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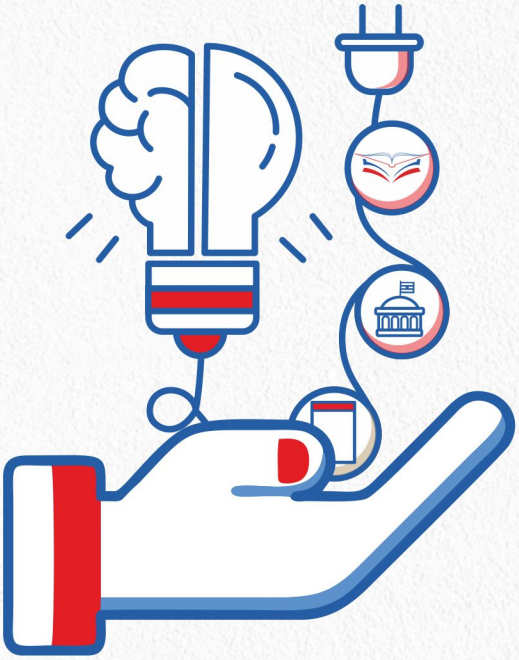

- Geography
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- Philosophy
- Political Science and International Relations
- Sociology

Starts : 1 JULY

- Anthropology
- History
- Public Administration

Starts : 15 JULY

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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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1. POLITY AND GOVERNANCE

1.1. CONSTITUTIONALISM

Why in the News?

Supreme Court observed that majoritarianism cannot trump constitutionalism in a constitutional democracy.

What is Constitutionalism?

- **Constitutionalism is the idea** that government **power should be limited** by **constitutional rules** and that political authority **should be exercised** within the bounds of the constitution.
  - **A constitution** is a **formal document** or set of documents that outlines the fundamental principles, laws, structures, and processes that govern a country or organization.
- In comparison, **Majoritarianism (majority rule) refers to a political principle according to which the preferences of the** numerical majority determine collective decisions.
- Principle of constitutionalism is based on the **principle of legality** which requires the Courts to interpret the legislations on the presumption that the Parliament would not intend to legislate contrary to fundamental rights.

How Constitutionalism prevails over majoritarianism in India?

- **Upholds Rule of Law:** Article 14 guarantees equality before law and equal protection of laws, ensuring that no person or authority is above the Constitution.
- **Ensures Judicial Review:** Articles **13, 32, and 226 form** the foundation of judicial review in India, empowering courts to strike down unconstitutional laws and actions, thereby safeguarding fundamental rights and upholding the rule of law.
- **Promotes Inclusiveness and Social Justice:** Articles **15(4), 15(5), 16(4), 46** supporting social justice, affirmative action, and reservations for SCs, STs, and OBCs ensure that governance reflects **substantive equality** rather than merely numerical majority.
- **Protecting Minorities**: Prevents the majority from infringing upon individual and minority rights. E.g., Constitutional protections under **Articles 29 and 30** safeguard the educational and cultural rights of minorities
- **Preserves Separation of Powers:** E.g., **Article 50** directs the State to take active steps to separate the judiciary from the executive in the public services.

Important judicial pronouncements related to constitutionalism

- **In Kesavananda Bharati v. State of Kerala (1973**): The Court held that Parliament's power to amend the Constitution under Article 368 is not absolute and **cannot alter its Basic Structure**, thereby acting as a crucial check on legislative power.
- **Rameshwar Prasad v. Union of India (2006):** Observed that Constitutionalism abhors absolutism and is premised on the rule of law in which subjective satisfaction is substituted by objectivity provided by the provisions of the Constitution itself.
- **I.R. Coelho v. State of Tamil Nadu (2007):** The court held that constitutionalism is a legal principle which requires control over the exercise of Governmental power to ensure that it does not destroy the democratic principles upon which it is based.
- **K.S. Puttaswamy v. Union of India (2017):** Supreme Court held that a fundamental right to privacy is guaranteed under article 21, strengthened constitutional protections against arbitrary state intrusion.
- **Navtej Singh Johar v. Union of India (2018):** The Supreme Court decriminalized homosexuality despite prevailing social prejudices.

Challenges related to Constitutionalism

- **Executive Overreach:** A primary threat to constitutionalism is the abuse of emergency powers and executive overreach., curtailment of civil liberties during the **1975–1977 Emergency.**

- **Concerns for democratic governance:** The increasing **reliance on ordinances and instances** where political and administrative exigencies dilute fundamental rights pose major concerns for democratic governance.
  - E.g., Bihar's Land Reforms Ordinances were re-promulgated many times between **1967 and 1981**.
- **Centralization of Power**: E.g., imposition of President's Rule under **Article 356,** which limits state autonomy and sparks **constitutional conflicts** between the Union and State governments.
- **Weakening of Federalism:** E.g., Disputes over the role of Governors, where on certain occasions (Goa and Manipur in 2017), Governors appointed Chief Ministers without following order of preference.
- **Judicial Activism vs judicial overreach:** While active **judicial intervention** is often necessary to uphold fundamental rights, **excessive activism risks** undermining the separation of powers. E.g., Courts using Article 142 to modify Arbitral awards risk judicial overreach.

Conclusion

Constitutionalism ensures that democracy remains anchored in justice, liberty, equality, and dignity. Hence, Supreme Court has repeatedly emphasized, constitutionalism must prevail over majoritarianism to preserve the essence of the Constitution and protect the rights of all citizens.

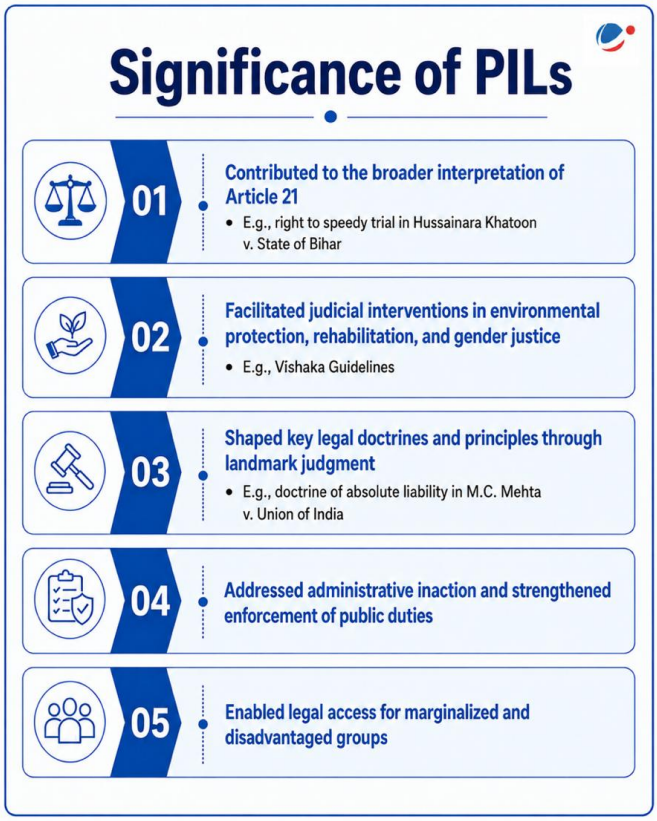
1.2. PUBLIC INTEREST LITIGATION (PIL)

Why in the News?

Supreme Court strongly disapproved of the rising misuse of public interest litigation (PIL).

About Public Interest Litigation (PIL)

- **PIL** means a **legal action** initiated in a court of law for the **enforcement of public interest** or **general interest** in which the **public or class of the community** have some interest by which their legal rights or liabilities are affected.
- **Locus standi (the legal right of a person to file a suit):** If a wrong is done to a person or a group who cannot approach the court themselves due to **poverty, disability, or helplessness,** any **public-spirited** individual or **social action group** can file a petition on their behalf.
- **Background:**
  - **The PIL** for the first time **originated in USA** in the 1960s.
  - In India the term 'PIL' was first used by **Justice V.K. Krishna Iyer** and **Justice P.N. Bhagwati** in a judgement.
- **Two categories of PIL**
  - **Representative Social Action** (seeking redress for a determinate, **disadvantaged class**).
  - **Citizen Social Action** (asserting diffuse, **collective rights** affecting the broader public).
- **PIL vs conventional litigation**: The petitioner in the **PIL may be a third party,** which is not personally involved in the dispute, while in the **conventional petition** the petitioner is one of the two parties involved in the dispute.



Reason for rising PIL in India

- **Judicial Activism:** Courts actively **expanded the scope of fundamental** rights under Articles 21, 32, and 226, making PIL a powerful tool for protecting rights and ensuring government accountability.

- **Simplified Access to Justice:** Courts introduced **epistolary jurisdiction**, allowing letters and postcards to be treated as writ petitions, making PIL more accessible to the public.
- **Democratization of access to justice**: This is done by relaxing the traditional rule of locus standi which allowed **only the specific person** who suffered a direct legal wrong could file a petition in court.
- **Progressive social legislations:** Laws relating to bonded labour, minimum wages, land ceiling and environmental protection enabled courts to protect the rights of the poor.
- **Removing Socio-Economic Barriers:** PIL bypassed costly, lengthy, and complex traditional litigation procedures, providing a **direct and low-cost route** to highest courts.

Concerns related to misuse of PIL

- **Public Interest Litigation Vs Private Interest Litigation:** When people or companies file PILs to resolve personal grievances or business issues under the pretence of public interest.
  - **E.g**. In **Chhetriya Pardushan Mukti Sangharsh Samiti v. State of U.P. (1990) case**, SC held that Samiti has not come with clean intention and hence PIL cannot be entertained.
- **Increased Judicial Backlog:** Supreme Court is burden with more than **3500** PILs adding to the already considerable backlog of pending cases in Indian courts.
- **Ambush PILs:** Such PILs are deliberately filed with the aim of securing dismissal and obstructing legitimate litigants from accessing the Court.
- **Judicial Overreach:** Through PIL, courts sometimes **end up framing policies** or taking on a continuing administrative role to monitor implementations, which blurs the lines of the separation of powers.
- **Dissociation of Rights and Relief:** E.g., due to a lack of resources to implement massive programs (like low-income housing), courts may merely **"declare rights**" without actually granting the tangible relief sought by the petitioner.
- **Political motives:** Rather than being filed out of true public interest, many PILs are filed for political reasons.
  - PILs are used by political parties and individuals to target opponents, postpone government initiatives, or generate publicity.

Important Judicial pronouncements related to PILs

- **Hussainara Khatoon vs. State of Bihar (1979):** The first PIL case ever recorded, the court gave various interim orders with regard to under-trial prisoners and those under protective custody.
- **S.P. Gupta v. Union of India (1982):** SC held that any member of the public with sufficient interest could assert a diffuse, collective and meta-individual right.
- **People's Union for Democratic Rights (PUDR) v. Union of India (1982):** The petitioners in PIL alleged that in the course of the construction work connected with the **Asiad projects**, the-contractors had violated numerous labour laws.
- **M.C Mehta vs. Union of India (1987)**: A PIL filed by environmental activist M. C. Mehta led the Supreme Court to order the closure of industries discharging untreated effluents into the Ganga.
- **Vishaka v. State of Rajasthan (1997):** A PIL that led the Supreme Court to hold that sexual harassment at the workplace **violates Articles 14, 15, and 21**, resulting in the **Vishaka Guidelines**, which later formed the basis of **POSH Act** [Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013].
- **State of Jharkhand v. Shiv Shankar Sharma (2022):** SC held that the bona fide of the petitioner who files the Public PIL is an extremely relevant consideration and must be examined at the very threshold itself.

Way forward to preserve the purity and sanctity of PILs

- **In State of Uttarakhand v. Balwant Singh Chaufal (2010),** the Supreme Court issued following directions: -
  - **Verification:** Courts must prima facie **verify the credentials** of the petitioner and the correctness of the petition's contents before entertaining a PIL.
  - **Rule Formulation:** Instead of judges individually devising procedures, each High Court should formulate specific rules to encourage genuine, bona fide PILs and effectively discourage those filed with oblique motives.
  - **Assessing Public Interest:** The court should ensure that the petition which involves larger public interest, gravity and urgency must be given priority over other petitions.
  - **Imposing Penalties:** Courts should discourage "busybodies" who file frivolous petitions for extraneous or ulterior motives by imposing exemplary costs.

- **Prioritization:** Petitions that involve larger public interest, gravity, and urgency must be given priority over other petitions.
- **Others suggestions:**
  - **Community Involvement**: Discussing the legal issues thoroughly with the affected people to explicitly identify which fundamental rights have been infringed.
  - **Exhausting Alternatives:** Preparing a "**status paper"** to share with interested groups and issuing notices to the relevant authorities demanding action before resorting to court litigation, unless the matter is too urgent to wait.
  - **Strong Documentation:** Petitions **must specify the exact relief desired** and be solidly backed by evidence, including documents, newspaper clippings, photographs, investigation reports, and affidavits.

Conclusion

Public Interest Litigation (PIL) continue to be a valid use of judicial authority, guaranteeing that everyone can obtain justice. PILs can continue to be extremely important in creating a society that is more just and equal if they are used and reformed carefully. Its most significant contribution has been to increase government accountability for the poor's human rights.

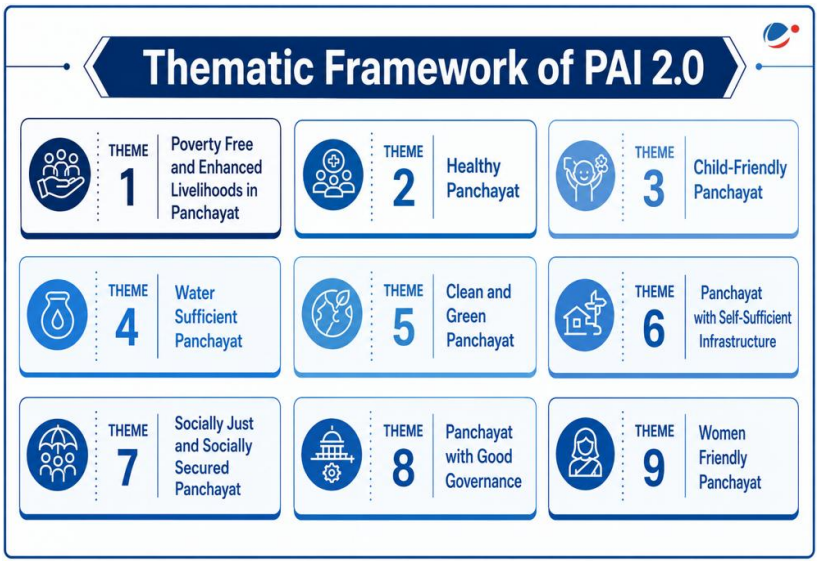
1.3. PANCHAYAT ADVANCEMENT INDEX (PAI)

Why in the News?

Ministry of Panchayati Raj released Panchayat Advancement Index (PAI) 2.0 for the **FY Year 2023–24.**

What is Panchayat Advancement Index?

