Diagnostics and Technological Innovations:** Develop a unified **National One Health Digital Platform** to enable real-time data fusion, risk assessment, and coordinated decision-making across ministries.
- **Climate Change Adaptation:** With climate change potentially influencing the transmission dynamics of diseases, research into its impacts and the development of climate-adaptive control strategies are required
- **Global Partnerships:** Expand strategic collaboration with **WHO, FAO, WOA, UNEP, and regional One Health networks** to align with global standards and enhance cross-border disease preparedness.

Initiatives related to one-health approach:

- **Centre for One Health (CoH) at NCDC:** Coordinates efforts, runs programs (Rabies, Zoonoses, Leptospirosis, Snakebite), and promotes the One Health approach in India.
- **One Health Supporting Unit within Department of Animal Husbandry & Dairying:** specialized team of experts (veterinary, health, wildlife, data) established to implement the national One Health framework in India.
- **BSL-3/4 Lab Network:** A national network of high-security labs for rapid analysis of disease outbreaks across sectors.
- **One Health Joint Plan of Action (OH JPA):** Collaborative framework for 2022–2026 created by the Quadripartite alliance (FAO, UNEP, WHO), and WOA to promote one health approach globally.

Conclusion

The Mission reflects a **shift towards integrated, anticipatory health governance** by unifying human, animal and environmental systems. With sustained coordination and investment, it can position India as a **global model for managing zoonotic, environmental and emerging public-health threats**.

7.2. NATIONAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE 2.0

Why in the News?

Union Minister for Health and Family Welfare launched the National Action Plan on Antimicrobial Resistance (NAP-AMR) 2.0.

National Action Plan on Antimicrobial Resistance 2.0 (2025-29)

- **Vision:** To create a sustainable ecosystem for **humans, animals, plants and environment** by preventing emergence and transmission of AMR through Multisectoral evidence-based '**One Health**' approach.
 - The 'One Health' concept is the recognition that the health of people, animals, and the environment are fundamentally linked together.
- **Key Features**
 - Based on "**Whole of government**" approach with sustained funding within each sector/ department.
 - "**Enforceable Accountability**" Model: Over 20 ministries and departments have submitted specific, time-bound, and **budgeted action plans**.
 - **Integration of One Health Approach**
 - > For the **first time**, NAP 2.0 mandates the **systematic surveillance of antibiotic residues and resistant pathogens in the environment**.
 - > **Joint Working Groups** comprising experts, **National AMR Steering and Monitoring Committee** for resolving inter-sectoral conflicts and ensuring strategic alignment.
 - **Others:** Facilitating data sharing, focus on genomic surveillance, **Prescription Audits**, and **Antimicrobial Stewardship Programs (AMSP)** in hospitals to guide empirical prescribing.



Read our previous coverage on Antimicrobial Resistance

Six Strategic Objectives



Improve Awareness and Understanding of AMR

Through effective communication, education, and training.



Strengthen Laboratory Capacity

For AMR detection, surveillance, and targeted surveillance of antibiotic residues.



Reduce the Incidence of Infection

Through effective infection prevention and control (IPC).



Optimize the Use of Antimicrobial Agents

In humans, animals/fish, and food through uninterrupted access and judicious use of antimicrobials.



Promote Research and Innovations

By identifying priorities for basic and operational research relevant to AMR.



Strengthen Governance, Coordination and Collaborations

On AMR, both intra- and inter-sectoral.

Conclusion

NAP-AMR 2.0 represents a mature, comprehensive strategy. By moving from policy to budgeted action and embedding 'One Health' into the administrative DNA of multiple ministries, India aims to build a resilient defense against the escalating threat of antimicrobial resistance.

7.3. BIRSA-101

Why in the News?

India launched its 1st indigenous CRISPR-based gene editing therapy called BIRSA-101 for Sickle Cell Disease.

More on News

- It has been developed by **CSIR-Institute of Genomics & Integrative Biology (IGIB)**.
- It has been called **BIRSA-101** as it has been dedicated to **Bhagwan Birsa Munda** on his 150th birth anniversary.
- A technology transfer agreement has been signed between **CSIR-IGIB** and **Serum Institute of India** which aims to enable scalable, affordable **enFnCas9 CRISPR**-based therapies for **Sickle Cell Disease** and other genetic disorders.

Sickle Cell Disease (SCD)



Definition: It is a hereditary blood disorder caused by a mutation in the haemoglobin gene.



Mechanism: It leads to sickle-shaped red blood cells that block blood vessels and reduce oxygen delivery to tissues.



Impact: Causes anaemia and may damage lungs, heart, kidneys, eyes, bones, and brain.



India accounts for ~ **14.5% of global SCD births (2023)**. It is mainly prevalent among tribals.



Target: India aims to eliminate it by 2047.

CRISPR Technology and Mechanism

- CRISPR stands for **Clustered Regularly Interspaced Short Palindromic Repeats**
- It is a gene-editing technology to selectively modify the DNA of living organisms.

How does it work?

- CRISPR leverages a **natural defense mechanism of bacteria** to cut DNA at a specific location.
- When bacteria are attacked by a virus, **they record a section of the virus's DNA** in their own DNA.
- Storing part of the virus's genetic code allows the bacteria to **"remember"** it.

- When the same type of virus attacks again, the bacteria use a specific CRISPR-associated protein number 9 (CAS9) to cut the virus's DNA, destroying the virus.

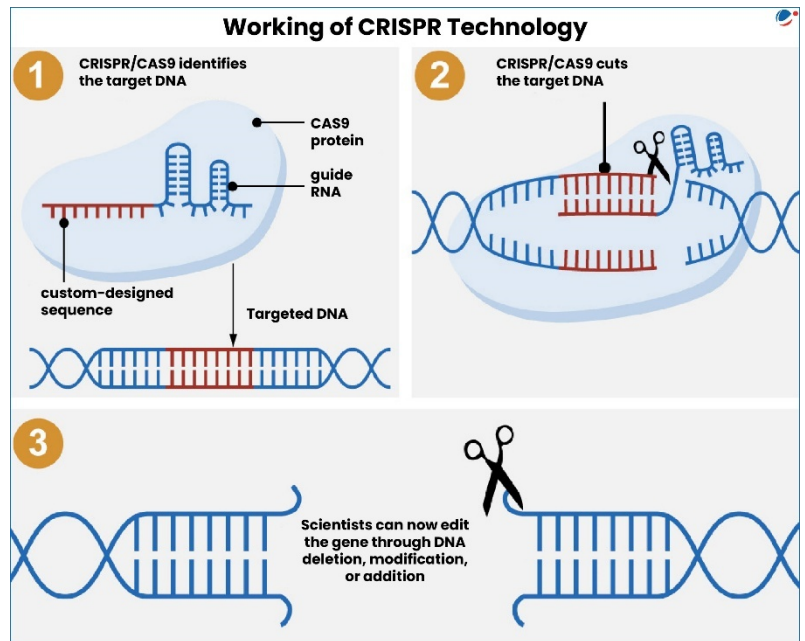
- In the laboratory, scientists use this same CRISPR/CAS9 system to identify and cut a specific DNA sequence.

- Main Components:**

- **Cas9 Protein:** The system uses a Cas protein called Cas9, which acts like molecular scissors to cut DNA.
- **Guide RNA:** A guide RNA tells Cas9 where to cut, and the DNA is cut exactly at the spot chosen by this guide.

- Genome Editing Tools**

- **CRISPR-Cas9:** It uses a small piece of RNA to guide the Cas9 "cutting" protein to the exact spot in the DNA.
- **Homing Endonucleases (Meganucleases):** These are natural enzymes that can find and cut long sections of DNA.
- **Zinc-Finger Nucleases (ZFNs):** They use special protein parts to find the right place in the DNA and then cut it.
- **TALE Nucleases (TALENs):** These tools use two parts that come together to cut DNA at a chosen spot.



Related News

TnpB-Based Technology

Indian scientists at ICAR–CRRI (Central Rice Research Institute) Cuttack have developed a new genome-editing tool for plants using TnpB proteins which has been granted patent.

- **TnpB Protein:** It is a transposon-associated protein that works like a molecular scissor to cut DNA which is much smaller than tools like Cas9 or Cas12a.
 - Transposons/Transposable elements (TEs), also known as "jumping genes," are DNA sequences that move from one location on the genome to another.
- The compact size of TnpB makes it easier to get into plant cells, including through virus-mediated delivery.

GlowCas9

- Scientists from **Kolkata-based Bose Institute**, an autonomous institute under Dept. of Science and Technology (DST), have developed **GlowCas9**.
- It is a CRISPR protein that lights up while performing gene editing.
- It emits light because it is fused with **nano-luciferase fragments from deep-sea shrimp**, which reassemble and emit light when the Cas9 protein folds correctly.

7.4. WHO TUBERCULOSIS (TB) REPORT 2025

Why in the News?

According to the WHO Global TB Report, **India's TB incidence (new cases emerging each year) reduced by 21%.**

More on the News

- The report highlights **TB to among top 10 causes of death** worldwide and leading cause of death from a single infectious agent.
- **Other key findings**
 - **Global: 1.23 million died from the disease in 2024.**
 - > **Global TB Incidence Rate:** Net reduction of 12% from 2015-2024.