- It is an **instrument** launched by the **Ministry of Panchayati Raj** to measure the **incremental progress** of over **2.6 lakh Gram Panchayats** (GP)/Equivalent to GP in India on the various sectors of development in rural areas.
- The Index is anchored in the framework of **Localization of Sustainable Development Goals (LSDGs)**, which aggregates the **17 global SDGs into 9 thematic** areas (see infographic) relevant to Panchayati Raj Institutions.
- **Performance Categories:** Based on composite scores, Gram Panchayats/Equivalent to GP are classified into 5 categories:
  - **Achiever (A+):** 90 and above, **Front Runner (A):** 75 to below 90; **Performer (B)**: 60 to below 75; **Aspirant (C):** 40 to below 60 and **Beginners (D)**: below 40.
- **PAI 2.0** has recorded an exceptional national participation of **97.30 %,** across **33 States** and **Union Territories** submitting validated data.
  - **80.79 % participation** was achieved under **PAI Version 1.0** (launched in 2025).
- **Key improvements in PAI 2.0** vs **PAI 1.0:**
  - Single integrated data entry form.
  - Mandatory Gram Sabha validation for transparency and accountability.
  - Enhanced auto-porting of data from national portals of nodal Union Ministries and Departments.
  - Soft and cross-data validation mechanisms for improved data accuracy.
  - Real-time dashboards for intuitive navigation.
  - Embedded vernacular language support.



Key findings of the PAI 2.0

- **Overall Performance:** No Gram Panchayat (GP) are fallen under **Achiever (A+)** grade.
  - ~1.4% GPs fall under the Front Runner category, ~45.72% GPs in the Performer category, ~47.6% in Aspirant and 5.27% in Beginners.

- **Top-Performing vs. Lagging States**
  - **Leading States:** Tripura emerged as the standout performer, with an **impressive 80%** of its Gram Panchayats rated as "Front Runners" followed by Kerala and Odisha.
  - **Lagging States:** In **Uttar Pradesh,** only **51** of its 57,678 Gram Panchayats reached the "Front Runner" category and in Rajasthan (8), Bihar (2), and Punjab (1).

About Panchayati Raj Institutions (PRIs)

- PRIs are units of **rural local self-government** established to promote decentralized democracy and grassroots participation in governance.
- **PRIs** were given **constitutional status** through the **73rd Constitutional Amendment Act, 1992**, which added **Part IX (Articles 243–243O)** and the **Eleventh Schedule** to the Constitution.
  - **Part IX provides for a 3 tier Panchayat system**, which would be constituted in every state at the village level, intermediate level and district level.
  - The **11th Schedule** includes **29 subjects** that may be transferred to Panchayats by the state governments.

How PAI has helped in transforming PRIs?

- **Evidence Based Planning:** PAI helps Panchayats identify and prioritize focus areas in their **Gram Panchayat Development Plans (GPDPs).**
- **Data Driven Governance for Informed Decision:** PAI compiles quantifiable metrics across nine SDG-linked themes such as poverty, health, education, sanitation, etc., which allows panchayats to identify strengths and weaknesses.
- **Enhanced Transparency and Citizen Engagement**: To promote accountability at the grassroots level, Panchayats are actively **displaying their PAI scorecards** outside their office.
  - Some states use PAI scores to allocate additional resources to Panchayats.
- **Localized Development Priorities:** It helps tailor development initiatives to **specific local needs**.
  - E.g., if a **GP scores** low on sanitation or water availability, the Gram Panchayat can prioritize those sectors in its annual action plan.
- **Healthy Competition and Rewarding Excellence:** The index fosters a **competitive spirit** among PRIs by highlighting **best practices** and linking a **Panchayat's performance** with national recognition and awards.
- **Strengthening Panchayat Governance:** It also been institutionalized for policy decisions, including identification of **Beacon Panchayats**, **Panchayat Learning Centers, and Model Women-Friendly Panchayats**, promoting **peer learning** and replication of best practices.

Conclusion

Panchayat Advancement Index (PAI) will be a significant tool for Union Ministries and State Government to assess the outcome of their schemes (E.g., MGNREGS, Swachh Bharat Mission, Jal Jeevan Mission) and also pave the path for policy formulation, ensuring more transparent & accountable rural governance.

1.4. APPOINTMENT PROCEDURE OF THE ELECTION COMMISSION OF INDIA (ECI)

Why in the News?

The Supreme Court of India called the ECI members' current appointment mechanism as **"Tyranny of the Elected".**

More in the News

- Supreme Court made the statement while hearing a challenge to the **Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023.**
  - Petitioners argued that the 2023 Act dilutes the 2023 **Anoop Baranwal** judgment.
  - Under the 2023 Act, the **Selection Committee's composition**, comprising the Prime Minister, a Cabinet Minister, and the Leader of the Opposition, guarantees the ruling government a **2:1 deciding majority**.
    - The Selection Committee has the **statutory power to ignore the Search Committee's five-name shortlist** entirely.

Constitutional Provisions regarding the ECI: (Articles 324 – 329)

- **Powers of Superintendence, Direction, and Control**
  - **Article 324** vests the sole authority for the **"superintendence, direction, and control"** of **elections to Parliament and State Legislatures** in the Election Commission.
- **Composition and Appointments**
  - **Article 324(2)** states that the ECI shall consist of a Chief Election Commissioner (CEC) and such number of other Election Commissioners (ECs) as the President may fix.
  - It specifies that their appointment by the President shall be **"subject to the provisions of any law made in that behalf by Parliament"**.
- **Independence and Protection from Removal**
  - **Article 324(5)** guarantees that the conditions of service of the CEC cannot be varied to their disadvantage after appointment.
  - It also protects the CEC by stating that they **can only be removed from office in the "like manner and on the like grounds as a judge of the Supreme Court"**.
    - In contrast, **other ECs do not enjoy this same constitutional security of tenure** as they can be removed from office simply upon the recommendation of the CEC.
- **Other Electoral Provisions**
  - **Article 326** guarantees elections to the Lok Sabha and State Assemblies on the basis of universal adult suffrage.
  - **Articles 327 and 328** empower Parliament and State Legislatures, respectively, to make laws regarding all matters relating to elections.
  - **Article 329** places a bar on the interference by courts in electoral matters, mandating that elections can only be challenged through an election petition.

Evolution of the Selection and Appointment Process of the ECI

- **Before 1991: No specific law** was enacted by the Parliament during this period.
  - Appointments were made **by the President** on the aid and advice of the **Union Council of Ministers under Article 324(2).**
- **Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991**.
  - This law standardized terms, salaries, and operational procedures. However, it **did not define a distinct selection procedure**, leaving appointments entirely again under executive discretion.
- **Anoop Barnwal Case (2023):** The Supreme Court declared that ECI appointments **should not be left solely to the executive**, as it compromised the institution's independence.
  - The Court established a **stop-gap appointment process** to operate until Parliament enacted a specific law, constituting a **three-member Selection Committee**:
    - The Prime Minister;
    - The Leader of the Opposition in the Lok Sabha (or the leader of the largest opposition party);
    - The Chief Justice of India (CJI).
- Parliament enacted the **Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023**, repealing the 1991 Act.
- Current Appointment Procedure of the ECI under the 2023 Act
  - **Search Committee:** A panel **headed by the Cabinet Secretary** is tasked with proposing a **shortlist of five names**.
  - **Selection Committee:** consisting of the **Prime Minister, a Union Cabinet Minister, and the Leader of the Opposition in the Lok Sabha** makes the final recommendation to the President.
  - **Executive Discretion:** The **Selection Committee has the statutory power to bypass the Search Committee's shortlist** and consider "any other person" for the role.

Suggestions on Composition of Selection Committee for Appointment of CEC & ECs

- **Tarkunde Committee (1975), Goswami Committee (1990) and Law Commission (255th Report, 2015):** Recommended a **three-member collegium** consisting of the **Prime Minister, LoP in the Lok Sabha, and the CJI**.
- **2nd ARC Report (2007):** Recommended a collegium consisting of the **PM**, **Speaker of the Lok Sabha, LoP in the Lok Sabha, Law Minister and the Deputy Chairman of the Rajya Sabha**.

Global Best Practices:

- **South Africa:** Appointments are guided by a **highly independent panel** that includes the President of the Constitutional Court and representatives from human rights bodies.
- **United Kingdom:** Recruitment is overseen by a **Speaker's Committee** (includes MPs) and requires **approval from the House of Commons** before the monarch formally makes the appointment.
- **United States:** The President appoints the members, but the selection **strictly requires confirmation by the Senate.**
  - **Members are barred from** holding other federal executive, legislative, or judicial positions at the time of their appointment.
- **Canada:** Appointments are made directly **through a resolution of the legislature** (the House of Commons).

Conclusion

The functioning of the ECI directly determines the **quality of governance and the overall strength of the nation's democracy**. During the Constituent Assembly debates, Dr. B.R. Ambedkar warned that for elections to be truly free, the electoral machinery must be taken out of the hands of the government of the day and not remain "under the thumb of the executive".

1.5. SPORTS GOVERNANCE IN INDIA

Why in the News?

The **National Sports Governance Board Rules and National Sports Tribunal Rules, 2026** were recently notified.

More on the News

- The rules have been framed under the provisions of **the National Sports Governance Act, 2025.**
- **Sports regulation** falls under the **jurisdiction of states** under **Entry 33 of the State List** in the **Seventh Schedule** of the Indian Constitution.
- **Sports-related policy framework** includes **National Sports Policy 2025** (replacing the 2001 policy) and the **Sports Broadcasting Signals Act, 2007.**

National Sports Governance (National Sports Board) Rules, 2026

- **Sports Board Composition: Chairperson and two Members** appointed by the Central Government based on recommendations of a **Search-cum-Selection Committee.**
- **Term of Office: 3 years or until attaining 65 years** of age, whichever comes first.
  - **Eligible for reappointment** for one additional term.
- **Powers and Functions of the Board**
  - Maintaining **records of the National Sports Election Panel** and **National Sports Bodies.**
  - Frame **model guidelines** for **sports governance and committee functioning** in National Sports Bodies.
  - Recommending the adoption of **international covenants** and **best practices to National Sports Bodies** and their affiliates.
- **Audit: The Comptroller and Auditor General of India** is empowered to audit the accounts of the Board.

National Sports Governance (National Sports Tribunal) Rules, 2026

- **Chairperson & Members**
  - **Tenure:** Chairperson serves for 5 years or till 70 years of age and Members serve for 5 years or till 67 years.

- **Reappointment:** Both Chairperson and Members can be re-appointed for one more term.

- **Powers of the Tribunal**
  - **General Powers:** Can issue orders to ensure justice and prevent misuse of process.
  - **Interim Orders:** Can grant stay orders or injunctions after hearing concerned parties.
  - **Enforcement:** Tribunal orders are enforceable like civil court decrees and become final after appeal period ends.
- **Techno-Legal Measures**
  - **Digital Portal:** Government may create a dedicated online portal for Tribunal functioning.
  - **Online Functions:** Portal will handle filing of disputes, notices, documents, and communication of orders.
  - **Digital Orders:** Tribunal orders will be digitally signed and shared electronically.

Significance of the Reforms

- **Reducing Factionalism:** Reforms aim to **curb internal disputes and factional politics** that have historically weakened effective sports administration in India.
- **Minimizing Litigation:** Establishment of a **dedicated Tribunal** seeks to reduce prolonged sports-related **legal disputes and administrative delays.**
- **Improving Governance Standards:** The Act promotes **transparency, accountability, ethical conduct, and athlete-centric governance** in sports organizations.
- **Alignment with Global Norms:** Reforms align Indian sports governance with **principles of the Olympic and Paralympic Charters** and **international best practices.**
- **Athlete Welfare Protection: Safe Sports Policy and ethics measures** strengthen safeguards for **women, minors, and vulnerable athletes** against abuse and exploitation.
- **Boosting India's Olympic Ambitions:** Better sports governance is viewed as essential for improving sporting excellence and **supporting India's 2036 Olympic** hosting bid.

Digital Current Affairs
Read our previous coverage on India's Sports Administration

Conclusion

The notified rules mark a significant step towards building a **transparent, accountable, and athlete-centric sports governance framework**, which can **strengthen institutional efficiency, improve sporting outcomes**, and support India's long-term ambition of emerging as a **global sporting powerhouse**.

1.6. NEWS IN SHORTS

1.6.1. FRAMEWORK FOR MILLION-PLUS CITIES

'Moving Towards Effective City Government: A Framework for Million-Plus Cities' Report released by NITI Aayog.

- India's 47 million-plus cities account for nearly 1/3rd of India's urban population and contribute to 60% of India's GDP.

- However, these face **acute challenges** related to infrastructure deficits, service delivery, housing, mobility, environmental sustainability, and social inclusion that impact overall livability and quality of life in these growth centres.

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Read our previous coverage on India's Urbanisation

Challenges in Urban Governance in Million-Plus Cities

- **Limited devolution of functions:** On average, city governments have **full control over only 4 functions** out of 18 functions (74th Constitutional Amendment Act).
- **Fragmented institutional setup and ineffective leadership:** Absence of clear role demarcation between elected representatives and the municipal administration.
  - **Mayors are not regarded** as the real heads.
- **Weak revenue base and limited devolution of funds:** Weak own-source revenues, high dependence on tied grants, delays in constitution, inadequate institutional support and weak/ selective implementation of **State Finance Commissions'** recommendations.
- **Weak public service delivery:** City governments continue to play little or no role in key services like public transport, planning, water and sanitation.
- **Capacity constraints:** Shortfalls in recruitment, high dependence on deputation, frequent transfers, and limited investment in training.

Key Recommendations of Report

- **Leadership:** Introduce directly elected Mayors with fixed tenure and an empowered Mayor-in-Council.
- **Integrated service delivery:** Integrate key services (water, sanitation, transport) under city governments for better coordination.
- **Enhance Municipal Finances:** Via own-source revenues, timely fiscal transfers through robust State Finance Commissions, and enabling access to market-based financing mechanisms such as municipal bonds.
- **Institutional Restructuring:** Bring parastatal agencies under city oversight with clear roles and coordination.
- **Legal and policy reforms:** States to amend Municipal Acts, with the Ministry of Housing and Urban Affairs updating the Model Municipal Law and supporting reforms.

1.6.2. CITIZENSHIP (AMENDMENT) RULES, 2026

Ministry of home affairs notified the Citizenship (Amendment) rules, 2026.

It aims to streamline processes concerning **Overseas Citizen of India (OCI)** cardholders and tightening passport norms for minors.

Digital Current Affairs
Read our previous coverage on OCI

Key Highlights

- Applicants seeking citizenship under the **Citizenship Amendment Act (CAA), 2019**, will have to submit an affidavit declaring whether they hold a valid or an expired passport from Pakistan, Afghanistan or Bangladesh.
- **Dual Passport Ban for Minors:** A new proviso mandates that a **minor child cannot** at any time hold the passport of any other country while also holding the Indian passport.
  - Under **the 2009 rules**, parents **registering** the birth of a **child born outside India** at an Indian **consulate** had to declare that the child **did not hold any other country's passport**.
- **e-OCI**: OCI status can now be issued in an electronic format (e-OCI) alongside traditional physical cards.
- **Mandatory Online OCI Applications:** OCI processes, including registration, are now completely online via a designated portal **(ociservices.gov.in)**.
- **Digital Renunciation:** Streamlines **renunciation and cancellation** procedures of OCI, including mandatory surrender of physical cards and digital acknowledgment.
- **Fast Track Immigration (FTI) Consent:** OCI applicants may now **consent** to share **biometric** data for automatic registration under the **Fast Track Immigration Programme.**
- **Appellate Mechanism:** Revisions against OCI-related orders will now be handled by an authority **one rank higher** than the original deciding authority.

About the Overseas Citizen of India (OCI) scheme

- Introduced via the **Citizenship (Amendment) Act, 2005** of the Citizenship Act, 1955.
  - In 2015, the Person of Indian Origin (PIO) card scheme was merged with it.
- **Eligibility:**
  - Who were citizens of India on 26th January, 1950 or there after or were eligible to become citizens of India on 26th January, 1950
  - **Exceptions**: Who is or had been a citizen of **Pakistan, Bangladesh** or such other country as the government may specify.
- **Benefits**:
  - **Multiple entry, multi-purpose lifelong visa** to visit India.
  - Exemption from reporting to Police authorities for any length of stay.
  - **Parity with NRIs** in financial, economic and educational fields **except** in the acquisition of agricultural or plantation properties.
- **Does not confer political rights** such as voting or holding constitutional posts**.**
- OCI is a privilege, not an entitlement, and is **liable to cancellation for violations of Indian law.**

1.6.3. DISQUALIFICATION OF MP

Recently, **two-thirds** of the Rajya Sabha MPs of AAP quit the party and joined the BJP, leading to the submission of a **disqualification plea**.

- As per the **Tenth Schedule,** Disqualification on the grounds of **defection not to apply** in case of **merger**.
- It provides that member of a House shall **not be disqualified** where his **original political party** merges **with another political party** with at **least 2/3 members.**
  - The **disqualification plea** argues that **Tenth Schedule** requires a genuine merger of the **original political party**, not just legislators switching sides.

Tenth Schedule and Disqualification of Legislators

- Popularly referred **Anti-Defection Law**
- Added in the Constitution through the **Fifty-Second Amendment Act, 1985.**
  - The 91st Constitutional Amendment Act strengthened the **anti-defection law by removing** the **1/3rd** split provision, making it at least 2/3rd.
- **Objective**: aimed to **combat political defections** and **safeguard democracy.**
- **Grounds for Disqualification:**
  - Voluntarily **giving up party membership**;
  - Defying **party whip** during voting;
  - If an **independently elected legislator** joins a political party;
  - If a nominated member joins any political party, after six months from the day he becomes a legislator.
- Entrusted the Speaker/Chairman with adjudication for fearless and expeditious decisions, explicitly to avoid lengthy court delays.

1.6.4. PRISON STATISTICS INDIA (PSI) 2024 REPORT RELEASED BY NATIONAL CRIME RECORDS BUREAU (NCRB)

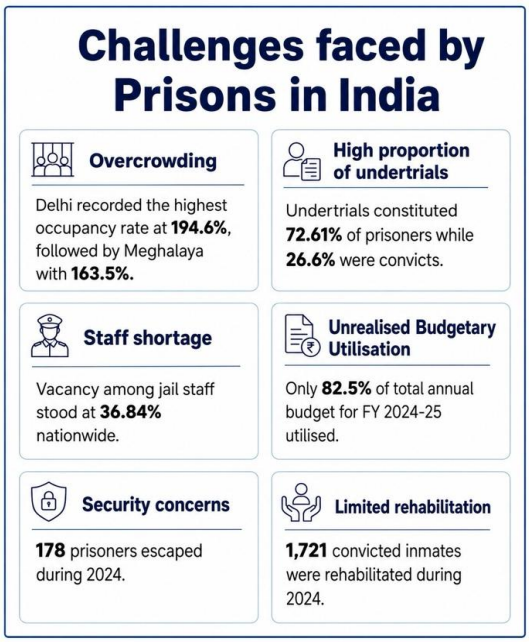
NCRB acts as a repository of information on crime and criminals to assist investigators.

Key Highlights of Report (2024)

- **Number of Prisons:** Increased by 0.1% (1333 prisons) at the national level.
  - The actual capacity of prisons has increased by 3.3% while number of prisoners lodged in jails has decreased by 3.5%.
- **Decline in Prison Occupancy Rate:** From 120.8% in 2023 to **112.7%** in 2024.
- **Gender-wise Prison Population:** 95.8% prisoners were male, 4.14% were female, 122 were transgender persons.
  - There are only 34 women jails; 21 States/UTs have no separate Women Jails.

Way Forward/ Recommendations

- **By Supreme Court**: Upholding Human rights; establishing **open prisons** (Suhas Chakma case 2024); Establish a **Data-Driven Rehabilitation Tracking System.**
- **Justice A.N. Mulla Committee**: Setting up an All India Service called **Indian Prisons & Correctional Service, reduce undertrials** in jails etc.
- **Justice Amitava Roy Committee:** Special fast-track courts, Use of Video Conferencing etc.



Measures taken for Prison Reforms

- **MHA amended Model Prison Manual, 2016 rules and Model Prisons and Correctional Services Act, 2023:** To address caste-based discrimination within prisons across country.
- **E-Prison Project:** Developed by National Informatics Centre provides a centralized approach for recording and managing prisoner information and generating reports.
- **FASTER (Fast and Secured Transmission of Electronic Records) system of Supreme Court:** To resolve delays in communication of bail orders.

1.6.5. SUPREME COURT (NUMBER OF JUDGES) AMENDMENT BILL, 2026

Union Cabinet approved the Supreme Court (Number of Judges) Amendment Bill, 2026.

The bill seeks to amend the **Supreme Court (Number of Judges) Act, 1956** to increase the judge strength of the Supreme Court from **present 33 to 37** (excluding the Chief Justice of India (CJI)).

- **Article 124 of the Constitution of India** provides for the **establishment of the Supreme Court** and **empowers Parliament to determine the number of judges** over time.
  - Parliament enacted The **Supreme Court (Number of Judges) Act, 1956** to fix the number of judges of SC at 10 (excluding the CJI).
  - SC's strength was then subsequently increased by amendments in 1960, 1977, 1986, 2008 and 2019.
- Once the amended law comes into force, the **Supreme Court Collegium** would recommend judges to the government for appointment to the top court.
  - **Chief Justice of India (CJI),** in consultation with collegium members, **initiates the proposal for appointment** of judges in Supreme Court.
  - Collegium's recommendations are sent to Union Law Minister, who submits them to the Prime Minister, who in turn advises President to formally appoint the judges.
- **Significance:** Additional judges will help in **faster disposal of cases, timely delivery** of justice, and reducing pendency of cases.
  - Presently, Supreme Court has total **92,926 pending cases**.

1.6.6. E-COURT MISSION

Chief Justice of India declares **Sikkim to be the first paperless state judiciary** in the country.

- A fully paperless judiciary is a system in which **all legal processes are done electronically** rather than through physical paper, using measures such as digital files, e-filing, online hearings, digital case tracking etc.
- Such digital transformation of courts is being undertaken under e-Courts Mission Mode Project.

e-Court Mission Mode Project

- Pan-India initiative to **computerise and digitise the judiciary** for delivering efficient and accessible justice services.
- **Launch:** Launched in **2007** under the National e-Governance Plan (NeGP).
- **Implementing Authority:** Department of Justice under the guidance of the e-Committee of the Supreme Court of India.

1.6.7. NATIONAL COMPLIANCE REDUCTION AND DEREGULATION INITIATIVE

Tripura became the **first state** to complete all priority areas under Deregulation Phase-II of the National Compliance Reduction and Deregulation initiative.

- **Deregulation** is reduction or elimination of government oversight of an industry.

About National Compliance Reduction and Deregulation initiative

- **Genesis:** Task Force on Compliance Reduction and Deregulation was constituted in **2025** under the chairmanship of the Cabinet Secretary.
- **Objective: Identifying redundant or outdated** compliances and recommending their **rationalisation;** guiding states in amending laws and procedures to align with **principles of minimal regulation.**
- The Task Force identified 23 Priority Areas across 5 broad sectors.
- **Phase II** was rolled out in **January 2026** to cover priority areas, including land, building and construction, utilities and permissions, environment, education, health, labour, and overarching reform.

2. INTERNATIONAL RELATIONS

2.1. INDIA-US RELATIONS

Why in the News?

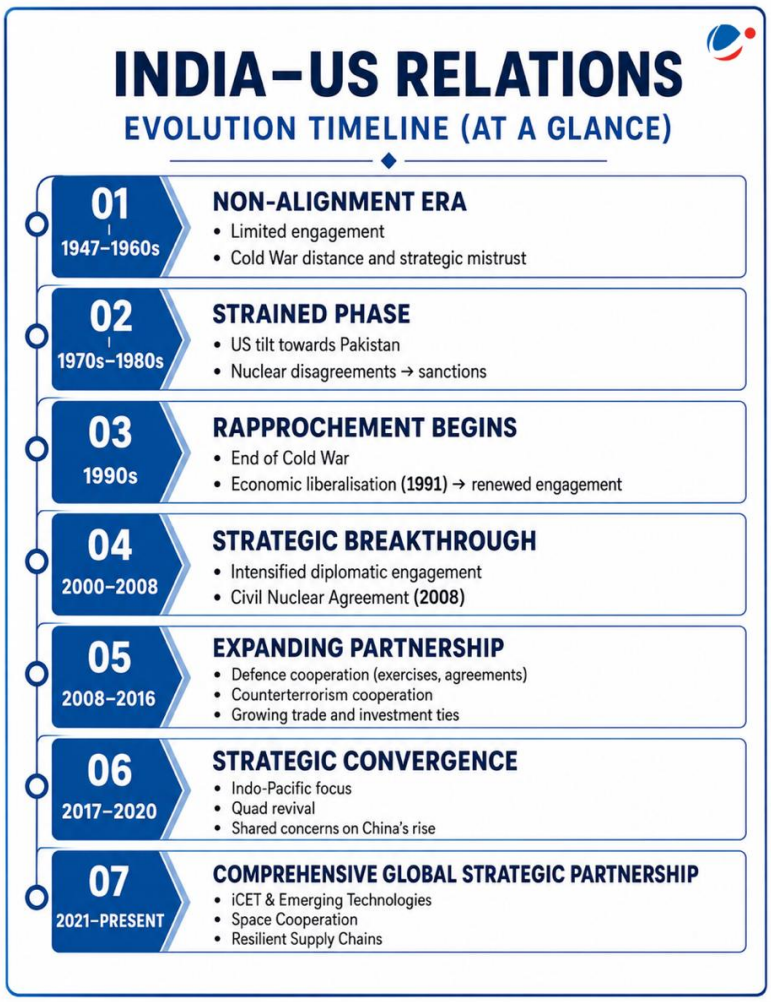
United States Secretary of State Marco Rubio visited India to strengthen bilateral ties, which have been under strain in recent times.

More on the News

- In the last few years, India–US relations have witnessed a downward trajectory due to policy decisions taken by the incumbent US President, such as tariff impositions, among others.

Key Areas of Convergence in India–US Relations

- **Indo-Pacific and Regional Security:** A major driver of this strategic alignment is their shared concern regarding the rise of China and its expanding regional footprint.
    - Through frameworks like the Quadrilateral Security Dialogue (Quad), the two countries coordinate closely on maritime security.
- **Defense Cooperation and Co-production:** India is designated a "**Major Defense Partner**". Partnership shifted to co-development and co-production (e.g., INDUS-X).
    - Key foundational agreements signed with the US include LEMOA, COMCASA, and BECA.
- **Critical Technologies and Innovation:** Collaboration through **TRUST i.e.** Transforming the Relationship Utilizing Strategic Technology on strategic technologies (AI, semiconductors, quantum, telecom).
- **Resilient Supply Chains and Critical Minerals:** Actively restructuring supply chains to reduce dependence on China; collaborating via a **Critical Minerals Framework** and the **Indo-Pacific Economic Framework (IPEF)**.
- **Clean Energy and Climate Action:** Collaboration through the **Strategic Clean Energy Partnership (SCEP)**; launched a Roadmap to unlock $1 billion in multilateral financing for **clean energy supply** chains.
- **Space Exploration:** Robust civil cooperation between NASA and ISRO. E.g., NASA-ISRO Synthetic Aperture Radar (NISAR) Mission
- **Economic and Trade Partnership**: The US is among India's largest trading partners.



- **Ensuring Energy Security**: In recent years, the U.S. has emerged as one of the largest suppliers of Liquefied Natural Gas (LNG) to India.

Major Bottlenecks in India–US Relations

- **Punitive Tariffs and Trade Coercion:** In 2025, the US imposed a 50% tariff on certain Indian exports; however, it was later reduced following an interim trade agreement between the two sides.

- This has led to fall in exports to the US.
- **Energy Security and Russian Oil:** India's persistent procurement of discounted Russian crude oil has become a major flashpoint.
  - The US views these purchases as funding Russia's war efforts and has applied heavy economic pressure to force decoupling.
- **The Pakistan Rapprochement:** The US has recently renewed its diplomatic and military outreach to Pakistan.
- **Strategic Autonomy vs. Alliance Expectations**: Washington frequently expects India to align with its geopolitical camps.
  - In contrast, India insists on "multi-alignment," actively engaging in Western-led groups such as the Quad while also participating in non-Western platforms like BRICS and SCO to preserve its strategic flexibility.
- **Shifts in China Policy:** Recently, the US and China agreed to build a "constructive relationship of strategic stability" based on fairness and reciprocity.
- **Immigration and Visa Policies**: The US is restricting its visa norms, which is affecting Indian professionals holding H-1B visas.
- **Imposition of Sanctions**: The US has raised concerns over the acquisition of advanced weaponry, such as the S-400 air defense system from Russia by India, citing potential implications under the **Countering America's Adversaries through Sanctions Act (CAATSA)**.

Strategies to Better Align India–US Relations

- **Finalising Bilateral Trade Agreement (BTA):** A comprehensive BTA needs to be signed to provide a stable, predictable, and mutually beneficial trade framework by addressing tariff barriers, market access, etc.
- **Easing H-1B Visa Restrictions:** The US can streamline visa processes for Indian IT professionals, researchers, etc.
- **Waiver under CAATSA:** Influence of Indian-Americans can be used to get long-term exemptions for India under CAATSA to strengthen defense ties and counter regional threats.
- **Acting as bridge power**: Unlike the United States and China, India is not trapped within the same depth of industrial interdependence, nor does it seek geopolitical primacy through hierarchical dependency structures.
  - New Delhi can increasingly position itself as a bridge power, adopting a posture that is non-Western without being anti-Western.
- **Sustaining Institutional Dialogues and Practical Cooperation**: The relationship can be stabilised by continuing to manage divergences through high-level institutional channels, such as the 2+2 Ministerial Dialogue.
  - It will help in managing divergent geopolitical interests, such as the US-Pakistan Rapprochement, Interests in the Middle East, etc.

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Conclusion

India–US relations reflect strong strategic convergence in defence, technology, energy, and the Indo-Pacific, alongside persistent divergences in trade, visas, sanctions, and geopolitical priorities that occasionally create friction. Going forward, the partnership should be strengthened through institutionalized dialogue, a balanced trade framework, and greater respect for strategic autonomy, along with deeper cooperation in emerging technologies and resilient supply chains to ensure long-term stability.

2.2. INDIA-NORDIC RELATIONS

Why in the News?