- > **Global TB Deaths:** Net reduction of 29% from 2015-2024.
- **India:** India's TB mortality rate has **decreased from 28 per lakh population in 2015 to 21 per lakh population in 2024.**
- > **Global TB Burden** is highest in India (**25% TB patients**).
- > India accounted for more **than 32% of the global** number of people estimated to have developed **MDR/rifampicin-resistant (RR)-TB** in 2024.
- India accounted for **25% of deaths caused by TB** among people with and without HIV.

About Tuberculosis (TB)

- It is a contagious airborne disease caused by a bacterium called **Mycobacterium tuberculosis**. It is preventable and curable.
- **Types based on site of Infection:**
 - **Pulmonary TB:** Most common form affecting the lungs, and is contagious spreading through airborne droplets through coughing or sneezing.
 - **Extrapulmonary TB:** Occurs outside the lungs, affecting organs like lymph nodes, bones, brain, kidneys, or the pleura, less contagious and spreads within the body from lungs.
 - **Spinal TB (Pott's disease):** Affects the spine and can cause severe back pain and mobility issues.
- **Types based on Response to Drugs:**
 - **Drug-sensitive TB:** This form of TB responds well to the standard first-line anti-TB medicines such as isoniazid and rifampicin.
 - **Drug-Resistant TB:** Some forms of TB do not respond to standard medicines.
 - > **Multi Drug Resistant (MDR-TB):** Form of TB that does not respond to rifampicin and isoniazid, the two most effective first-line TB drugs.
 - > **Extensively Drug-Resistant (XDR-TB):** In this type of TB, the stronger medicines may not work.

Factors leading to TB Control in India

- **Key Government Initiatives:**
 - **National TB Elimination Program (NTEP):** Revised National Tuberculosis Control Programme (RNTCP) renamed as NTEP in 2020 aims to eliminate TB in India by 2025.
 - **National Strategic Plan (2017-25)** for Ending TB in the country by 2025.
 - **Pradhan Mantri TB Mukh Bharat Abhiyaan (PMTBMBA):** Launched in 2022, with the objectives to provide additional support to TB patients.
 - **Nikshay Poshan Yojana (NPY):** Launched in 2018 by the Ministry of Health and Family Welfare, provides financial assistance of ₹1,000/- per month to each notified tuberculosis (TB) patient for nutritional support.
- **Addressing Infrastructure Gaps:**
 - **Strengthening Public Health Infrastructure:** Expansion of TB diagnostic centres, microscopy labs and treatment centres under NTEP.
 - **Digital Health & Monitoring Systems:** Launch of **Nikshay Portal**, web-based patient management and surveillance system under NTEP.
 - **Introduction of Newer Therapies:** New treatment regimens like **BPALM** (Bedaquiline + Pretomanid + Linezolid + Moxifloxacin) have transformed TB care, especially for drug-resistant TB.
 - **Better Diagnosis: Universal Drug Susceptibility Testing (UDST)** implemented under the NTEP to ensure every diagnosed TB patient is tested to rule out drug resistance.
 - **Harnessing Advanced Technologies:** The use of **artificial intelligence (AI) and Molecular diagnostic technologies** (nucleic acid amplification test (NAAT) and whole-genome sequencing (WGS)) has strengthened early detection and monitoring of TB cases.

Challenges in Eradicating TB in India

- **Gaps in Diagnosis particularly in Remote and Rural Areas:** Rural regions often lack advanced diagnostic facilities leading to delayed or missed diagnosis. E.g. Active case findings of 250 from 1250 individuals in Gurez valley of Kashmir.

- **Digital divide:** According to the India TB Report, many peripheral health units lack adequate computer infrastructure, reliable internet, or data entry operators, which hinder use of NIKSHAY.
- **Socio-Economic Disparities:** TB disproportionately affects the poor, malnourished, migrant workers, tribal communities and urban slum dwellers. E.g. According to a study over 60% of migrant workers in Delhi live in very precarious conditions.
 - **Looming Malnutrition:** As per a study Starvation related malnutrition has been demonstrated to increase the incidence of TB by six to eight times.
- **High MDR-/RR-TB Case Burden:** E.g. India accounts for more **than 32% of the global** number of people estimated to have developed MDR/RR-TB.
- **Frequent Drug Shortages:** E.g. In 2023, Maharashtra reportedly received only 25,000 tablets of Cycloserine in a month when its requirement was around three lakh tablets.
- **Systemic Factors:** Human resource shortages, TB health visitors, counselor's shortage. E.g. Microbiologists (67% vacancy), Lab assistants (43% vacancy).
- **Environmental and Living Conditions:** In Mumbai 8-10% of the residents in the denser, less light-filled and more poorly ventilated complexes had tuberculosis compared with 1% of residents in a better ventilated project.
- **Others: High burden of co-morbidities like diabetes (In Tamil Nadu, a study found that 25.3% of TB patients had diabetes, and 24.5% had pre-diabetes), natural disasters (floods, droughts), large unregulated private healthcare sector etc.**

Conclusion

TB elimination requires a **sustained, multi-sectoral approach** that strengthens public health infrastructure, ensures uninterrupted drug supplies, addresses social determinants of health and promotes community awareness. A **people-centered, technology-driven and nutrition-focused strategy** focusing on **last-mile delivery, reducing stigma, safeguarding vulnerable populations, and improving coordination** across government departments is essential to make India TB-free.

7.5. GSAT-7R

Why in the News?

GSAT-7R (CMS-03) Satellite was successfully launched aboard the LVM3 (India's **heaviest operational rocket**) from the Satish Dhawan Space Centre, Sriharikota.

More on the News

- CMS-03 is launched by **Indian Space Research Organisation (ISRO)**.
- GSAT-7R represents **Indian Navy's determination** to protect the nation's maritime interests leveraging advanced satellite communication in Defence through **Aatmanirbharta**.

About GSAT-7R (CMS-03) Satellite Communication

- It is a part of India's advanced defence satellite communication **series GSAT-7**.
 - **Satellite Communication** refers to any **communication link** that involves the **use of an artificial satellite** in its propagation path.
 - It is a **form of wireless communication** where satellites serve as relay stations in space, enabling the transfer of data over vast distances.
- **Weight:** ~4,400 kg.
- **Orbit:** Launched into the Geosynchronous Transfer Orbit (GTO), it will eventually settle into Geostationary Orbit (35,786 kilometers above Earth).
- **Coverage:** Provides multi-band telecommunication services across the Indian Ocean Region and Indian landmass up to 2,000 kms from India's coastline.
- **Multiple Communication channels:** The satellite operates on multiple frequency bands, which include UHF, S, C, and Ku. The system enables the transmission of voice, video and data.
- **Lifespan:** 15 years and will replace the multi-band communication satellite GSAT-7/INSAT-4F Rukmini.

- **Purpose:** Strengthens space-based communication, maritime domain awareness, and secure links among Navy ships, submarines, aircraft, and Maritime Operations Centres.

Significance of Indigenous Satellite Communication for Defense



Maritime Surveillance

Enhances real-time monitoring of naval activities in the Indian Ocean Region.



Secure Communication

Provides secure voice, video, and data transmission across long distances.



Inter-Service Integration

Facilitates seamless communication between different military branches.



Strategic Autonomy

Enhances sovereign control over communication and surveillance domains.



Network-Centric Warfare

Supports advanced naval and air operations with high-bandwidth networks.



Future Warfighting

Expands defence satellite capabilities for space-enabled warfare.

Other Satellites in the GSAT-7 Series

- **For Navy:**
 - **GSAT-7 (Rukmini):** Operational since 2013; provides maritime communication and surveillance.
 - It is India's **first officially dedicated military satellite**.
 - Rukmini satellite **reportedly picked up the movement of China's Yuan-class conventional diesel-electric submarines** during the Doklam Crisis.
 - It has **reduced the navy's dependence on foreign satellites like Inmarsat (British)** to communicate with Indian ship
- **For Air Force:**
 - **GSAT-7A (Angry Bird):** Launched in 2018; strengthens network-centric operations and data link connectivity.
 - > It helps the IAF connect various platforms **like aircraft, helicopters, UAVs, Airborne early warning and control (AWACS) aircraft**, missile units and radars.
 - **GSAT-7C:** To be developed and includes ground hubs for real-time, secure communication.
- **For Army:**
 - **GSAT-7B:** To be developed to enhance surveillance and communication in border areas.

Conclusion

Satellite communication has become an **indispensable pillar of India's defence preparedness**, enabling **secure connectivity, real-time surveillance and seamless coordination** across land, air and sea. As threats grow more complex and space becomes a critical warfighting domain, strengthening SATCOM capabilities is essential for safeguarding national security and ensuring strategic superiority.

7.6. NEWS IN SHORTS

7.6.1. NEXCAR19

NexCAR19 therapy was **developed for B-cell blood cancers by ImmunoACT** (a company incubated under IIT Bombay, and Tata Memorial Hospital), supported by DBT and BIRAC.

- **NexCAR19, India's 1st indigenous CAR T-Cell therapy**, was granted market authorization by the Central Drugs Standard Control Organisation (CDSCO) in 2023.

About CAR (Chimeric Antigen Receptor) T-Cell Therapy

- It **modifies immune cells**, specifically T-cells, by turning them into potent cancer fighters known as CAR-T cells.