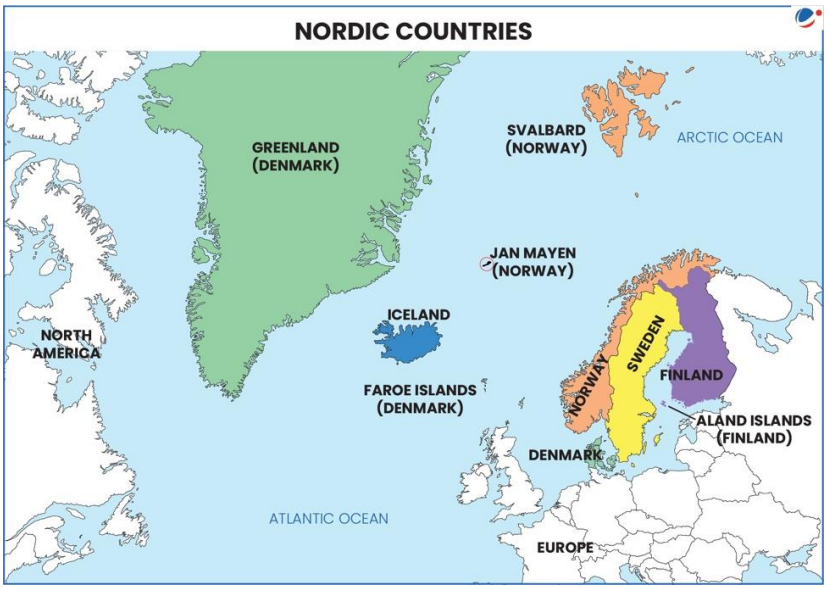
Recently, Prime Minister of India paid an official visit to two Nordic countries, Norway and Sweden and participated in the 3rd India-Nordic Summit along with Prime Ministers of Nordic countries.

Significant outcomes of the visit

- **India and Norway:**
  - **Enhanced co-operation:** India-Norway relations elevated to Green Strategic Partnership aims to deepen cooperation in sectors ranging from **Clean Energy to Climate Resilience, Blue economy to green shipping**

- **Indo Pacific Ocean Initiative:** Norway announced its participation in **India's Indo Pacific Ocean Initiative (IPOI).**
  - IPOI was launched by India **at the East Asia Summit in 2019,** builds upon the **"Security and Growth for All in the Region" (SAGAR) initiative.**
- **India-Norway Digital Development Partnership:** Establishes a framework for cooperation on digital public goods, etc.
- **Award:** The Indian Prime Minister was awarded the **Grand Cross of the Royal Norwegian Order of Merit** by His Majesty King Harald V of Norway.

- **India and Sweden:**
  - **Elevation to Strategic Partnership:** India and Sweden officially agreed to upgrade their bilateral relationship to a Strategic Partnership.
  - **Trade and Investment Goals:** The two countries set a shared ambition to **double their bilateral trade and investment** within the next five years.
  - **Space Exploration:** An agreement was advanced proposing the inclusion of a **Swedish payload on India's Venus Orbiter Mission**.
  - **Counter-Terrorism Efforts:** Reaffirming a joint stance against global threats, both countries pledged to continue fighting terrorism and its supporters in all forms.



- **3rd India-Nordic Summit outcomes:**
  - **Partnership Elevation:** Bilateral relations were upgraded to **"Green Technology and Innovation Strategic Partnership"**, with focus on renewable energy, green hydrogen, digital innovation, and sustainable manufacturing.
  - **Trade:** Agreement to leverage India-EU FTA and India-EFTA TEPA for greater trade, technology, also Prime Minister invited Nordic nations to set up a presence in **GIFT City, Gujarat**.
  - **Climate Action:** Collaborative climate efforts feature India's **Mission LiFE** (focusing on sustainable behavioral change) and the Leadership Group for Industry Transition (**LeadIT**), which Iceland has officially expanded to join.
  - **Maritime & Blue Economy:** Cooperation was strengthened through the **Indo-Pacific Oceans Initiative (IPOI)** and India's maritime vision **'MAHASAGAR'**.
    - The nations also pledged support for the **Hong Kong Convention** to ensure sustainable ship recycling, and instituted new Maritime Security Dialogues with Norway and Denmark.
  - **Space & Arctic Exploration:** Leaders pushed for joint polar research and indigenous knowledge exchange within the **Arctic Council** framework, where India serves as an observer.

About Nordic Region

- **Nordic nations**; It comprise a geographical and cultural region in Northern Europe consisting of five sovereign states **Denmark, Finland, Iceland, Norway, and Sweden** along with **three autonomous territories**: the Faroe Islands, Greenland (associated with Denmark), and Åland (associated with Finland).
  - While often used interchangeably with "Scandinavia" (which strictly speaking only includes **Denmark, Norway, and Sweden**), the term "Nordic" encompasses the broader cultural, historical, and institutional bonds.
- **Water boundaries:** The region is bounded by the **Arctic Ocean** to the north, the **North Atlantic and Norwegian Sea** to the west, and the **Baltic Sea** and the **Gulf of Bothnia** to the south and east.
- **The Nordic Council:** Established in 1952 (Helsinki Treaty framework), the Nordic Council is the official body facilitating cooperation among the region's lawmakers.

- **Indian policy:** It is based on India's Arctic policy titled **'India and the Arctic: building a partnership for sustainable development'**.
  - It is structured around **six pillars: strengthening India's scientific research and cooperation, climate and environmental protection, economic and human development, transportation and connectivity, governance and international cooperation, and national capacity building in the Arctic region.**

Areas of convergence of Nordic countries and India

- **Economic and Trade:** The Nordic bloc is an advanced region with a combined **GDP of around $2 trillion.**
  - **Bilateral trade** between India and the Nordics reached **$19 billion in 2024.**
- **India and EFTA (includes Norway and Iceland)** signed the Trade and Economic Partnership Agreement (TEPA) aimed for investment **of USD 100 billion leading to creation of 1 million direct jobs** in India.
- **Strategic Access to the Arctic Region: As all 5 Nordic nations** are members **of the Arctic Council**, a vital gateway to Arctic engagement serves as a **counterweight to China's "Polar Silk Road" initiative** in the region.
  - India established '**Himadri**,' its **first permanent Arctic research station**, in July 2008 at Ny Alesund, Norway, and has held **Observer Status in the Arctic Council** since 2013.
- **Technological and Green Expertise:** E.g., Iceland offers deep expertise in geothermal energy, Sweden provides strength in advanced manufacturing, and Finland specializes in telecommunications.
- **Space exploration: ISRO uses Norway's Svalbard Ground Station for satellite data reception.**
- **Global Governance & Security:** The Nordic countries back India's permanent membership in a reformed **UN Security Council** and supported its entry into the **Nuclear Suppliers' Group (NSG)**.

Challenges in India-Nordic relationship

- **Divergent Threat Perceptions (The Russia-China Matrix):** For the Nordic nations, Russia represents a primary security threat, especially following the NATO accession of Finland and Sweden.
  - Conversely, India treats China as its primary adversary.
- **Limited Trade:** India's total merchandise trade with the Nordic nations is **$19 billion in 2024,** only around 1% of India's global trade
- **Regulatory Friction and Trade Asymmetry:** Despite breakthroughs like the EFTA-TEPA, trade is hampered by complex regulatory differences, non-tariff barriers, and logistical constraints.
- **Connectivity & Logistics Constraints:** Long distance and limited direct shipping/air connectivity increase logistics costs due to absence of dedicated maritime corridors and limited direct flights.

Conclusion

India and the Nordic countries should transform their shared commitment to sustainability, innovation, and resilient supply chains into a comprehensive strategic partnership. By deepening cooperation in clean technologies, defence, climate action, connectivity, and people-to-people ties, both sides can emerge as trusted partners in shaping an inclusive, green, and rules-based global order.

2.3. INDIA-UAE RELATIONS

Why in the News?

India and United Arab Emirates (UAE) signed Framework for the Strategic Defence Partnership during the official visit of the Indian Prime Minister to the United Arab Emirates.

Key outcomes of visit

- **Framework for the Strategic Defence Partnership:** It will promote **Defence Industrial collaboration**, innovation and advanced technology, training, exercises, education and doctrine and interoperability, etc.
- **Energy Security and Strategic Reserves:**
  - **Strategic Petroleum Reserves (SPR) Expansion**: MoU was signed to scale UAE's participation in India's SPR to 30 million barrels—a near-fivefold increase.

    - This involves utilizing facilities in Vishakhapatnam, Andhra Pradesh, and developing new reserves in Chandikhol, Odisha.
  - **Fujairah Storage and Gas Reserves:** The agreement explores establishing Indian strategic crude storage at the Port of Fujairah in the UAE, alongside jointly developing strategic gas reserves within India.
  - **Strait of Hormuz:** Prime Minister also conveyed India's clear position in favour of ensuring **safe transit passage** and unimpeded navigation through the Strait of Hormuz vital for **energy and food security.**
- **Investment:** The leaders welcomed an announced **US$5 billion investment commitment** from UAE entities.
- **Vadinar Ship Repair Cluster:** Cochin Shipyard Limited (CSL) and Dubai's Drydocks World (DDW) signed a MoU to set up a major ship repair and offshore fabrication cluster at Vadinar, Gujarat **under the Maritime Development Fund Scheme of India.**
- **Super Computing Cluster:** In a major push for artificial intelligence, India's CDAC and the UAE's G-42 agreed to set up an **8 Exaflop Super Computing Cluster** in support of the India AI Mission.
- **Virtual Trade Corridor:** The visit saw the operationalization of the Virtual Trade Corridor utilizing the **MAITRI** (Master Application for International Trade and Regulatory Interface) digital framework.

About UAE

- **United Arab Emirates** is federation of seven emirates along the eastern coast of the Arabian Peninsula.
  - Abu Dhabi, its **largest emirate** while Emirate of Dubai serves as an international hub for business, finance, and travel.
  - **Smaller emirates** of Sharjah, Ajman, Umm al-Quwain, and Ras al-Khaimah also occupy the peninsula, whose protrusion north toward Iran forms the Strait of Hormuz, which links the Persian Gulf to the Gulf of Oman.
  - **The federation's seventh member, Fujairah (Al-Fujayrah),** faces the Gulf of Oman and is the only member of the union with no frontage along the Persian Gulf.
- **Tropic of Cancer passes through UAE** (Abu Dhabi emirate).

Importance of UAE for India

- **Economy and Trade:** Both countries negotiated the Comprehensive Economic Partnership Agreement (CEPA) in a record 90 days in 2022 boosting overall trade.
  - The UAE is India's third-largest trading partner globally and its second-largest export destination with bilateral merchandise trade reaching USD101.25 billion in FY 2025-26.
- **Source of Investment:** UAE accounts for around 81% of all investments coming in India from the Arab world with overall seventh-largest overseas investor in India.
- **Diaspora:** The UAE hosts between 3.5 to 4 million Indians, making them the largest ethnic group in the country (constituting roughly 35% of the UAE's total population).
- **Energy security:** UAE stood as the fourth largest source of crude oil, third largest source of LNG, largest supplier of LPG and second largest export destination for India's finished petroleum products.
  - UAE is the **only foreign nation to participate in India's Strategic Petroleum Reserve (SPR)** program.
- **Internationalization of rupee:** The two nations have established a Local Currency Settlement (LCS) system, allowing cross-border transactions and trade to be settled directly in Indian Rupees (INR) and UAE Dirhams (AED).
  - Fintech cooperation through agreement on interlinking of the instant payment platforms UPI (India) and AANI (UAE), Agreement on inter-linking domestic debit/credit cards RuPay (India) with JAYWAN (UAE).
- **Gateway to West Asia:** For India, the UAE serves as the most important strategic gateway into the Gulf and the broader West Asian region.

- I2U2 and the India-Middle East-Europe Economic Corridor further illustrate how both are trying to shape new regional architectures that are economic, technological, and connectivity-driven rather than security-centric.

Importance of India for UAE

- **Defence Cooperation:** Both countries also participate in International Defence Exhibition and Conference (IDEX) and the Naval Defence and Maritime Security Exhibition (NAVDEX) and in military exercise such as **Desert Flag, Desert Cyclone.**
- **Space Cooperation:** ISRO is working with the UAE Space Agency for exploration and use of outer space for peaceful purposes and is an important element of the I2U2 cooperation as well.
- **Food Security:** India is a reliable supplier of food grains, rice, sugar, fruits, vegetables, and processed food; supporting the UAE's **National Food Security Strategy 2051.**
- **Geopolitical Partner:** In a volatile and polarized West Asian region, the UAE views India as a highly stable and capable security partner **being relatively free from ideological baggage or interventionist ambitions.**

Challenges in India-UAE relationship

- **Regional instability:** Deteriorating regional peace in region due to the on-going conflict in Iran-USA-Israel, Israel-Palestine may impact IMEC also increasing energy security issues for India and economic stability for UAE.
  - Recent escalations have included a drone strike on the **Fujairah Oil Industry Zone** that injured three Indian nationals**.**
- **Rights of emigrant labourers:** Largely due to **Kafala system** in UAE granting disproportionate power to employers over immigrant labourers, leading to human rights violations.
- **Non-Tariff Barriers:** Indian exporters, particularly in the processed food sector, face hurdles due to non-tariff barriers like the UAE's mandatory Halal certification requirements
- **Maritime Security:** Piracy, drone attacks, and disruptions in the **Strait of Hormuz** and **Red Sea** affect trade and energy security.
- **Increasing Trade Deficit:** Despite the significant boost in trade, India's trade deficit with the UAE has widened. In FY 2024-25, India's trade deficit with the UAE reached USD **26.8 billion.**

Conclusion

India-UAE share a multidimensional partnership encompassing trade, technology, connectivity, maritime security, and regional stability **as quoted by** Dr. S. Jaishankar **"India-UAE ties are a model of how India engages the Gulf in the 21st century."**

2.4. INDIA-ITALY RELATIONS

Why in the News?

During the Indian Prime Minister's official visit to Italy, India and Italy elevated their bilateral ties from a Strategic Partnership to a Special Strategic Partnership.

Key Outcomes of the Visit

- **Economic and Trade Goals:** India-Italy set an objective to expand bilateral trade to **€20 billion by 2029**.
- **Defense and Security:** Adopted the **India-Italy Defence Industrial Roadmap** and a Joint Declaration of Intent to promote technological cooperation, co-design, co-development, and co-production of defense platforms.
  - MoU was established between the **Italian Guardia di Finanza** and India's **Directorate of Enforcement** to enhance security cooperation.

- **Technology and Innovation:** The creation of **INNOVIT India** was announced; which will support startup acceleration, joint research, and collaboration in sectors like artificial intelligence, quantum computing, and semiconductors.
- **Infrastructure and Connectivity:** Both countries reaffirmed their commitment to advance the **India-Middle East-Europe Economic Corridor (IMEC)** and signed an MoU to cooperate on maritime transport and ports.
  - IMEC, announced in 2023, aims to link India, the Middle East, and Europe through an integrated rail and shipping corridor.
- **Migration and Healthcare:** Declaration of Intent was signed to **facilitate the mobility of nurses** from India to Italy.
- Launch of "ICI - Italy Calls India: a University-Enterprise talent bridge" aimed at enhancing the talent of Indian students enrolled in Italian universities by offering concrete pathways for integration into Italian enterprises.
- **Culture and Tourism:** To promote deeper people-to-people ties, the leaders declared that **2027 will be celebrated as the "Year of Culture and Tourism between India and Italy"**.
  - Italy signed a MoU to participate in the development of the National Maritime Heritage Complex in Lothal, Gujarat.
- **Agriculture and Traditional Medicine:** Agreements were signed for cooperation in agriculture and traditional medicine, including a MoU between the All India Institute of Ayurveda and Ayurvedic Point srl Milan.
  - Indian PM visited the UN Food and Agriculture Organization (FAO) headquarters in Rome, where he was conferred the **Agricola Award** in recognition of his leadership in global food security and sustainable agriculture.
- **Roadmap:** Appreciated the progress achieved across the diverse pillars of the **Joint Strategic Action Plan 2025-2029** adopted by the two leaders in their meeting during the G20 Summit held in Rio de Janeiro in November 2024.