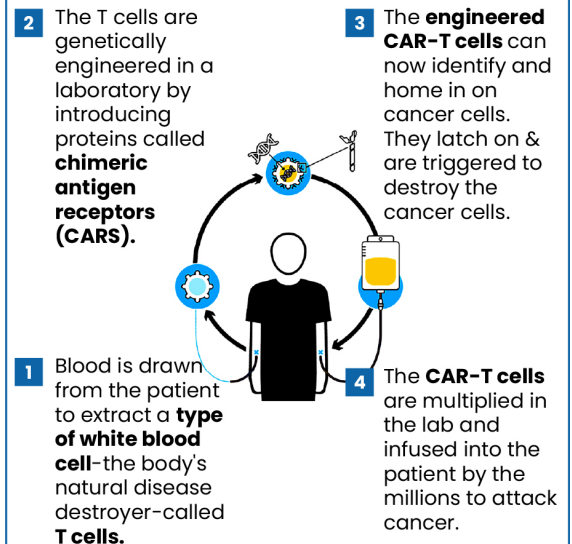
- T-cells are **special cells (types of white blood cells)** whose primary function is cytotoxic, meaning killing other cells.
- This treatment is **designed for specific types of blood cancer** and is given to patients whose cancer has either relapsed or not responded to first-line treatment.

Benefits of CAR T-Cell therapy

- **Short treatment duration:** Unlike aggressive chemotherapy or stem cell transplants, it allows for a faster recovery.
- **Sustained Benefits:** CAR T-cells persist in the body, offering long-term protection against cancer relapse.
- **Accessibility:** Nexcar19 cost is lower compared to imported CAR-T therapies.

Challenges: Therapy for one cancer won't work for another type of cancer, can have negative effects on the nervous system, Cytokine Release Syndrome (Over activation of immune cells), risk of infection, etc.

How CAR-T Works



7.6.2. DEVELOPMENTS IN QUANTUM TECHNOLOGY

- **QSIP (Quantum Random Number Generator System in Package):** It is India's quantum security chip.
 - QSIP provides **quantum-certified randomness** (random numbers from a quantum computer) that is used in cryptographic algorithms.
 - It ensures defence against cyber threats and future quantum attacks.
- **25-qubit QPU:** It is India's first quantum computing chip, developed by Startup QpiAI.
- **Quantum information Scrambling:** It refers to the rapid spread of information across a quantum system, making it inaccessible to local measurements (measuring only a sub-part of the whole system).
 - **Mechanism:** It distributes quantum data among particles through entanglement, hiding information globally rather than erasing it.
 - > Global information means information is distributed across the whole system. The information can only be retrieved by measuring the whole system.
 - **Analogy:** Like a **drop of dye dispersing in water**, information initially stored in one qubit gets distributed among many qubits.
 - **Significance:** Demonstrates a **verifiable quantum advantage** and enhances understanding of quantum technologies



Read our previous coverage on Role of Quantum Computing in National Security

7.6.3. SATELLITE-BASED INTERNET

Elon Musk-owned Starlink has signed an agreement with Maharashtra government to deliver satellite-based connectivity to remote and underserved regions.

Satellite-based internet

- **Definition:** Satellite internet is **wireless broadband delivered via communication satellites** orbiting the Earth.
- **Difference:** Unlike fibre, cable, or DSL, it **does not depend on physical ground-based wiring**.
- **How does it work?** Data is transmitted from a user's dish to a satellite and then to ground stations connected to the global internet.
 - Low Earth Orbit (LEO) satellites, like Starlink, offer faster speeds and lower latency than traditional geostationary ones.



Read our previous coverage on Satellite Internet Services

7.6.4. VANADIUM REDOX FLOW BATTERY

India's largest and first MWh-Scale Vanadium Redox Flow Battery (VRFB) inaugurated at NTPC NETRA.

Flow Batteries, along with **solid state batteries**, are one of the next generation battery technologies and are emerging as an **alternative to lithium-ion** for grid-scale applications, offering **flexibility, longevity, and safety**.

About Next Generation Battery Technologies

- **Flow Batteries:** Flow batteries are powered by **reduction-oxidation (redox) reactions** and involve **two different liquid electrolytes** that pass ions or protons back and forth through a porous membrane.
 - These batteries can **store larger amounts of energy**—as much as the size of the electrolyte cells can contain—and don't use flammable or polluting materials.
 - **Types of Flow Batteries:** Vanadium Redox, Zinc–Bromine, Iron–Salt/Organic systems.
- **Solid-State Batteries:** These use **solid electrolyte solutions**, which don't need a different separator.
 - It **makes them safer** because they are less prone to leakage from damage or swelling in hot temperatures.

Significance of Next Generation Battery Technologies



Suitable for **grid-scale energy storage** due to **independent scaling of power and energy capacity**.



Provides an **alternative to lithium-ion** batteries, as it diversifies material dependency and enhances supply chain security.



Used in power management, pumps, grid energy storage, etc.



Provides **Long-Duration Energy Storage (LDES) solutions**, enhancing renewable energy integration and grid resilience.

7.6.5. ESCAPEDE MISSION

NASA's **ESCAPEDE (Escape and Plasma Acceleration and Dynamics Explorers)** spacecraft launched aboard a **Blue Origin New Glenn** rocket.

About ESCAPEDE Mission

- **Objective:** To investigate how the solar wind interacts with Mars' magnetic environment and how this interaction drives the planet's atmospheric escape.
 - Mars' magnetosphere is made up of leftover magnetic fields from an ancient core and a weaker magnetic field in its upper atmosphere.
- The spacecraft launched into a "loiter" orbit that loops around Earth's **Lagrange point 2**.
 - At Lagrange points, the gravitational pull of two large masses precisely equals the centripetal force required for a small object to move with them.
 - These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.

7.6.6. SENTINEL-6B

The Sentinel-6B satellite was launched from the Vandenberg Space Force Base in California on a Falcon 9 rocket.

About Sentinel-6B Satellite

- Joint mission between the United States' NASA, NOAA (National Oceanic and Atmospheric Administration) and the European Space Agency.
- **Purpose:** It is an **ocean-tracking satellite** with six onboard science instruments that will measure the rising sea levels and its impacts on Earth.

7.6.7. RICIN AND AMMONIUM NITRATE

Recently terror attacks were averted related to Ricin poison and Ammonium Nitrate.

About Ricin

- It is a **protein** found naturally in **castor beans** and can be made from waste residue of castor beans.

- **Lethal poison:** Even 1 mg mixed in food can kill an adult. There is **no antidote or specific treatment** for ricin poisoning.
- It works by getting inside the cells of a person's body and **preventing the cells from making the proteins they need**.

Ammonium Nitrate

- Pure **ammonium nitrate (NH₄NO₃)** is a **white, water-soluble, crystalline substance** with a **melting point of 170°C**.
- It is **not explosive by itself**. However, it is **one of the ingredients used for the manufacture of explosives**.

7.6.8. PROMOTION OF RESEARCH AND INNOVATION IN PHARMA & MEDTECH (PRIP) SCHEME

The Centre has extended the deadline for applying for Promotion of Research and Innovation in Pharma & MedTech (PRIP) Scheme.

About PRIP Scheme

- **Launched by:** the Department of Pharmaceuticals, **Ministry of Chemicals and Fertilizers**.
- **Financial outlay:** ₹5000 crores
- **Aim:** Transforming India into a global powerhouse for R&D in the Pharma MedTech sector.
- **Features:**
 - **Component A:** Strengthening the research Infrastructure with setting up of **Centres of Excellence** at National Institute of Pharmaceutical Education & Research (NIPERs).
 - **Component B:** Promotion of Research and Innovation in the Pharma MedTech sector.



DAKSHA MAINS

MENTORING PROGRAM 2026

DAKSHA MAINS MENTORING PROGRAM 2026

(A Strategic Revision, Practice, and Enrichment Mentoring Program for Mains Examination 2026)



DATE
16 December

DURATION
5 Months

HIGHLIGHTS OF THE PROGRAMME



Highly experienced and qualified team of mentors



Emphasis on score maximization and performance improvement



Scheduled group sessions for strategy discussions, live practice, and peer interaction



Personalized one-to-one sessions with mentors



Well-structured revision and practice plan for GS Mains, Essay & Ethics



Subject-wise strategy documents based on thorough research



Access to Daksha Mains Practice Tests



Continuous performance assessment, monitoring and smart interventions



For any assistance call us at:
+91 8468022022, +91 9019066066
enquiry@visionias.in

8. CULTURE

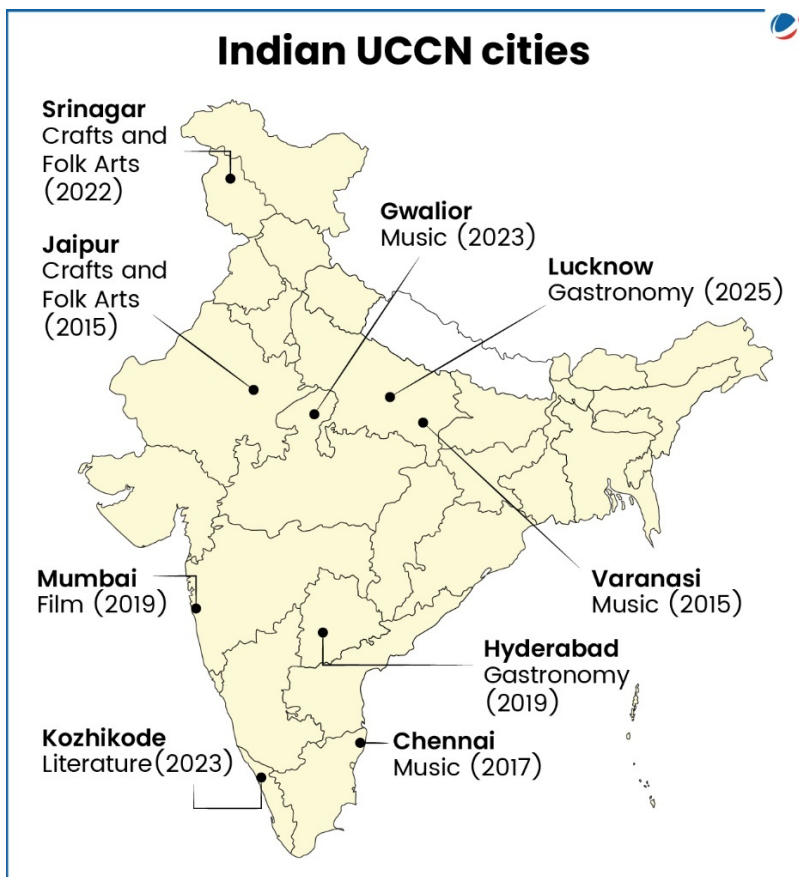
8.1. UNESCO 'CREATIVE CITY OF GASTRONOMY'

Why in the News?

Lucknow has been designated a “Creative City of Gastronomy” by UNESCO, becoming 2nd Indian city after Hyderabad.

More on news

- Nawab Asaf-ud-daulah's decision to relocate the Awadh's capital to Lucknow in 1775 elevated the city to its **esteemed status**.
 - It was nicknamed “**Shiraz-i-Hind**” and “**The Constantinople of the East**” for being a hub of poetry, music, and fine arts.
 - It is also known as the ‘**The Golden City of India**’ for its refinement and epicurean excellence.
- Under the royal patronage**, Bawarchis and rakabdars in **Nawabs' kitchens mastered the slow-cooked Dum Pukht technique** and a range that included kebabs, kormas, biryanis, sheermal, and shahi tukda.
- Other key features of Lucknow:**
 - Architectural Synthesis:** The city's identity is rooted in its unique fusion of **Mughal and Awadhi architectural traditions**.
 - Tangible Assets:** Bara Imambara, Chota Imambara, Rumi Darwaza, Bhul Bhulaiya, etc.
 - > **Nawabi Features:** Use of **fish motif** (especially on gates), chhattars, baradari (twelve-door pavilion), and lakhauri bricks.
 - Intangible Assets:** **Lucknowi cuisine** (a combination of Mughlai and Awadhi customs), Urdu poetry and ghazals, traditional dance like **Kathak**, and the traditional craft of **Chikankari embroidery**.



About UNESCO Creative Cities Network (UCCN)

- Establishment:** The UCCN is recognized as UNESCO's **flagship city programme**, established in **2004**.
- UCCN Application Process:** State's Directorate of Tourism submits a city nomination to the Ministry of Culture, followed by the Government of India selecting the city as the country's official entry. The UCCN makes a **Call for Applications every two years**.
- Objectives:**
 - To **promote culture and creativity driven urban development**.
 - To place **culture and creativity** at the centre of **urban planning** to create a safe, resilient, inclusive and sustainable urban environment for all.
 - Aligns with the Goal 11 of **UN Sustainable Development**.
 - Cities **pool resources and knowledge** by sharing experiences, developing pilot projects, promoting professional and artistic exchange, and contributing to studies and evaluations.

- **UCCN covers eight creative fields:** Architecture, Crafts & Folk Art, Design, Film, **Gastronomy**, Literature, Music and Media Arts.

Conclusion

UNESCO designation is an opportunity to **promote culinary heritage**, **boost training**, **market access for local vendors and small food entrepreneurs**, and **develop food-led tourism circuits**.

8.2. BHAGWAN BIRSA MUNDA

Why in the News?

Recently, the nation observed Janjatiya Gaurav Divas to commemorate the 150th birth anniversary of the freedom fighter and tribal leader Bhagwan Birsa Munda.

About Birsa Munda:

- **Early Life:**
 - Born in **Ulihatu Khunti district**, Jharkhand in 1875.
 - Belonged to the Munda tribe of the Chhotanagpur plateau area, present day Jharkhand.
- **Teachings and Beliefs:**
 - **Monotheism:** Founded a new sect known as the **Birsait**, Birsa preached belief in one God.
 - **Revival of Tribal Faith:** He rejected the influence of Christian missionaries and sought to reform traditional Munda religious practices.
 - **Moral Discipline:** He emphasized cleanliness, hard work, avoiding alcohol and purity in personal and social life.
- **Death & Legacy:**
 - Died in Ranchi Jail due to cholera in 1900.
 - He is remembered as **Bhagwan (God)** and was given the title of **Dharti Aaba (Father of Earth)**.
 - In honor of his legacy, **November 15** is celebrated as **Janjatiya Gaurav Divas (Tribal Pride Day)** across India.
- **Contribution to Colonial Resistance:**
 - **Munda Rebellion:** Birsa Munda launched the **Ulgulan (or Great Tumult) movement** (Munda rebellion) in 1899.
 - **Slogan against British Raj:** “**Abua Raj Setarjana, Maharani Raj Tundujana**” (Let the kingdom of the queen be ended and our kingdom be established.)



About Munda Rebellion

- **Causes of the Revolt**
 - **Permanent Settlement Act, 1793:** It abolished the traditional “khuntkatti” system (joint landholdings/ clan-based communal ownership by forest clearers).
 - **Breakdown of traditional systems and institutions:** Replacement of traditional clan councils with colonial courts, eroding customary justice.
 - **Economic and social exploitation:**
 - > **Beth Begari: Forced/unpaid labour imposed on tribals.**
 - > Dependence on moneylenders for credit, leading to debt and land alienation.
- **Objectives of the Revolt:**
 - **Overthrow British rule** in the region and end colonial oppression.
 - **Expel dikus (outsiders)** - zamindars, moneylenders and other exploiters – from Munda areas.
 - **Restore traditional Munda control over land**, effectively reviving or protecting the khuntkatti system.
 - **Establish an independent Munda state under “Birsa Raj”**, free from British laws.

- **Outcomes of the Revolt:**
 - **Repeal of Begar System:** It reduced 90rganizati forced labour.
 - **Chotanagpur Tenancy Act (1908):** This law prohibits the transfer of tribal land to non-tribal people and protects their ownership rights over land.

8.3. 150 YEARS OF ARYA SAMAJ

Why in the News?











Recently, Prime Minister addressed the **International Arya Summit 2025** as a part of Jyāna Jyoti Festival commemorating **200th Birth anniversary of Dayanand Saraswati and 150 years of Arya Samaj.**

About Arya Samaj

- **Foundation:** Founded by **Maharshi Dayanand Saraswati** in **1875, Bombay.**
 - A Branch of Arya Samaj at **Lahore** was established in 1877.
- **Nature:** A **Revivalist movement** aiming to bring **religious and social reforms** in Hindu with the conviction that reform was to come through **revival of Vedic religion.**
 - The goal of the Arya Samaj has always been, **Krinvento Vishvam Aryam– Make This World Noble.**
- **Organisational Structure of Arya Samaj:** Every branch of Arya Samaj located in villages, towns and cities was a **unit in itself.**
 - Executive committee governed the affairs of Samaj, **comprising of members elected annually by ballot with re-election permissible.**
- **Membership:** Involved acceptance of **ten fundamental tenets** of the Samaj (see infographic), payment of 1% of monthly/yearly income to help its cause and participate in its meetings, etc.
 - Person regardless of **caste conducted these meetings.**
 - The Arya Samaj organization is live and sound in all parts of the world. Arya Samaj has branches in North America, Europe, Asia, Africa and in Australia.

Key Contributions of Arya Samaj

- **Religious Reforms:** It promoted the **monotheistic Hindu order** rejecting the ritualistic excesses and social dogmas of orthodox Hinduism promoting a united Hindu society based on **Vedic teachings.**
 - They pioneered the highly unconventional step of **“Suddhi”** (purification ceremony), which involved the en masse reconversion and reclamation of Hindus who had changed their religion to Islam, Christianity, or other faiths.
 - It helped Moplas of Malabars to reconvert into Hinduism (1923), promoted Vedic Teachings through **‘Kumbh Ved Abhiyaan**, where Vedic Knowledge was disseminated during Kumbh Melas, etc.
- **Social Reforms:** Arya Samaj tried to get untouchables 90rganizati as equal members of Hindu Society before Mahatma Gandhi took up the cause of untouchables.
- **Emancipation of Women:** It established a **network of educational institutions** to equip girls with intellectual knowledge and practical skills.