Areas of convergence between India and Italy

- **Economic:**
  - Italy is India's **4th largest** trading partner in the EU.
  - In 2025, bilateral trade between India and Italy reached **€14.25 billion**, with India maintaining a healthy trade surplus.
- **Defence and Security:**
  - Signed the **Defence Cooperation Agreement (2023)** to enhance collaboration in research, industrial cooperation, and maritime domain awareness.
  - Italy and India have implemented **Joint Initiative to Counter Financing of Terrorism** adopted in November 2025.
  - **Strategic alignment: Italy exited China's Belt and Road Initiative (BRI) in 2023** after joining it in 2019 as the only G7 member. This aligns with India's efforts to counter China's growing dominance in Europe.
- **Environment and Climate:** India-led initiatives joined by Italy include International Solar Alliance (ISA), Coalition for Disaster Resilient Infrastructure (CDRI) and Global Biofuels Alliance (GBA).
- **People-to-people ties:** Italy is home to the largest Indian diaspora in the European Union.
  - Both sides signed a **Migration and Mobility Agreement in 2023** to facilitate temporary residence for Indian students up to 12 months after their graduation.
- **Other areas:** Reforms in the United Nations, Shared commitment to a free, open, peaceful and prosperous Indo-Pacific, Scientific co-operation based on 2025–2027 Executive Program for Scientific Cooperation etc.

Italy increasing focus on Indo-pacific and convergence with India

- **Policy shift:** Italy has significantly expanded its security and strategic engagement in the Indo-Pacific region between 2021 and 2024, representing a major policy shift for a country traditionally focused on the Euro-Mediterranean space.
  - Italy conceptualizes the region as an extension of the **"enlarged Mediterranean" or "Global Mediterranean"**.
- **Drivers Behind Italy's Indo-Pacific Strategy**: Primary drivers are **mounting pressure from the United States (both bilateral and multilateral), the pursuit of national prestige, and the interests of the Italian defense industry**.
- **Shared Strategic Vision:** Both nations share a firm commitment to a **free, open, peaceful, and prosperous Indo-Pacific**, grounded in international law and the United Nations Convention on the Law of the Sea.
- **The Indo-Pacific Oceans Initiative (IPOI):** Italy has joined the India-led IPOI plurilateral initiative.

- **Global Connectivity (IMEC):** The **India-Middle East-Europe Economic Corridor (IMEC)** serves as a critical physical link connecting Italy's "Global Mediterranean" focus with India.

Issues in India-Italy Relations

- **Labor Exploitation:** Severe exploitation of Indian laborers in Italy's agricultural sector. Many migrants fall victim to the *caporalato* system; a form of forced labor controlled by gang-masters who recruit cheap casual labor.
- **Defence supplies to Pakistan:** Italy has historically supplied weapons, including missiles and helicopters to Pakistan.
- **China Dependency:** Despite exiting BRI, Italy relies on China for imports and supply chains especially in textile sector, impacting India's strategic interests.
- **Lack of trust:** Italy's largest defence firm, Leonardo, had faced restrictions from the Indian defence ministry for nearly a decade after the VVIP helicopter scandal, restrictions are lifted, but trust remains low.

Conclusion

India and Italy can translate their strategic partnership into tangible outcomes by accelerating economic connectivity, defence cooperation, and people-to-people exchanges. They can leverage platforms such as the G20, G7, and the EU while advancing initiatives like IMEC and the Joint Strategic Action Plan.

2.5. NUCLEAR GOVERNANCE

Why in the news?

Recently, 11th Review Conference of Parties to the NPT concluded without agreement on a consensus outcome document as **U.S and Iran sparred over Tehran's nuclear programme**.

More on news

- With no review agreement reached for the third consecutive time, the treaty - cornerstone of global non-proliferation and disarmament- remains in force but diminishing its legitimacy.
- At the last treaty review in 2022, **Russia blocked agreement** on a final document over its **invasion of Ukraine** and references to **Moscow's occupation of Zaporizhzhia nuclear power plant**, Europe's largest.

Global Nuclear Governance Architecture

Treaties/Agreements/ Institutions	Detail
International Atomic Energy Agency (IAEA), 1957	• Primary **global nuclear governance institution** for promoting safe, secure and non-military nuclear technologies. • **India signed Additional Protocol (AP) to IAEA safeguards** agreement in 2009. ○ India's ratification of IAEA AP in 2014 brought its civilian nuclear facilities under IAEA safeguards.
Outer Space Treaty (OST), 1967	• **Prohibits placing of nuclear weapons in Earth's orbit**, on celestial bodies or in outer space. • **India is a member** of OST.
Non-Proliferation of Nuclear Weapons (NPT), 1968	• **Entered into force in 1970** to prevent spread of nuclear weapons, promotes disarmament and peaceful uses of nuclear energy. • **India considers NPT a biased framework** as it divided the world into "nuclear haves" and "nuclear have-nots."
Seabed Treaty, 1971	• **Bans states** from **employing nuclear weapons** and other weapons of mass destruction on **ocean floor beyond a 12-mile coastal zone**.
Conference on Disarmament (CD), 1979	• **India supports CD** as the **world's single multilateral disarmament negotiating forum.** • **65 member** states **including India**.

Comprehensive Nuclear-Test-Ban Treaty (CTBT), 1996	• Bans all nuclear test explosions, whether for military or civilian purposes. • **India did not sign** it due to lack of time-bound disarmament commitment by nuclear-weapon states.
Treaty on the Prohibition of nuclear weapons (TPNW), 2017	• **Came into force in 2021** which is **first legally binding multilateral agreement** to ban nuclear weapons. • **Signatories: 95. Parties: 74** • **India did not sign** as the treaty does not **constitute or contribute to the development** of customary international law, nor does it set any new standards or norms.
4 Multilateral Export Control Regimes	• **Nuclear Supplier Groups (NSG), 1974:** Established post-India's 1974 nuclear test (**Operation Smiling Buddha**) to prevent nuclear exports for weapon-making. ○ **India** wants NSG membership **(currently not member)** to enhance its nuclear power capacity and its need for raw nuclear materials. • **Missile Technology Control Regime (MTCR):** Seeks to limit the risks of **proliferation of weapons of mass destruction (WMD)** by controlling exports of goods and technologies that could contribute to delivery systems. **35 members** (including **India since 2016**). • **Wassenaar Arrangement**: Prevent destabilizing arms build-ups in areas of conflict and to stop weapons from falling into the hands of terrorists. (**India joined in 2017**) • **Australia Group:** Allow exporting or trans-shipping countries to **minimise the risk of assisting chemical and biological weapon (CBW) proliferation.** (**India joined in 2018**)

Success of Nuclear Governance

- **Non- proliferation:** NPT has helped prove wrong the mid-20th century predictions that 20 to 30 states would acquire nuclear weapons.
  - Today, **only 9 countries possess nuclear weapons**, indicating relative success of global non-proliferation efforts.
- **Reduction in Global Nuclear Arsenals:** Arms control agreements and strategic dialogues, particularly between USA and Russia, led to a substantial reduction in nuclear stockpiles after Cold War.
  - E.g. Strategic Arms Reduction Treaty (START) and **new START limited each party to a maximum of 1,550 deployed strategic nuclear warheads**, significant reduction from Cold War-era levels.
- **Verification and Safeguards System:** IAEA created an institutional mechanism for monitoring civilian nuclear programmes and detecting diversion of nuclear materials.
  - In 2024, IAEA applied safeguards in 190 states, **conducted over 3,000 inspections at more than 1,300 facilities,** making it one of the most extensive verification systems in international governance.
- **Nuclear-Weapon-Free Zones (NWFZs):** UN General Assembly reaffirmed (Article VII of NPT) in 1975 to establish NWFZs to **strengthened regional security and reinforced norm against nuclear proliferation.**
  - Several regions including Latin America, Africa, Southeast Asia, and South Pacific have legally committed themselves to remain free of nuclear weapons by Treaty of Tlatelolco, Pelindaba, Bangkok, Rarotonga respectively.
- **Multilateral Nuclear Governance:** The emergence of institutions such as IAEA, export-control regimes like NSG has provided mechanisms for monitoring, regulation, and cooperation on nuclear issues.

Challenges Associated with Nuclear Governance

- **Persistent Nuclear Proliferation Risks:** Concerns over North Korea's nuclear weapons programme and disputes surrounding Iran's nuclear activities highlight limitations of existing non-proliferation mechanisms.
- **Ineffective Global Platforms:** Geopolitical divisions, competing national interests hinder consensus-building in multilateral nuclear forums.
  - E.g. A four-week UN conference reviewing NPT ended without agreement.
- **Lack of participation**: Important **nuclear agreements lack universal participation**, limiting their effectiveness.
  - E.g. CTBT has not entered into force due to pending ratifications by key states.

- **Slow Progress towards Nuclear Disarmament:** Nuclear-weapon states have made limited progress toward their disarmament commitments despite repeated international calls for reductions.
  - According to SIPRI, approximately **12,241 nuclear warheads existed globally in early 2024.**
- **Discriminatory Nature:** Global nuclear governance framework is often criticized for institutionalizing unequal rights and obligations between recognized nuclear-weapon states and non-nuclear states.
  - E.g. NPT recognizes only five nuclear-weapon states based on a historical cut-off date.

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Way ahead

- **Revitalize Arms Control and Disarmament Efforts:** Negotiate new arms-control agreements and establish a credible roadmap for gradual, verifiable reductions in nuclear arsenals.
- **Strengthen Non-Proliferation and Verification Mechanisms:** Enhance powers and technological capabilities of IAEA to detect undeclared nuclear activities and ensure treaty compliance.
- **Reform Institutions:** Make forums such as the NPT Review Conference and Conference on Disarmament more representative, effective, and capable of consensus-building.
- **Develop Rules for Emerging Technologies:** Create international norms governing AI, cyber warfare, hypersonic weapons, and autonomous systems that could undermine nuclear stability.
- **Enhance Nuclear Security and Counter-Terrorism Cooperation:** Strengthen protection of nuclear materials and facilities through improved cybersecurity, intelligence sharing, and measures against illicit trafficking.
- **Promote Strategic Dialogue and Confidence-Building:** Expand crisis communication channels, transparency measures, and military-to-military engagement to reduce risks of miscalculation and accidental escalation among nuclear-armed states.

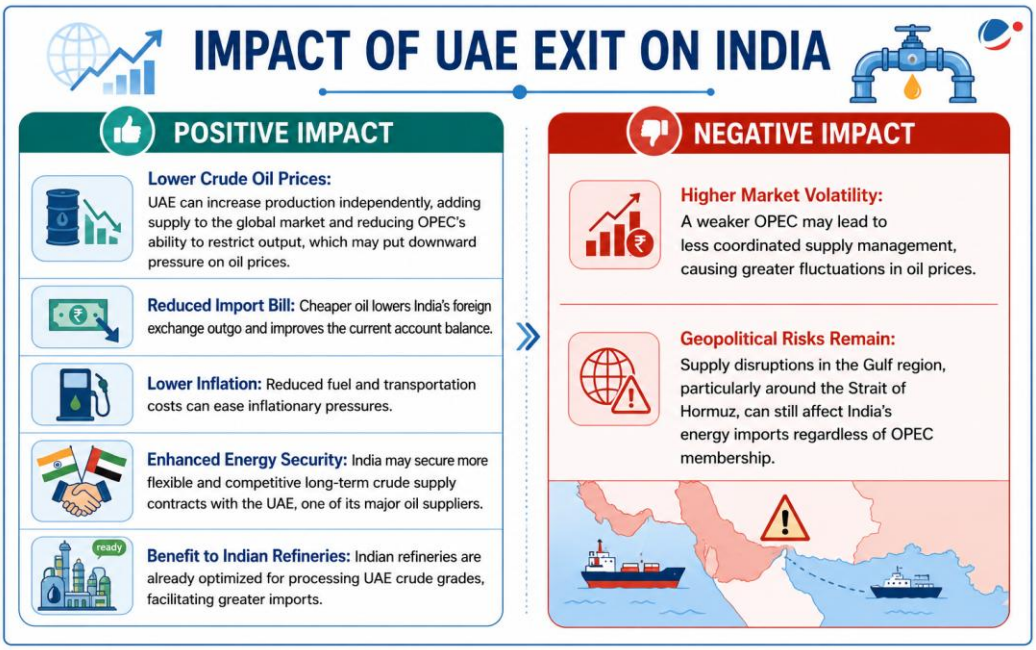
2.6. UAE LEAVES OPEC AND OPEC+

Why in the News?

The United Arab Emirates (UAE) officially exited the Organization of the Petroleum Exporting Countries (OPEC) and OPEC+.

Why the UAE Left OPEC and OPEC+?

- **Regional Security:** A lack of solidarity from Arab and Gulf region in the face of Iranian missile strikes on UAE.
- **Production Quota disputes**: OPEC quotas limited the UAE from fully utilizing its growing oil production capacity.
- **Energy transition and Economic diversification**: The UAE sought to monetize oil reserves quickly and invest in a post-oil economy.



- **Strategic autonomy**: The UAE wanted greater independence in its energy and foreign policy decisions.
- **Geopolitical**: Divergent interests with Saudi Arabia on regional issues such as Yemen, Sudan, and broader Gulf geopolitics.

About OPEC

- It is a **permanent intergovernmental organization** of 11 oil-exporting developing nations.
- **Genesis:** It was created at the Baghdad Conference in 1960, by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela.
- **HQ:** Vienna (Austria)
- **Objective:** To co-ordinate and unify petroleum policies among Member Countries, to secure fair and stable prices for petroleum producers.
  - OPEC influences the **Benchmark Prices** by making use of its large share of crude production to increase or decrease the available supply of oil in the market.
- **Members:** After the Exit of UAE, OPEC currently has 11 members namely Algeria, Republic of Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, and Venezuela
  - India is not a member.
- **Countries who were members in the past:** Ecuador, Indonesia, Qatar, Angola, UAE.

What are Benchmark Prices?

- **Benchmark prices** are internationally recognized reference prices for crude oil that serve as a pricing standard for buying and selling oil worldwide.
- **Major Oil Benchmarks**
  - **Brent Crude**: The world's most widely used oil benchmark, based on four light, sweet crude streams produced in the North Sea.
  - **West Texas Intermediate (WTI):** A light, sweet U.S. crude oil benchmark priced at Cushing, Oklahoma.
  - **Dubai/Oman**: A medium, sour crude benchmark used mainly to price Middle Eastern oil exports to Asian markets.

About OPEC+

- **OPEC+:** In response to falling oil prices driven by significant increase in U.S. shale oil output, **OPEC signed an agreement** with **10 other oil-producing countries** in 2016 to create OPEC+.
  - Together, the OPEC+ framework has historically controlled about **41% of the global oil supply**.
- **Members:** Russia, Azerbaijan, Kazakhstan, Bahrain, Brunei, Malaysia, Mexico, Oman, South Sudan, and Sudan.