Fundamental Tenets of Arya Samaj	
	God is the primordial root (source) of all true knowledge.
	God is all Truth, All knowledge, All Bliss. He is Formless, Almighty, Just, and alone is worthy of worship.
	Vedas are the books of true knowledge with prime duty of all Aryas to study and propagate them.
	Aryas should always accept Truth and reject untruth.
	All actions should be performed according to Dharma.
	Objective of this Samaj is to do good to the world: physical, social and spiritual.
	Deal with people with love, righteousness and consideration of merit.
	Work for liquidation of ignorance and promotion of knowledge.
	No one should be content with his own upliftment but should feel good in good of all.
	All men are obliged (unfree) in having to obey the social laws but everyone is free to work for his own welfare.

- E.g., Kanya Mahavidyalaya in Jalandhar, Kanya Pathshala in Dehradun, Hans Raj Mahila Mahavidyalaya in Jalandhar, etc.
- **Contribution towards National Movement:** Although the Samaj consistently stated it was a religious, social, and cultural organization, it was a forerunner in India's national and political awakening.
 - It was reflected through support of Hindi Language; Khadi and Swadeshi; and opposition to salt taxes.
 - Prominent leaders inspired with Arya Samaj included **Lala Lajpat Rai, Bhagat Singh, Ram Prasad Bismil, Madan Lal Dhingra, Swami Shraddhanand, Sachindra Nath Sanyal, Bhai Parmanand, Vinayak Damodar Savarkar, etc.**
- **Educational Reforms:** It promoted integration of spiritual knowledge with modern academic learning through establishment of **Gurukuls** and **DAV (Dayanand Anglo-Vedic) schools**.
- **Humanitarian Reforms:** Samaj offered relief work during crisis before and after independence including the Bikaner Famine (1895) ; Awadh Famine (1907-08); Earthquake in Gujarat (2001), etc.
- **Promotion of Hindi Language:** Samaj established Hindi **newspapers and journals** like Arya Darpan (1878), Arya Samachar (1878), Bharat Sudasha Pravartak (1879), and Desh Hiteshi (1882).

Hyderabad Satyagraha (1938-39)

- **About:** A Satyagraha launched by Arya Samaj against Hyderabad Nizam's oppressive rule that prohibited Arya Samajists to propagate Vedic teachings.
- **Prominent Leaders:** Mahatma Narayan Swami, Chand Kiran Sharda, etc.
- **Significance:** Movement's role was acknowledged by Sardar Vallabhbhai Patel in Hyderabad's liberation and integration into India

Contemporary Relevance of the Arya Samaj

- **Removing Superstitions and Ignorant Beliefs:** Certain **superstitious beliefs** have been existing for such a long time that they have been taken for granted. E.g., Wearing charmed lockets to ward off evil eye.
- **Ending Discrimination:** Caste based discrimination remains a pressing issue even in the present times, even though constitutionally addressed, it is **socially prevalent** in many parts.
- **Sustainable Development:** Present day ideas of **yoga and Environmental consciousness** are based on the pillars of Vedic ideals and lifestyle advocated by the Arya Samaj.
 - **India's Mission LiFE** and **One Sun, One World, One Grid**, are a global movement in this regard.
- **Women Empowerment:** Involvement of women constituting **half of India's workforce** in various domains like Agriculture (Drone Didis), defense (operation of Rafale fighter aircraft), and leadership in science, technology and politics, etc.
- **Education:** Samaj's assertion for education especially for unprivileged is essential to provide a life of dignity to all.
- **Instilling Humanitarian Values:** Developing inspiring qualities in individuals like **empathy, compassion** and **sensitivity** which strengthens brotherhood and promotes peace in society.

Arya Samaj's Educational Programme

- **Dayanand Anglo-Vedic (DAV):** The first DAV school was established in **Lahore in 1886** under the leadership of **Lala Lajpat Rai**.
 - It aims to induce **scientific temperament** in students without uprooting them from their **spiritual, cultural, religious moorings**.
- **Gurukul Kangri:** Founded in **1902** by **Swami Shraddhananda** in Haridwar. Led by traditionalists, it **prioritized Vedic teachings over Western education**.
 - Based on ancient ideal of residential school where teachers and students lived as a family.

Conclusion

Arya Samaj's **timeless principles** and its ability to adapt to changing times along with its emphasis on **equality, education, and rational thinking** aligns with needs of contemporary society, making it a significant force in shaping **India's socio-religious landscape**.

About Dayanand Saraswati (Mula Shankara)

- **Birth:** February 12, 1824, in Morbi, Kathiawar, Gujarat to a Brahmin family.
- **Early Life and Education:** Started education at 5, was invested with the sacred thread at 8, his religious transformation began at 14. He received **Vedic Education** and was **educated in Sanskrit**.
- **Renunciation:** Ran away from home at 21, became a sadhu and wandered for 15 years meeting scores of other sadhus and pandits.
- **Death:** October 30, 1883, Ajmer, Rajputana.
- **Guru:** Swami Virjanand Saraswati who charged him to purge Hinduism of all evils.
- **Key Contributions**
 - **National Movement:** He is credited to have first used the term **swaraj (self-rule)** in 1875
 - **Belief in Vedas:** His call "**Back to the Vedas**" establishes Vedas as the most important constituent of his ideology.
 - **Social Reforms:** Hoisted the **Pakhand Khandini Pataka** at **1867 Haridwar Kumbh Mela** to oppose social evils, blind faith, and superstitions.
 - > **Dr. Sarvepalli Radhakrishnan**, called him as '**a maker of modern India**'.
 - **Women Rights:** Advocated equality of sexes, encouraged women to study Vedas, and carried on a crusade against **child marriage**.
 - > Set down that girls should not marry until age 16 and boys not before age 25.
 - **Religious Reforms:** His work, **Satyarth Prakash** called for **religious revivalism** and advocated for worshipping of **one Supreme God** following simple rituals and recitation of Vedic mantras.
 - **Protection of Cows:** He actively opposed cow slaughter and promoted cow worship as an essential part of Vedic culture.
 - > In 1881, he published "**Gokarunanidhi**", a treatise condemning cow slaughter and established the first **Gaurakshini Sabha in Punjab in 1882**.
 - **Popularising Hindi Language:** He believed Hindi, in Devanagari script, to be the unifying language of India despite his proficiency in Sanskrit and his mother tongue being Gujarati.
 - > **Satyarth Prakash** was written in Hindi.
 - **Education:** In his work, **Satyarth Prakash** he starts with his philosophy of education stressing the parental duty to ensure children education.
 - > Proposed learning **Sanskrit, Hindi and a foreign language** from the age of 5 itself.

Dayanand Saraswati



8.4. SARDAR VALLABHBHAI PATEL

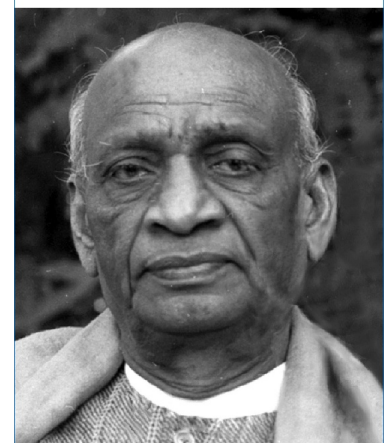
Why in the news?

Recently, Prime Minister paid tributes to Sardar Vallabhbhai Patel on his 150th birth anniversary. Since 2014, the day is observed as **Rashtriya Ekta Diwas (National Unity Day)**.

Brief about the Life of Sardar Vallabhbhai Patel

- **Birth:** Born on October 31, 1875, in **Nadiad, Gujarat**.
 - His father Jhaberbhai, served in Rani Lakshmibai of Jhansi's army and participated in **Revolt of 1857**.
- **Career:** Passed his matriculation in **1897** and then **pursued law in England**. After completing law in 1913, he returned to India and established his practice at **Ahmedabad**.

Sardar Vallabhbhai Patel



• Key Positions Held

- Elected to **Ahmedabad Municipal Corporation** as the **Sanitation Commissioner** in 1917.
- Nominated and elected as the President of newly formed **Gujarat Pradesh Congress Committee** in 1920.
- **Elected President of the Ahmedabad Municipal Board** in 1924.
- Elected as **President of the Karachi session of the Congress** in 1931 where resolutions regarding **Fundamental Rights and Economic Policy** were passed.
- Elected to the **Constituent Assembly** from Bombay on Congress Party ticket.
- Served as **Chairman of the Provincial Constitution Committee** to discuss model **Provincial Constitution**, determining the system and form of provincial government.
- Served as the **Member of Advisory Committee on Fundamental Rights, Minorities and Tribal and Excluded Areas**.
- Served as **Home and Information and Broadcasting Minister in Interim Government**.
- Served as the **first Home and Deputy Prime Minister** of Independent India.

• Honours: He was posthumously awarded the **Bharat Ratna** in 1991.

- **“Ek Bharat Shreshtha Bharat” (EBSB)** initiative was announced on 31 October 2015 during Sardar Vallabhbhai Patel’s 140th birth anniversary, embodies his vision of a united India.
- **Statue of Unity**, was inaugurated in 2018 in Kevadia, Gujarat as an ode to Sardar Patel.

Annexation of Junagadh, Kashmir, and Hyderabad

- **Junagadh:** It was **integrated in 1948** after a **plebiscite**, where majority of people cast their votes in favour of India.
- **Kashmir:** Raja Hari Singh of Kashmir signed the **Instrument of Accession** in return for assistance against Pakistan in 1947.
- **Hyderabad:** Absorbed into Indian Union in **1948** after **Operation Polo** conducted by army under the guidance of Sardar Patel.