2.7. NEWS IN SHORTS

2.7.1. GROWING RUSSIA-CHINA RELATIONS

Russian President's recent China visit highlighted Russia's growing dependence on China, with both sides signing 40+ agreements and reaffirming support for a multipolar world order against Western dominance.

Implications on India

- **Erosion of Russia as a Strategic Balancer:** Russia's growing dependence on China weaken its neutrality in India-China tensions.
- **Defence Vulnerabilities:** India's reliance on Russian arms faces risks due to delays in supplies (e.g., S-400, stealth frigates) and transfer of advanced platforms to China affects India's security.
- **Emerging Russia–China–Pakistan Convergence:** E.g., Russia is expanding ties with Pakistan through arms sales, discounted oil exports, etc.

- **Challenges in Multilateral Forums**: E.g., Cooperation between Russia and China in Shanghai Cooperation Organisation
- **Pressure on India's Strategic Autonomy:** Russia-China proximity and uncertain US policies constrain India's multi-alignment strategy.

2.7.2. INDIA–NEW ZEALAND FREE TRADE AGREEMENT (FTA) SIGNED

FTA aligns with India's **"Viksit Bharat 2047" vision** to integrate into global value chains and empower MSMEs, farmers, women, and youth.

Key Details of FTA

- **100% Duty-Free Access:** New Zealand will eliminate duties on **all Indian exports**, providing a major boost to **labour-intensive sectors** like MSMEs, textiles, leather, footwear, and gems etc.
- **FDI Commitment:** New Zealand committed to a **USD 20 billion investment** in India over the next 15 years.
- **Protection of Sensitive Sectors: India has offered market access** in 70% of the tariff lines, covering 95% of New Zealand's Bilateral Trade.
  - ~30% of tariff lines are in the **exclusion category, to shield farmers and domestic industries.** E.g. dairy, sugar, vegetable products like onions, aluminium etc.
- **Rules of Origin:** A robust framework of **Product Specific Rules of Origin (PSRs)** established to effectively prevent misuse of trade benefits.
- **Talent & Mobility: Student Mobility and Post Study Work Visa** for STEM Graduates, Skilled Professionals; an annual quota of 5,000 **Temporary Employment Visas** for skilled Indians.
- **Globalizing AYUSH: First-time** provision by New Zealand to recognize and facilitate trade in India's **traditional medicine** systems, including Ayurveda and Yoga.
- **Others: Agricultural Productivity Partnership;** Market Access across 118 **services** sectors, with Most-Favoured Nation (**MFN**) treatment in 139 sectors.

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India-New Zealand Relations

- **Market:** New Zealand is India's **second-largest trading partner in the Oceania** region.
- **Trade Volume:** Bilateral merchandise trade **grew by 49%** to reach **USD 1.3 billion** in 2024–25.
- **Positive Trade Balance:** India exports more to New Zealand than it imports.
- **Diaspora: ~300,000-strong Indian diaspora** (~5% of New Zealand's population) acting as a cultural and economic bridge.

2.7.3. INDIA-VIETNAM

India and Vietnam upgraded bilateral relationship to "Enhanced Comprehensive Strategic Partnership".

- The "Enhanced Comprehensive Strategic Partnership" marks an elevation of the Comprehensive Strategic Partnership established between India and Vietnam in 2016.
- This decision was taken during the visit of the President of Vietnam to India.

Key Highlights / Outcomes of Visit

- **Trade & Economic Cooperation:** Bilateral trade target set at **$25 billion by 2030** (currently around $16 billion).
  - Both sides pushed for Early review and conclusion of ASEAN-India Trade in Goods Agreement (AITIGA).

- **13 strategic MoUs Signed:** Across critical minerals cooperation, Digital Connectivity & FinTech, healthcare, digitisation of ancient Cham manuscripts, etc.
- **Defence & Security Cooperation:** Both countries will establish **Strategic Diplomacy–Defence Dialogue (2+2).**
- **Maritime Integration:** Vietnam joined **Indo-Pacific Oceans Initiative (IPOI).**
  - **IPOI** is a voluntary, non-treaty initiative launched by India at East Asia Summit 2019 in Thailand to promote a free, open, and rules-based Indo-Pacific region.

Significance of Vietnam for India

- **Act East Policy:** Vietnam is a core partner of India in ASEAN and a critical partner in India's Act East policy, Vision MAHASAGAR and the Indo-Pacific vision.
- **Geostrategic location:** Vietnam's position in the Indo-Pacific is crucial for maintaining secure and stable trade routes.
- **Countering China:** Both support **freedom of navigation and a rules-based order** in the South China Sea in accordance with the 1982 UNCLOS.
- **Supply Chain Diversification:** Vietnam's cooperation in imports and rare earths supports India's manufacturing ecosystem, helps reduce global dependence on Chinese supply chains.
- **Energy security**: Indian companies have invested in oil and gas exploration projects in Vietnamese waters in South China Sea which are extremely rich in hydrocarbon reserves.

2.7.4. INDIA-EU TRADE & TECHNOLOGY COUNCIL (TTC)

India and EU launched **€15.2 million (~₹169 crore) joint initiative** to **strengthen EV battery recycling** under the India-EU Trade and Technology Council (TTC)-working group-2.

- The initiative will be funded through the **EU's Horizon Europe programme** and India's **Ministry of Heavy Industries**.

About India-EU Trade and Technology Council (TTC)

- **Launch:** February **2023**.
- **Objective:** It aims to push both regions toward **strategic autonomy** by actively **reducing the EU's dependence on China** and **India's reliance on Russia.**
- **Three Core Working Groups (WGs):**
  - **WG 1:** Strategic Technologies, Digital Governance and Connectivity.
  - **WG 2:** Green and Clean Energy Technologies.
  - **WG 3:** Resilient Value Chains, Trade and Investment.

2.7.5. THUCYDIDES TRAP

The Chinese President raised the **"Thucydides Trap"and Peloponnesian War** in talks with the US president in Beijing.

About Thucydides Trap:

- **Origin:** The term was coined by Harvard political scientist **Graham Allison.**
  - He named it after the ancient **Greek historian Thucydides who chronicled the Peloponnesian War**.
    - **Peloponnesian War was** long war between Athens and Sparta started in 431BC.
- **Meaning:** It describes the danger that emerges when a rising power threatens to displace a dominant one, leading to conflict.
- **Modern Relevance:** it is used to analyze the complex and tense geopolitical relationship such as between the United States (established power) and China (rising global power).

2.7.6. RULES GOVERNING THE FREEDOM OF NAVIGATION (FON) IN INTERNATIONAL WATERS

Iran has attacked ships responding to the US seizure of Iranian ships in **conflict** in **Strait of Hormuz**.

- At its **narrowest**, the strait lies entirely within the **overlapping territorial waters of Iran and Oman,** and is governed by transit passage under UNCLOS.

Institutional Architecture Governing FoN in International Waters

- **United Nations Convention on the Law of the Sea (UNCLOS)**:
  - **Core Principles:** Global Commons, Freedom of navigation, resource rights, and dispute resolution.
  - **Defines maritime zones:**

Maritime Zones	Length	Rights Applicable
Territorial Sea	**Upto 12 Nautical miles**	• **Transit Passage** is applied. It recognises free, unhindered passage to foreign ships but with few restrictions such as purpose, routes, delay, loading etc. • **"Innocent" passage rights:** Applied to merchant ships and even warships. 'Innocent' means the ship does not pose a threat to the nation.
Exclusive Economic Zones (EEZ)	**Upto 200 nautical miles**	• **FoN is not absolute.** • **Sovereign rights of states:** Over resource exploitation and energy production, along with jurisdiction over artificial structures, marine scientific research, environmental protection, and other UNCLOS-defined duties.
High Seas	**Beyond EEZ**	• **Res communis:** Open to all states. • **Exceptions**: Hot pursuit of vessels that have committed crimes in territorial waters, explicit authorisation by the UN Security Council, vessels without nationality, or cases where the flag state consents to interception.

Key Challenges to FoN in International Waters

- **Geopolitical & Strategic**: FoN is often disrupted as states use chokepoints and sea lanes as tools of strategic leverage, blockades, and power rivalry.
- **Legal Ambiguity**: Differing interpretations of UNCLOS rules and weak enforcement mechanisms.
- **Unilateral Actions & Sanctions**: U.S. intercepted ships trading in Venezuelan oil and carrying oil to Cuba under domestic laws.
- **Security Threats**: Piracy, terrorism, etc.

2.7.7. PERSIAN GULF STRAIT AUTHORITY (PGSA)

Iran has announced the **establishment of a new regulatory body (PGSA)** to oversee and manage operations in the strategically significant Strait of Hormuz.

About Persian Gulf Strait Authority (PGSA)

- It is responsible for **monitoring developments and coordinating operations** related to the vital shipping corridor.
- Under the new system, vessels will be **required to follow directives issued by the authority** and secure transit permits before entering the Strait of Hormuz.
- It will operate **transit toll mechanism** for the Strait of Hormuz which has not been unveiled by Iran yet.

2.7.8. INDIAN OCEAN RIM ASSOCIATION (IORA)

India hosted the 10th Indian Ocean Dialogue (IOD) under the theme **"Indian Ocean Region in a Transforming World."**

- IOD is a flagship **Track 1.5 platform** under **Indian Ocean Rim Association** (IORA)

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About IORA

Genesis
An inter-governmental organization established in 1997.

Objective
Encourage regional cooperation and sustainable development within the Indian ocean region.

Secretariat
Ebène, Mauritius

Members
23 member states and 12 dialogue partners.

Institutional Mechanisms of IORA
- **IORA Council of Ministers:** Highest decision-making body.
- **IORA Chair:** The Council of Ministers, on voluntary offer by Member States, elects a Chair of the Association for a period of two years.
- India has assumed the Chairship of IORA for the 2025-27 period.

2.7.9. ASIAN INFRASTRUCTURE INVESTMENT BANK (AIIB)

AIIB launched an **Energy, Food Security and Economic Resilience Facility** to support members whose development may be affected by the conflict in the Middle East.

- It offers a time-bound financing envelope of up to USD10 billion over two years.

AIIB ASIAN INFRASTRUCTURE INVESTMENT BANK

About AIIB

Headquarters: Beijing, China.

- **Establishment:** Multilateral Development Bank established in 2016.
- **Headquarters:** Beijing, China.
- **Objective:** To promote sustainable infrastructure development, regional connectivity and economic growth in Asia.
- **Membership:** Over 111 approved members worldwide.
  - **India** is a founding member and the second-largest shareholder after China.
  - **India** is also the largest borrower from AIIB.

2.7.10. DEVELOPMENTS AND TRENDS IN MULTILATERAL PEACE OPERATIONS, 2025 FACTSHEET

Released by **SIPRI (Stockholm International Peace Research Institute),** it highlights the key challenges confronting multilateral peace operations.

Key Challenges faced by Peacekeeping Operations

- **Funding Shortfall:** Unpaid donor contributions (from countries like the USA) caused a $2 billion UN shortfall, forcing deep cuts to peace personnel numbers.
- **Geopolitical Gridlock:** UN Security Council veto threats complicate mandate renewals. E.g., U.S. is pushing for the termination of missions like the UN Interim Force in Lebanon (UNIFIL)
- **Defunding of Regional Missions:** E.g., EU redirecting its European Peace Facility (EPF) funding from Africa towards Ukraine and West Asia.
- **Rise of Ad Hoc Interventions:** E.g., Middle powers (like UAE) are using bilateral military agreements that prioritize short-term security over long-term conflict resolution.
- **Unequal Burden on the Global South**: All top 10 military and police-contributing nations including India are from the Global South.
- **Historic Lows in Personnel Deployments**: There were 58 active peacekeeping operations in 34 countries in 2025, dropping below the threshold of 60 for the first time since 2016.

Strengthening peacekeeping operations requires **predictable funding**, **greater burden-sharing** by developed countries, and stronger cooperation with regional organizations to address evolving global security challenges.

2.7.11. GLOBAL NETWORK AGAINST FOOD CRISES

Global Network Against Food Crises released 10th edition of **Global Report on Food Crises, 2026.**

- As per the report, more than **266 million people in 47 countries** faced high levels of acute food insecurity in 2025.
- **Conflict has overtaken extreme weather** as main driver.

About Global Network Against Food Crises

- **Genesis:** Launched in **2016** by **Food and Agriculture Organization** (FAO) with **European Union** (EU) and WFP (**World Food Programme**) at World Humanitarian Summit.
- **Purpose**: Multistakeholder initiative of humanitarian and development actors, united by commitment to tackle **root causes of food crises and to promote sustainable solutions.**

Related News: Hunger Map

World Food Programme has launched a new AI-assisted food alert platform **Hunger Map**, enhances real-time monitoring to support humanitarian efforts in combating global hunger.

About WFP (HQ: Rome)

- The WFP is the **largest humanitarian agency saving lives** in emergencies & using assistance to help communities become self-sufficient and resilient to shocks.
- WFP was established in **1961 by United Nations General Assembly & Food and Agriculture Organization (FAO).**
- It has a presence in **over 120 countries.**
- **Funding**: **Voluntary donations** from governments, corporates and private donors.

2.7.12. INTERNATIONAL MIGRATION REVIEW FORUM 2026

- The **2nd International Migration Review Forum (IMRF) 2026** was recently held in **New York** to reviews **Global Compact for Safe, Orderly and Regular Migration** (GCM) progress, identifies gaps, shares best practices, and guides future migration governance.
  - Held every four years (quadrennial).
- **Concerns highlighted:**
  - Uneven access and rising displacement
    - Most displacement is driven by a **mix of conflict, environmental pressures, and structural vulnerabilities.**
  - Migrant deaths, detention and exploitation of migrants, and
  - Growing discrimination, and anti-migrant narratives.
- **Six Priorities highlighted by UN Secretary**
  - Rights-based migration governance,
  - Protect migrants in distress and ensure that returns are safe and dignified
  - Crackdown on traffickers and smugglers,
  - Expand regular migration pathways for students, workers, families, and people seeking safety and protection.
  - Address root causes through development and jobs
  - Strengthen international cooperation

Global Compact for Safe, Orderly and Regular Migration (GCM)

- Adopted by the United Nations General Assembly on 19 December 2018.
- It is the **first intergovernmental agreement to cover all dimensions of international migration**.
  - It is a **non-legally binding, cooperative framework** that upholds the sovereignty of States and their obligations under international law.
- The Global Compact provides an unprecedented opportunity **to strengthen migration governance, address the challenges associated with migration in today's world**, and harness the contribution of migration to sustainable development.
  - The Compact is rooted in the **2030 Agenda for Sustainable Development**, in which Member States commit to cooperate internationally to facilitate safe, orderly and regular migration.

2.7.14. WORLD MIGRATION REPORT 2026

International Organisation for Migration released the World Migration Report 2026.

Key Highlights

- **Global Migration: ~304 million people** were living outside their country of birth in 2024, accounting for **3.7% of the global population**, up from **2.9% in 1990**.
- **Top Corridors: Mexico-US (1st),** Afghanistan-Iran (2nd), Syria-Turkiye (3rd), Russia-Ukraine (4th), **India-UAE (5th) and India-US (6th).**
- **Migration driving development: Remittances** reached an estimated **$905 billion** globally in 2024, including **$685 billion** to **low- and middle-income countries**
- **India related:**
  - **Indian migrants in UAE** were over **3 million** while **Indians in US** were around **3.2 million (second-largest** after Mexicans).
  - India had a **higher share of female immigrants** than male immigrants.
  - **Male Emigration from India:** Largely due to labour migration to Gulf etc.

2.7.15. REGIONS IN NEWS

- **Belgorod Region (Russia):** Missile and drone strike on **Russia's Belgorod region** caused casualties and damaged critical energy infrastructure.
  - Situated in southwestern Russia, also shares a state border with Ukraine.
  - Industrial hub, it produces one-third of Russia's iron ore and leads in agriculture.

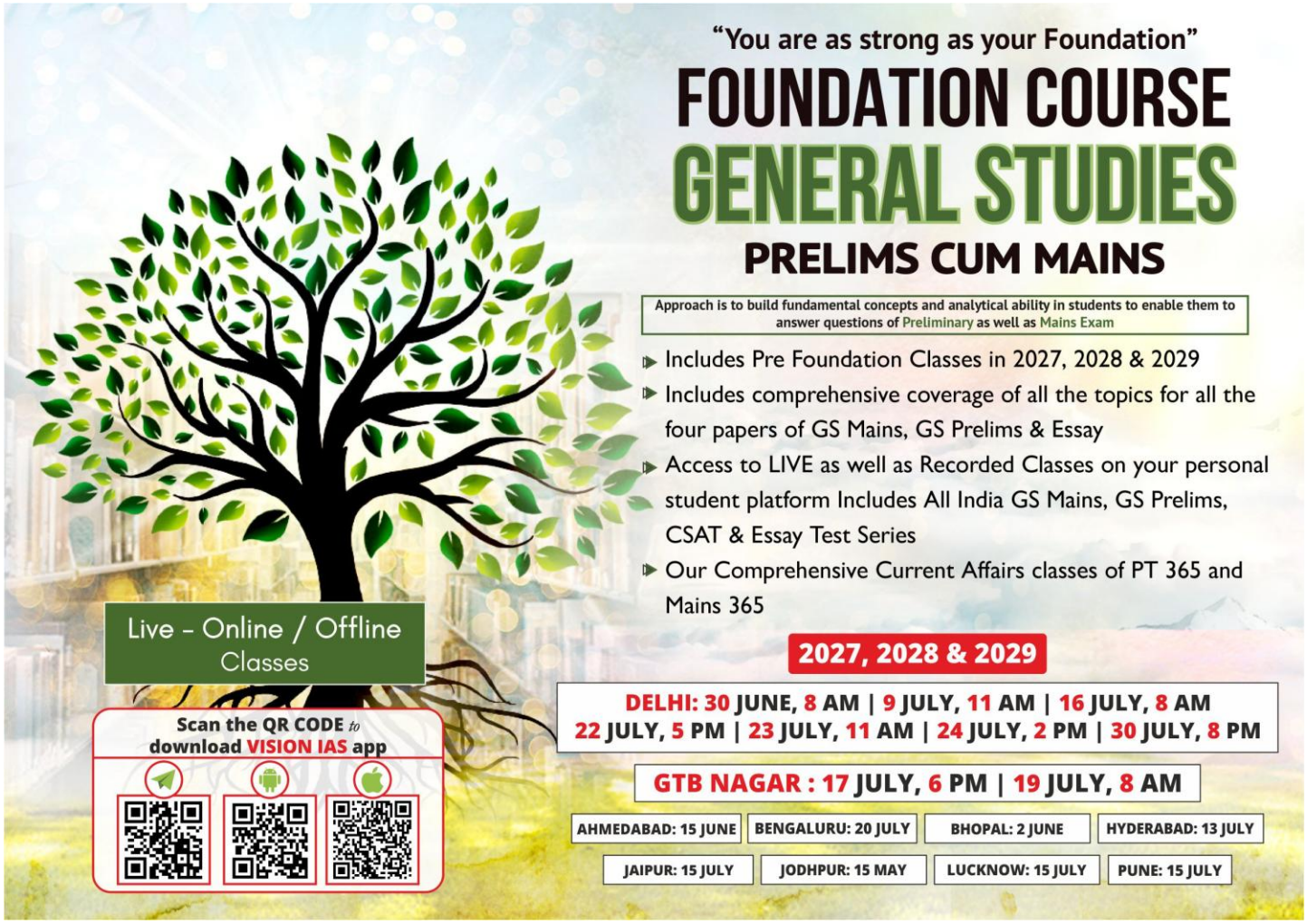
- **Falkland Islands:** The UK rejected any change to sovereignty over the Falkland Islands, as United States policy regarding the island remains under review.
  - It is internally **self-governing overseas territory** of the United Kingdom in the South Atlantic Ocean.
  - The Falkland Islands are an archipelago comprising two large island**s (East Falkland and West Falkland) and several hundred smaller ones.**
  - It lies about **480 km northeast** of the southern tip of **South America and a similar** distance east of the **Strait of Magellan.**
  - The islands are claimed by **Argentina**, and the dispute led to a **war in 1982**.
- **Pratas Island:** Chinese Coast Guard ship was recently spotted near Taiwan's strategically located **Pratas Islands** at top of South China Sea.
  - Also known as **Dongsha Island,** are a small group of three islands forming a coral atoll l**ocated in the South China Sea, governed by Taiwan.**
  - Characterized by **circular atoll structure,** with Dongsha Island being only island above sea level, while **other two (North Vereker Bank and South Vereker Bank) are submerged.**
  - Contested between **China and Taiwan.**
  - **Other Islands of South China Sea:** Spratly Islands, Paracel Islands, and Scarborough Shoal.

2.7.16. B'NEI MENASHE COMMUNITY

Over 240 members of the **B'nei Menashe community from Manipur and Mizoram** were relocated to Tel Aviv by the Israel government**.**

About B'nei Menashe community

- They are a **Jewish-identifying community** from **Manipur and Mizoram.**
- They belong to **Mizo-Kuki tribes,** who claim descent from one of the **"Ten Lost Tribes of Israel" (Tribe of Menashe).**
- The tribe was exiled in **722 BC by Assyrian conquerors.**
- Bnei Menashe, which is **Hebrew for the children of Manasseh, the first son of Joseph.**



3. ECONOMY

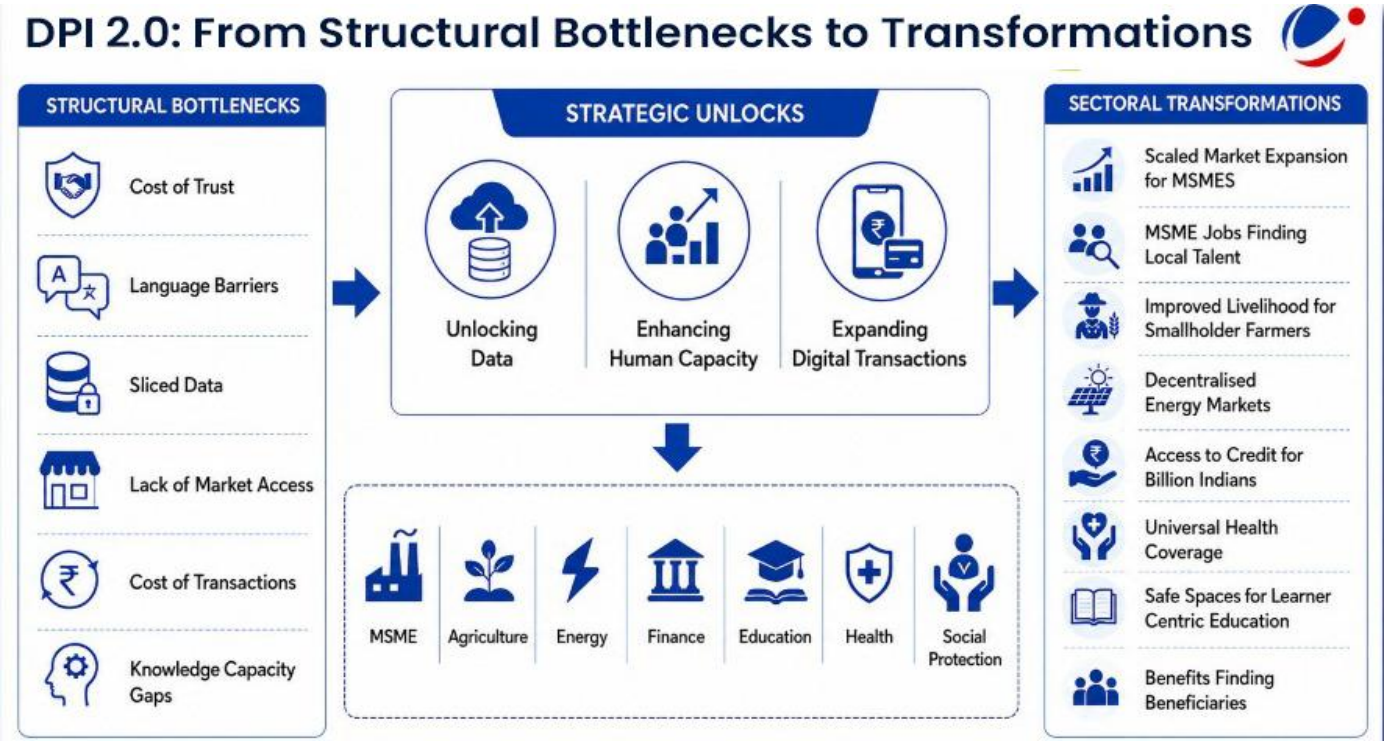
3.1. DIGITAL PUBLIC INFRASTRUCTURE (DPI)

Why in News?

NITI Aayog launched the **"DPI@2047 for Viksit Bharat"** strategic roadmap to advance inclusive, livelihood-centric, and productivity-led growth.

Key Highlights of the report

- The report recommends a two-phase approach, namely DPI 2.0 (2025–2035) for immediate focus to drive livelihood-led growth at scale, followed by DPI 3.0 (2035–2047) to enable broad-based prosperity.



- **Core Elements of DPI 2.0**
  - **Eight Sectoral Transformations:** Designed to systematically dismantle structural bottlenecks across critical core sectors: MSMEs, agriculture, education, and health.
  - **Systemic Enablers:** Aims to strengthen foundational networks across credit, decentralized energy, and benefit delivery.
  - **Four Execution Imperatives:**
    - District-led demand aggregation
    - Scaling technology entrepreneurship
    - Leveraging Artificial Intelligence (AI)
    - Deploying cross-sector unlocks (through better data usage, digital transactions, stronger human capacity, and the democratisation of AI).

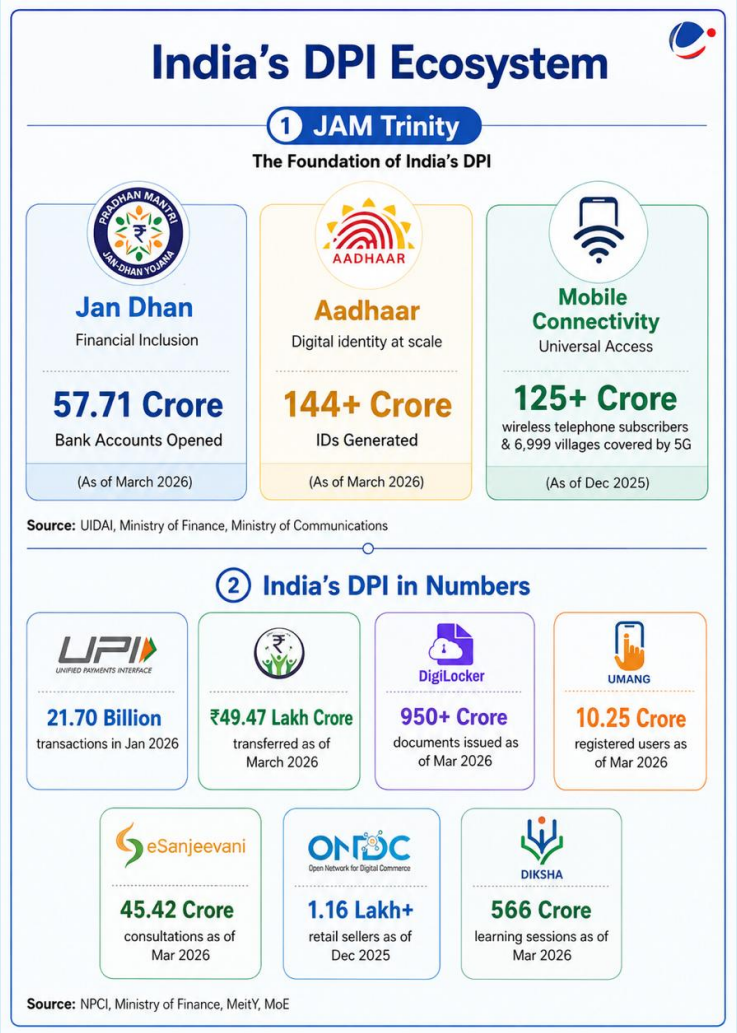
About Digital Public Infrastructure

- It refers to foundational, interoperable digital systems primarily built around **digital identity, instant payments, and consent-based data sharing.** It enables governments, businesses, and citizens to interact securely.
- **Characteristics of DPI:**
  - **Interoperability:** Integrates seamlessly with other systems and platforms, enabling secure and efficient data exchange.

- **Scalability:** Designed for large-scale adoption, capable of handling millions or like in India's case, billions of users.
- **Inclusivity:** Upholds the non-excludable and non-rivalrous principles of a public good, ensuring unrestricted access for governments, businesses, and individuals, including marginalized communities.
- **Governance:** Requires robust governance through transparent institutional foundations of DPI frameworks, accountable oversight, and participatory policymaking that safeguard public interest.