Key Contributions of Sardar Vallabhbhai Patel

- **Kheda Satyagraha (1918):** Sardar Patel’s political journey began with his association with Mahatma Gandhi during the Kheda satyagraha.
 - He led the **peasants in refusing to pay taxes due to famine-induced hardships**, marking his first major victory against colonial authorities.
- **Non-Cooperation Movement (1919-20):** Sardar Patel was given the task of **leading the movement in Gujarat**.
 - He, along with **Shankarlal Banker, Umar Sobani, Sarojini Devi**, and **Indulal Yajnik**, popularised the movement in Gujarat by founding the Satyagraha Sabha.
- **Bardoli Satyagraha (1928):** He led the landowners of Bardoli in their resistance against increased taxes.
 - His role elevated him to the pinnacle of national glory and his efficient leadership earned him the title **sardar (“leader”)**.
- **Builder and Consolidator of Modern India:** After Independence, he was tasked with unifying over 560 princely states, covering nearly 40% of India’s territory and population, into the Union of India.
 - Under the Indian Independence Act, rulers of the Princely States were given the option to decide whether they wanted to accede to India or Pakistan or neither.
 - Sardar Patel employed a **combination of diplomatic negotiations, persuasion, and, where necessary, firm administrative measures** to prevent balkanisation.
 - It earned him the reputation of **‘Iron Man’** because of the manner in which he brought about and maintained internal stability.
- **Creation of All India Services:** He envisioned these services as **‘Steel frame of India’** considering officers in administration as service partners working with integrity and honesty.
- **Cooperative Movement:** He led **Gujarat’s cooperative movements** and was instrumental in formation of the **Kaira District Cooperative Milk Producers’ Union**.

Core objectives of EBSB

- Strengthen emotional bonds among citizens,
- Foster national integration through structured inter-state engagements,
- Showcase and appreciate India’s diverse cultures,
- Build lasting partnerships, and
- Encourage mutual learning and sharing of best practices across regions.

Key Values associated with Sardar Patel

- **Co-existence:** He favoured existence of big industries with village and cottage industries for rural and agricultural development ensuring largescale employment.
- **Mediation:** He insisted on adopting the policy of mediation to solve the problem prevailing between industry and labour.
- **Democracy:** He supported equality, liberty and justice and fully supported representative democratic institutions with autonomous existence to function effectively.
- **Firmness in Administration:** To prevent misuse of power by the authority and bureaucracy, promoting the doctrine of intellectual integrity of civil servant.
- **Decentralisation of Power:** He reinforced the idea of Panchayati Raj system and supported establishment of gram panchayats based on selfless service, morality and dedication ensuring quick justice at the grass roots level. E.g., 73rd and 74th Amendment Act.
- **Holistic Education:** He held that education should be fair, right and in the medium of our own language.

Conclusion

Sardar Patel passed away on 15th December 1950, leaving behind an indelible legacy as the ‘Consolidator of India’. 150th Birth anniversary of Sardar Patel is a reminder to his unwavering commitment to national integrity, good governance and public service.

8.5. NEWS IN SHORTS

8.5.1. GURU TEGH BAHADUR JI

November 24, 2025 marks the 350th martyrdom anniversary of Guru Tegh Bahadur.

About Guru Tegh Bahadur ji (1621 - 1675)

- He was born in Amritsar (Punjab).
- He was the youngest child of Guru Hargobind Ji (sixth Sikh Guru)
- He was the 9th Sikh Guru.

Key Contributions

- He founded the town of Chak Nanki in Punjab, later enlarged into the city of Shri Anandpur Sahib.
- He was crowned with the honour of 'Hind Di Chadar'.
- He propagated the message of universal brotherhood and religious freedom.
 - He fought against superstitions, caste-based discrimination, and untouchability.
- His hymns featured in the Guru Granth Sahib stress equality, peace, and courage.

8.5.2. ICC WOMEN’S CRICKET WORLD CUP

In a historic feat, the Indian women’s Cricket Team clinched their first-ever ODI World Cup title after defeating the South Africa in the final.

About ICC Women’s Cricket World Cup 2025

- **First Edition:** 1973 (in England) and won by England.
- **2025 Host Country:** India hosted the current 13th edition.
- **Most number of titles won by:** Australia (7 times)
- It was India’s 3rd final after 2005 & 2017.

8.5.3. NEW GI TAGS

GI Tag	Details
Ambaji Marble	<ul style="list-style-type: none"> Production: Banaskantha district, Gujarat. Key Feature: Milky white colour, natural beauty and durability, used widely in temples, memorials and grand buildings.
Meerut Bugle	<ul style="list-style-type: none"> It is a famous, handcrafted brass wind instrument used in military ceremonies, parades, and bands. It dates back to the late 19th century and is closely linked with India's evolving military tradition. Production: Meerut Material: Handcrafted using high-quality brass and is known for its durability and tonal accuracy. Uses: Regimental bands, military academies, and ceremonial events nationwide.



Read our previous coverage on GI Tags

8.5.4. INDIRA GANDHI PEACE PRIZE

Ex. president of Chile Michelle Bachelet, was conferred with the **Indira Gandhi Peace Prize 2024**.

About Indira Gandhi Peace Prize

- The Indira Gandhi **Prize for Peace, Disarmament and Development** is awarded **annually**.
 - Instituted by the Indira Gandhi Memorial Trust
- It is awarded to a person or organization without any distinction of nationality, race or religion, in recognition of creative efforts towards: Promoting racial equality, and goodwill and harmony among nations, etc.



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9. ETHICS

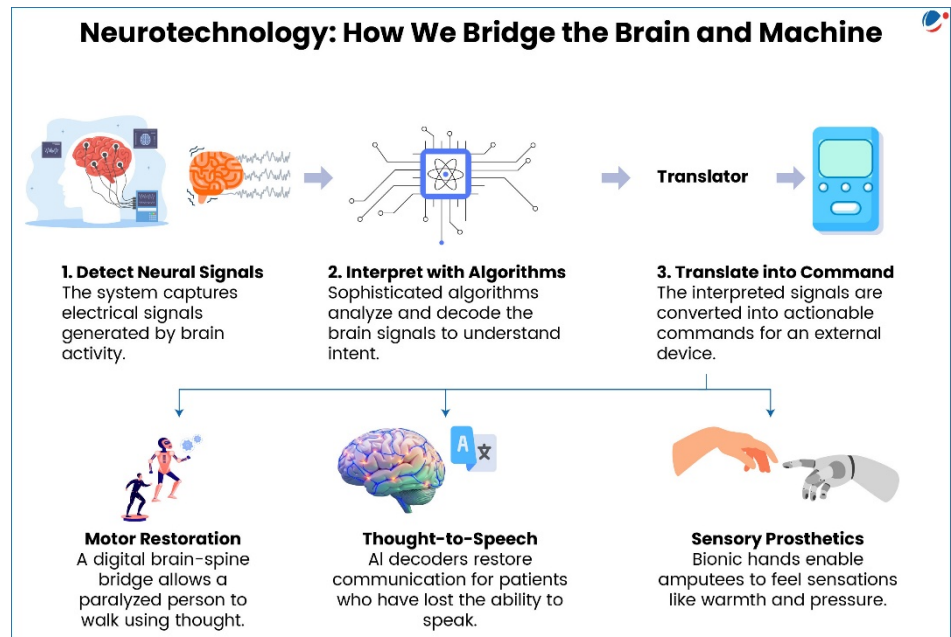
9.1. ETHICS OF NEURO-TECH REVOLUTION

Introduction

Brain or Neuro technology is redefining what it means to interact with the nervous system. The field is expanding rapidly, driven by breakthroughs in artificial intelligence, wireless implants, and minimally invasive surgical techniques. Alongside unprecedented therapeutic benefits, this technological revolution introduces new ethical and legal challenges, particularly around mental privacy, data rights, and cognitive autonomy.

What is Neuro-technology?

- **About:** It is a technology that enables direct interaction between the human nervous system including the brain and digital or mechanical systems. E.g. Brain-computer interfaces (BCIs).
- **Mechanism:** These systems operate by detecting neural signals, interpreting them using algorithms, and translating them into commands for devices such as prosthetics, computers, or communication interfaces.
- **Applications include**
 - **Motor restoration:** Digital brain-spine bridges can enable a man with complete paralysis to stand, walk, and climb stairs using thought-driven movement.
 - **Thought-to-speech:** AI-driven neural speech decoders can restore speech for ALS and paralyzed patients at near-conversational speeds.
 - **Sensory prosthetics:** Osseo integrated bionic hands can enable amputees to feel warmth and pressure while reducing phantom limb pain. Etc.
- **Regulation:** While its medical use is strictly regulated, neurotechnology remains largely unregulated in other areas.
 - Many consumers use this technology without knowing it, via common devices such as connected headbands or headphones, which use neural data to monitor heart rate, stress, or sleep.
 - This highly sensitive data can reveal thoughts, emotions, and reactions, and may be shared without consent.



Stakeholders and their interests

Stakeholder	Core Interests	Ethical Dilemmas
Patients & Persons with Disabilities	Recovery of mobility, speech, memory restoration; pain relief; improved quality of life	Risk of psychological harm, dependence on technology, affordability, misuse of neural data
Medical Professionals & Neuroscientists	Advancement of science; new therapeutic options; professional recognition	Duty of care vs. commercial influence; consent for experimental tech
Tech Companies & Start-ups	Innovation leadership; data ownership; profits; market dominance	Monetization of brain data; unsafe deployment for commercial gain

Governments & Regulators	Public safety; national security; innovation ecosystem;	Balancing innovation with risk regulation; potential for state surveillance
Military & Strategic Security Establishments	Cognitive enhancement for soldiers; brain-controlled weapons;	Escalating arms race; violation of human dignity; risks of coercive use

Ethical Issues

- **Threat to Privacy and Freedom of Thoughts:** E.g. BCIs can infer cognitive states, emotions, or intentions and could influence decisions, undermine free will. Misuse could expose intimate data without consent.
- **Threat to Personal identity and autonomy:** Brain-computer connections and algorithms may shape thoughts and decisions. There is a risk of diluting individuality and reducing autonomy.
- **Monetization of Neural Data:** Corporations could collect and commercialize brain data, analogous to behavioral data today but significantly more intimate.
- **Surveillance:** Neuro-data could enable tracking of attention, emotions, or decision-making patterns for security by State or commercial purposes by MNCs, raising fears of manipulation.
- **Dual-use Risks:** Technologies developed for rehabilitation can be repurposed for military or intelligence applications, such as hands-free drone control or neural monitoring.

Way Forward (UNESCO's 2025 Key Recommendation on the Ethics of Neurotechnology)

- **Cognitive Liberty and Mental Privacy:** Individuals must retain self-determination over their own mental experiences and unauthorized collection, or use of neural data must be prohibited.
- **Human Agency and Accountability:** Neuro-devices must remain under user control ("humans in the loop").
- **Protection of Vulnerable Populations:** Especially children, who may not consent meaningfully.
- **Transparency and Explainability:** Users must understand device functions, risks, and data practices.
- **Non-discrimination and Inclusion:** Prevent unequal access and neuro-based social stratification in lower-middle-income countries and marginalized groups to prevent a **digital divide**.
- **Governance and Regulatory Frameworks:** Neurotechnology not to be used for surveillance and to compel individuals to testify against themselves.
 - **Assessment Mechanisms** (on human rights, economic, etc.); **Regulatory Sandboxes** (for testing and validating technologies) to be developed by the state.
 - States should classify neural data and data allowing mental inferences as "**sensitive personal data**".

Conclusion

Neuro-technology offers transformative medical benefits but raises profound ethical risks. However, at the same time, ensuring mental privacy, human autonomy, equity, and strong global regulation is essential to harness innovation responsibly while safeguarding dignity and fundamental rights.

Case Study Practice Question

A start-up called NeuroLink Solutions has developed a **non-invasive brain-computer interface (BCI)** that can help individuals with paralysis move their limbs using thought patterns. The device has shown remarkable results in clinical trials, enabling users to regain mobility and dramatically improving their quality of life.

The company now plans to **commercially launch the product within six months**, priced at ₹38 lakh per device. It is also finalising agreements with two global tech firms to **access and monetise anonymised neural data** collected from users to "improve AI algorithms." Users will have to agree to data-sharing as part of the product terms.

A senior neurologist, Dr. Meera, a respected figure in the medical community, has joined the start-up as a scientific advisor. She believes that the BCI will be transformative for patients, but she is increasingly uncomfortable that:

- **The pricing will make the device unaffordable for most patients**, especially in low- and middle-income households.

- **Informed consent documents do not clearly explain how neural data will be stored, interpreted, and sold.**
- A representative from a government security agency has approached the company asking for access to neural data for “national security projects,” though their request is unofficial and undocumented.

Meanwhile, the parents of a **12-year-old child with paralysis**, desperate for a cure, are pressuring Dr. Meera to approve early access to the device for compassionate use, even though the child cannot meaningfully provide consent.

The CEO insists that commercialization and large-scale data partnerships are essential to “remain competitive and accelerate innovation before rivals catch up.”

Answer the following questions:

1. Identify the ethical issues involved in this case.
2. From the standpoint of Dr. Meera, analyse the competing values and ethical dilemmas she faces.
3. Suggest a course of action for Dr. Meera that balances scientific progress, patient welfare, and ethical integrity.



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10. SCHEMES IN NEWS

10.1. PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)

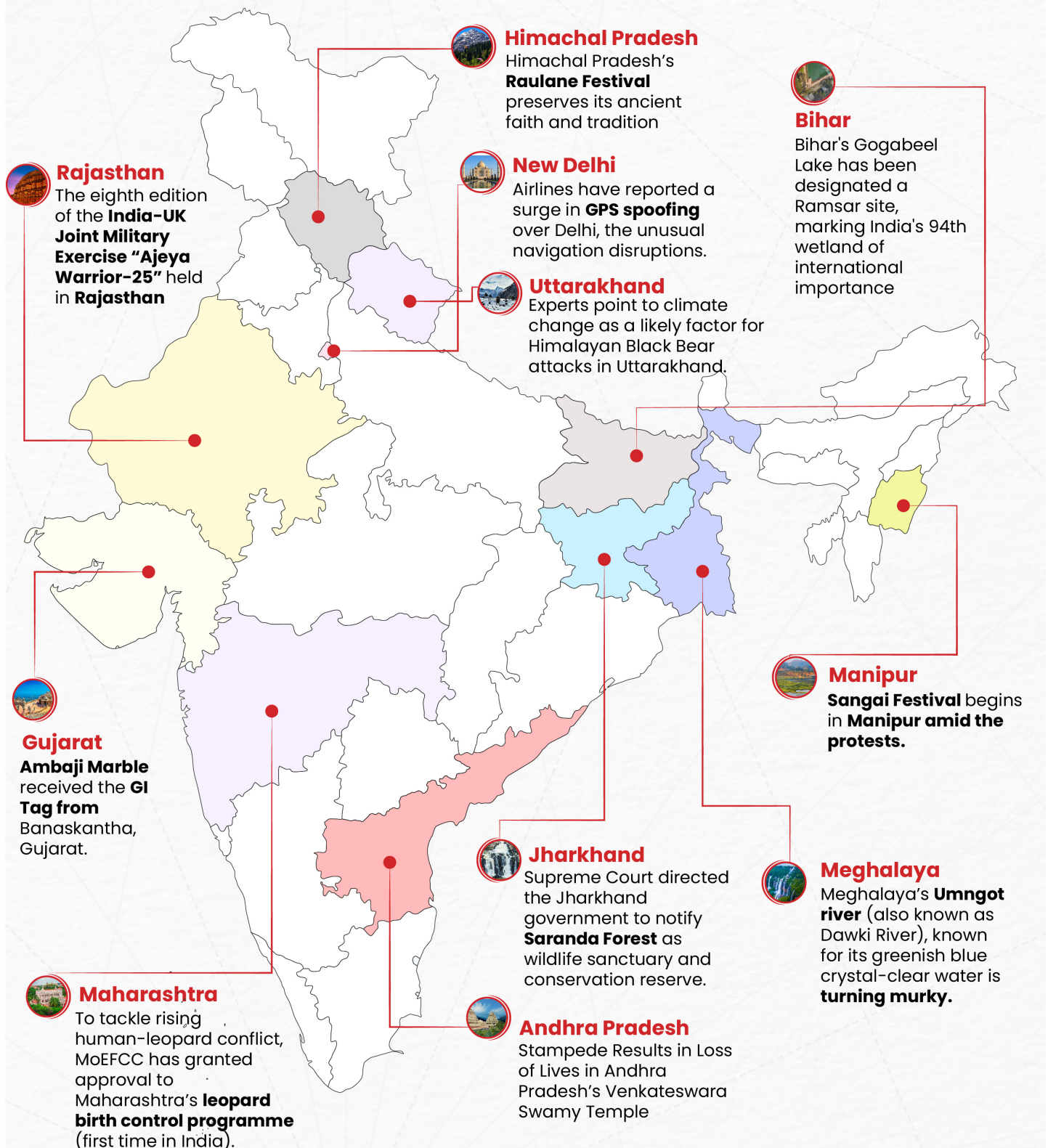
Why in the News?

The Government has revised framework for Pradhan Mantri Fasal Bima Yojana (PMFBY).

Core Objectives of the Scheme	Salient Features of the Scheme
<ul style="list-style-type: none"> To provide financial assistance and support to farmers suffering from crop damage or loss arising out of unforeseen events. To stabilise the income of farmers and ensure continuance in farming. To encourage the farmers to adopt modern and innovative agricultural practices. To ensure crop diversification. 	<ul style="list-style-type: none"> Ministry: Ministry of Agriculture & Farmers' Welfare. Launch: 2016 Type: Central Sector Scheme Implementing Agency: Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW), Ministry of Agriculture & Farmers Welfare (MoA&FW) and the concerned State. Eligibility: All farmers, including tenant farmers and sharecroppers growing notified crops in notified areas. Aim: Strengthening protection for farmers against sudden, localised, and severe crop damage. Premium Payable by Farmers: <ul style="list-style-type: none"> Kharif crops: 2% of sum insured. Rabi crops: 1.5% of sum insured. Commercial and horticultural crops: 5% of sum insured. Difference between premium and the rate of Insurance charges payable by farmers is provided as subsidy and shared equally by the Centre and State. For North-Eastern States (90:10) from Kharif 2020 Coverage of Crops: Food crops (Cereals, Millets, Pulses), oilseeds, annual Commercial / Horticultural crops Risks Covered <ul style="list-style-type: none"> Yield Losses (Standing Crops): Due to natural fire, storms, cyclones, floods, drought, pests & diseases. Prevented sowing/ planting/ germination risk due to deficit rainfall conditions. Post-Harvest Losses: Covers up to 14 days after harvesting for crops left in cut and spread condition against cyclonic/unseasonal rains. Localized Calamities: Covers hailstorms, landslides, and inundation affecting specific farms. Exclusions: Losses arising out of war and nuclear risks, malicious damage and other preventable risks. Key Changes Introduced (to be effective from Kharif 2026) <ul style="list-style-type: none"> New Coverage Added: Crop loss due to wild animal attacks is included as the 5th add-on cover under localised risks category. <ul style="list-style-type: none"> Farmers suffered increasing crop losses due to attacks by wild animals such as elephants, wild boars, nilgai, deer, and monkeys, particularly common in regions situated near forests, wildlife corridors, and hilly terrains. Reintroduced Protection: Paddy inundation restored as a localised calamity cover (removed in 2018). State-Level Identification: States will notify the list of wild animals responsible for crop damage and identify vulnerable districts or insurance units based on historical data. Mandatory Reporting: Farmers must report losses within 72 hours via the Crop Insurance App by uploading geo-tagged photographs.

Places in News

India



Places in News World



Spain

World's first-ever white Iberian Lynx was spotted in Spain.



Greenland

Greenland's Parliament has adopted a legislation that limits foreigners' right to property on the Island



Slovenia

India-Slovenia Joint Committee on Trade reviews bilateral trade partnership.



Bahrain

India and Bahrain hold talks on boosting defense and trade ties.



Guinea Bissau

The African country of **Guinea-Bissau** has fallen under military rule.



Nigeria

Nigeria is set to host the first Indian Institute of Technology (IIT) campus in West Africa.



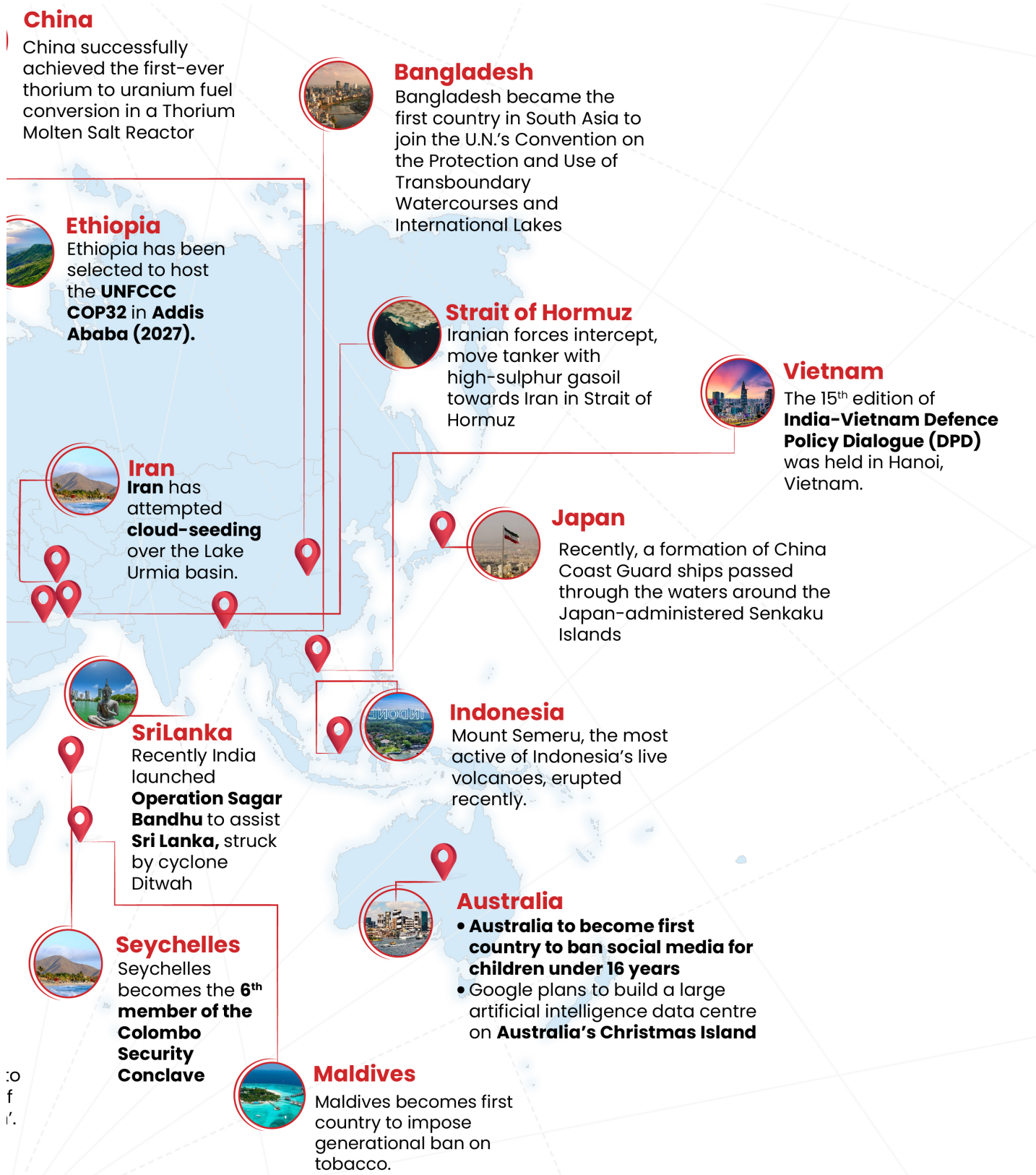
Brazil

India calls Joint Crediting Mechanism (JCM) a key tool for equitable, scalable global climate action at COP30 in Belém, Brazil



Botswana

India-Botswana formally announced translocation of **eight cheetahs** India as a part of 'Project Cheetah'



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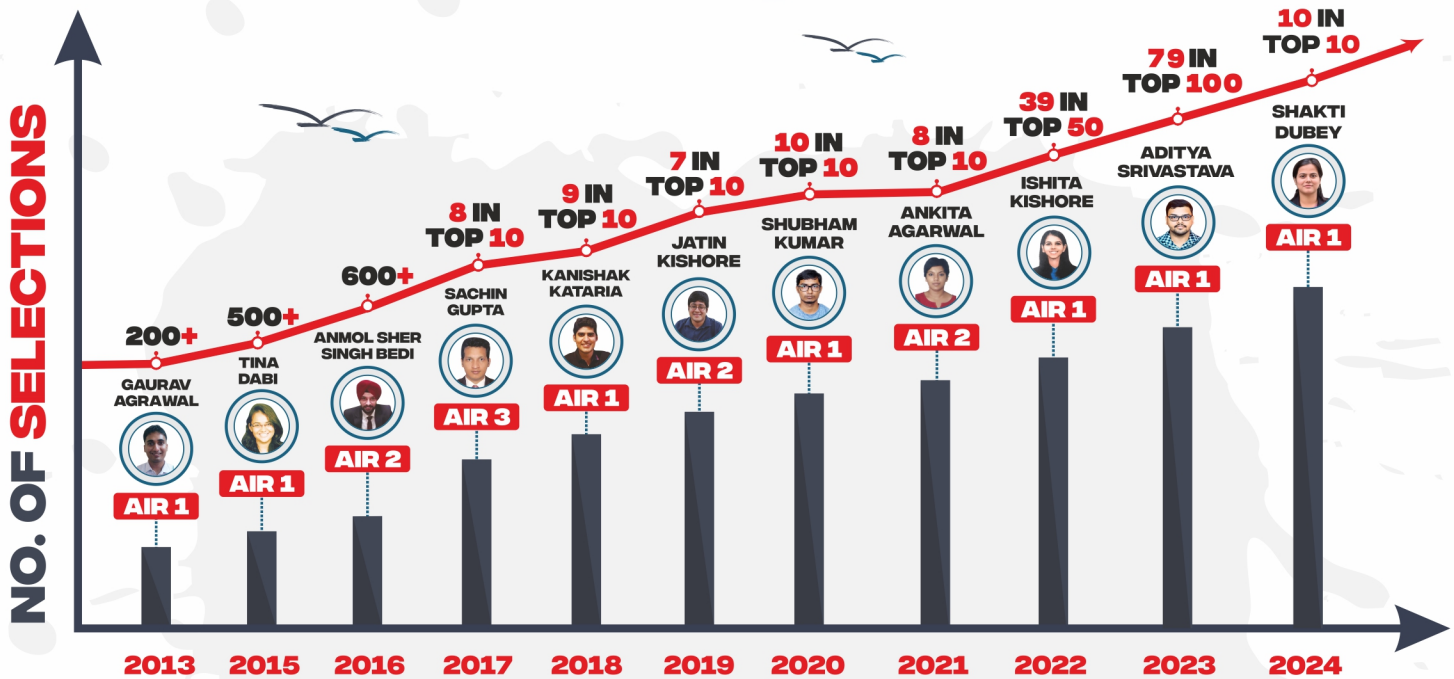
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