DPI Ecosystem of India

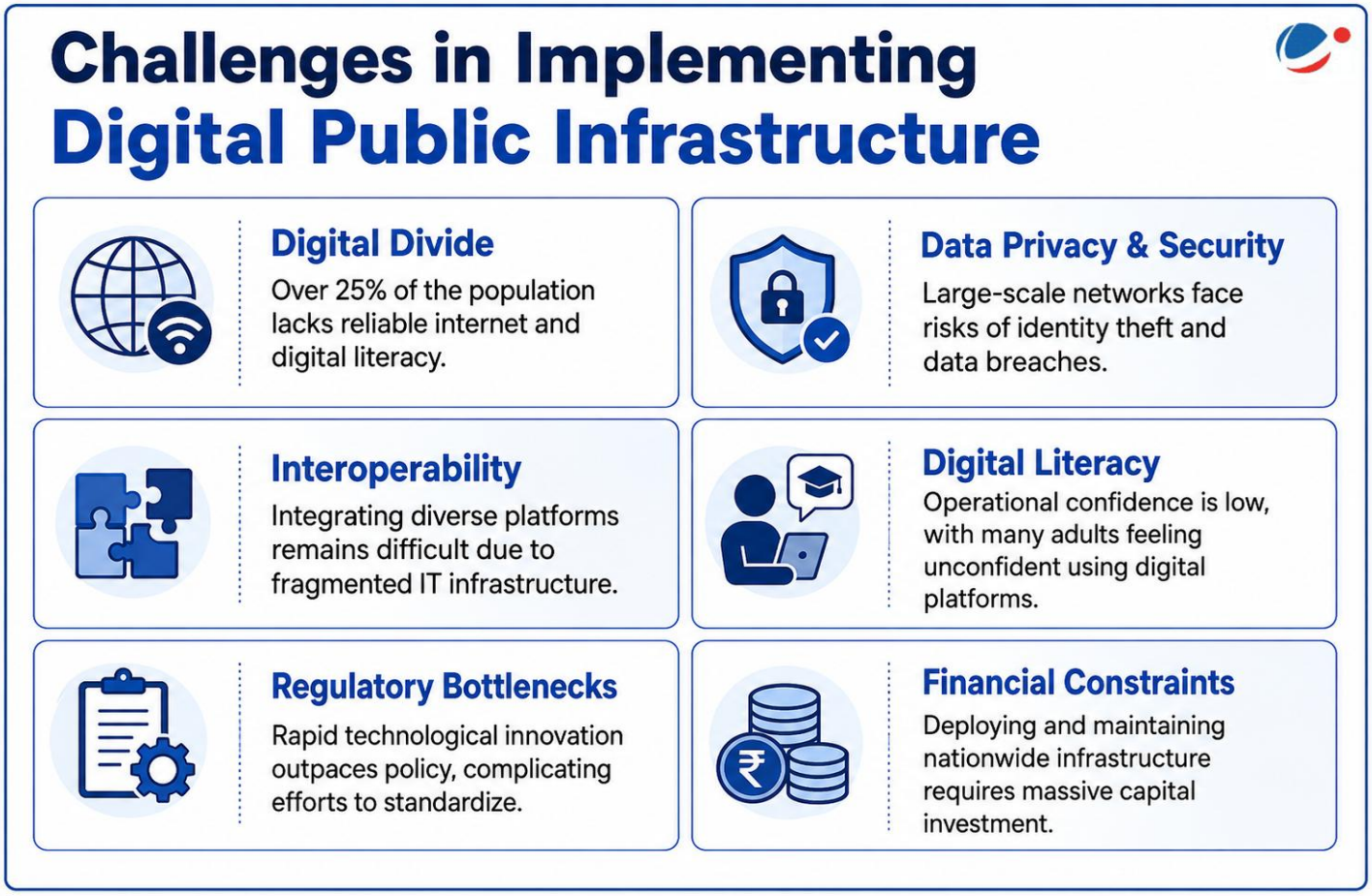
- **Foundational JAM Trinity: Jan Dhan Yojana, Aadhaar** and **High smartphone adoption and wireless connectivity** are the bedrock of India's DPI Stack.
- **Sector-Specific Expansions of India's DPI Stack**
  - **Economic infrastructure:** Unified Payments Interface (UPI); Public Financial Management System (PFMS); Account Aggregator (AA) Framework; Open Network for Digital Commerce (ONDC); Government e-Marketplace (GeM); Goods and Services Tax Network
  - (GSTN), etc.
  - **Citizen Service Delivery Platforms:** DigiLocker; Unified Mobile Application for New-Age Governance (UMANG); eCourts etc.
  - **Healthcare & Nutrition:** ABHA (Ayushman Bharat Health Account); National Non-Communicable Diseases Platform (NCD); e-Sanjeevani; e-Hospital; POSHAN Tracker; Aarogya Setu; Co-WIN etc.
  - **Education and skilling:** DIKSHA (Digital Infrastructure for Knowledge Sharing), Skill India Digital Hub (SIDH), National Knowledge Network (NKN), National Academic Depository (NAD) etc.
  - **Governance Capacity & Coordination:** PM GatiShakti; e-Office; API Setu etc.
  - **Others:** FASTag (for cashless, contactless toll payments), DigiYatra (facial recognition-based biometric system for seamless air travel and airport entry); AgriStack (farmer-centric DPI designed to enable interoperable land, crop, and scheme data) etc.



Transformative role played by DPI in India

- **Economic growth:** DPI contributed 0.9% to India's GDP in 2022 (with projections of 4.2% by 2030).
- **Inclusive growth:** MSMEs registered under GST grew to 1.5 crore in December 2024 (from 5 lakh in 2017-18), etc.
- **Financial Inclusion:** India achieved 80% bank account penetration in eight years, a feat Bank for International Settlements (BIS) estimated would have taken 47 years.
- **Plug leakages in the social benefits:** Leveraging JAM Trinity (Jan Dhan, Aadhaar, Mobile), Direct Benefit Transfer (DBT) mission created the world's largest government-to-person (G2P) payment infrastructure, significantly plugging social benefit leakages.
  - ₹3.48 lakh crore was saved through leakage prevention with DBT.
- **Increase mobile penetration:** Aadhaar-based e-KYC increased households' ownership of mobiles in India to 85% by May 2025 from 15% in 2026.

- **Hockey Stick Effect:** Explosion of new services previously unimaginable providing rapidly accelerating growth following 'hockey-stick' curve.
  - For instance, DPI enabled startups created over $100 billion in market value.
- **DPI diplomacy:** As of February 2026, Government of India has signed Memoranda of Understanding (MoU) and agreements with **24 countries** for cooperation on India Stack and Digital Public Infrastructure.
  - Further, during **India's G20 presidency,** New Delhi Leaders' Declaration explicitly recognised **DPI as a development accelerator** and **Global Digital Public Infrastructure Repository** was launched as a knowledge platform to share lessons and practices.



Way Forward: Recommendations for DPI 2.0

- **Decentralized Execution**: Empower states to lead DPI 2.0 initiatives with guidance from the Government of India and NITI Aayog.
- **Collaborative 2-year Iterative cycles of Transformations**: Utilize two-year cycles to refine and validate scalable models before ecosystem-wide expansion.
- **First cycle (2026-2027) focus on MSME and Agriculture**: Focus 2026–2027 efforts on three MSME and Agriculture transformations, deploying lighthouse pilots in six states followed by broader rollout.
- **Neutral ecosystem body for global engagement**: Establish a neutral, expert-backed body by 2027 to spearhead international collaboration on DPI and AI for public good.

Digital Current Affairs
Read our previous coverage on DPI

Conclusion

The global technological advantage is shifting from pure capital and chip power to a nation's ability to connect digital infrastructure with economy-wide diffusion and impact. By merging DPI, AI, and domestic entrepreneurship, India aims to build a vernacular, population-scale model of AI adoption.

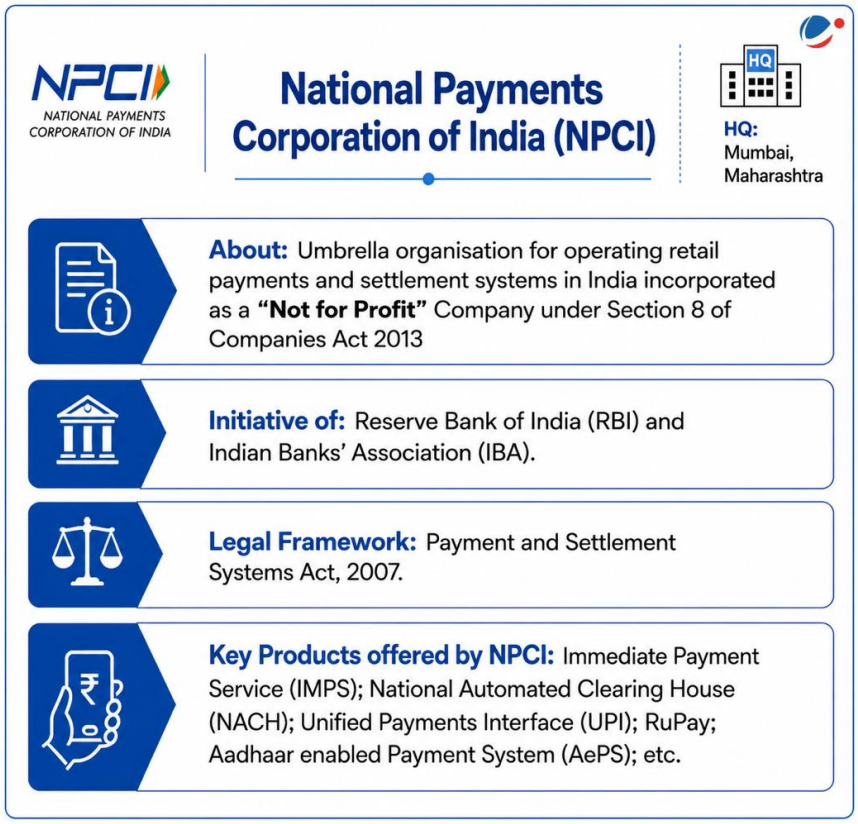
3.2. UNIFIED PAYMENTS INTERFACE (UPI)

Why in News?

Unified Payments Interface (UPI) completes 10 Years highlighting its journey from a nascent platform in 2016 to a global digital payments leader in 2026.

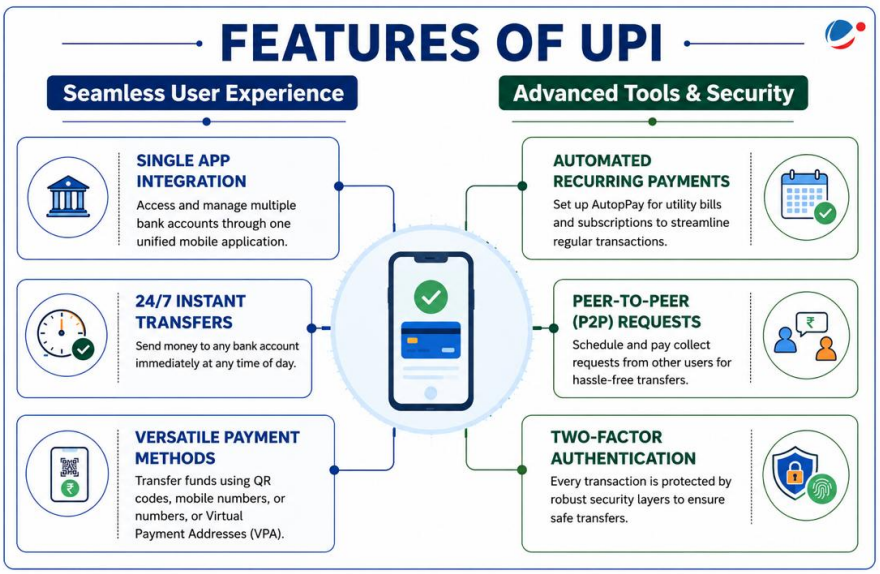
About UPI

- UPI is a real-time payment system that enables **instant, interoperable and secure** transactions between individuals and merchants.
- **Developed by:** National Payments Corporation of India (NPCI)
- It works through institutional participation where each participant bank functions as a **Remitter Payment Service Provider (PSP)** (processing outgoing transactions) and/or a **Beneficiary PSP** (receiving funds), with NPCI monitoring performance metrics for all participants.
- **Other versions of UPI**:
  - **UPI LITE:** On-Device wallet designed to process low value transactions that are below ₹1000 in a faster and pin-less manner.
  - **UPI LITE X**: Allows offline payments without internet connectivity, enhancing the existing UPI LITE functionalities in a much more effective manner.
  - **UPI Cash Point**: Allows withdrawal of cash at local shops and business correspondent outlets using UPI app.
  - **UPI One World**: Prepaid Payment Instrument (PPI) wallet powered by UPI which enables foreign nationals arriving in India and Non-Resident Indians (NRIs) to make UPI-based payments during their stay.



Transformative role of UPI played in India

- **Scaling India's Digital Payment system**
  - **Massive transaction Volumes:** Transactions grew from 2 crore in FY 2016–17 to 24,162 crore in FY 2025–26, a 12,000-fold surge in transaction volume.
  - **Deep penetration of digital payments**: In 2025, daily average of about 60 crore UPI transactions were processed.



- **Pervasive Network:** Connects over 700 banks on a single platform, capturing an 85% share of India's retail digital payments.

- **Driving Grassroots Financial Inclusion**
  - **Formalization of economy:** Swapped a cash-dependent system for a "one-tap" QR model, integrating small vendors into the formal financial sector.
  - **Credit for MSMEs:** Digital transaction logs help micro-businesses secure formal credit without physical assets.
  - **Micro-Payments:** High-volume, small-value transactions bridge the economic divide between urban hubs and rural zones.
    - Person-to-person (P2P) transactions shows widespread usage for low-value transfers with 59% transactions below ₹500.
- **Catalyzing Financial Innovation & FinTech**
  - **Open Architecture:** UPI uses open-API (Application Programming Interface) rails that allow third-party apps like PhonePe and Google Pay to build and innovate rapidly.
  - **Credit Access:** Moves past basic banking by natively supporting instant, pre-approved credit lines linked straight to UPI IDs.
- **Projecting Geopolitical Soft Power**
  - **Global recognition:** The International Monetary Fund, in its June 2025 report on growing retail digital payments, recognised UPI as the **world's largest retail fast payment system by transaction volume.**
    - Further, as per 2024 ACI Worldwide report titled Prime Time for Real Time, UPI accounts for around **49%** of global real time payment transaction volume.
  - **Global Expansion:** UPI is live in over 8 countries, including the **UAE, Singapore, Bhutan, Nepal, Sri Lanka, France, Mauritius and Qatar**, enabling smooth cross-border retail payments, tourism, and affordable trade remittances.
  - **DPI Showcase:** Serves as a population-scale public good blueprint, offering developing nations a cost-effective alternative to private or state-monopolized networks.

Challenges associated with UPI

- **Data Security & Cyber Threats:** High transaction volumes attract phishing, social engineering, and API vulnerabilities, while compromised biometric data poses unfixable security risks.
- **Zero-MDR Sustainability Dilemma:** Absence of a **Merchant Discount Rate (zero-MDR)** on default UPI transactions was critical for grassroots adoption but has created a financial sustainability challenge for banks and third-party application providers (TPAPs).
- **Cross-Border Regulatory Hurdles:** Expanding internationally requires navigating diverse multi-jurisdictional laws (such as Anti-Money Laundering).
- **Market Concentration Risks:** The ecosystem is heavily dominated by a few third-party apps (like PhonePe and Google Pay), which can hinder competition.
- **Persistent Regional Disparities:** Uneven internet penetration and low digital literacy create gaps, leaving rural and underdeveloped populations behind the digital curve.

Conclusion:

The remarkable growth of UPI, both in terms of transaction volumes and geographical reach, highlights its transformative impact on the financial landscape. As UPI continues to expand globally, it is setting new standards for digital payments, empowering citizens, enhancing economic opportunities, and contributing to India's increasing influence in the global financial arena.

3.3. ALL INDIA INDEX OF INDUSTRIAL PRODUCTION (IIP)

Why in the News?

The **Ministry of Statistics and Programme Implementation** (MoSPI) has revised the base year of IIP from **2011-12 to 2022-23** to better reflect current industrial structure and dynamics.

Major Changes in New Series of IIP

- **Base Year Revision:** It is **revised to 2022-23** under the aegis of the Technical Advisory Committee for base year revision (TAC-IIP).
  - A **base year** is a specific reference period in time used as a benchmark for comparing economic and financial data, such as production or prices.
  - In index compilation, the **base year is assigned an index value of exactly 100,** allowing subsequent data to be measured relative to it to easily determine if activity has increased or decreased.
- **Coverage:** It added **Gas Supply, Water Supply, Sewerage & Waste Management activities** while retaining the existing sectors.
- **Inclusive Mining Classification:** It added **minor minerals and rare earth minerals** for better sectoral representation.
- **Revamped Item Basket:** Basket expanded from 839 items to **1,042 products (463 item groups).**
  - **Additions:** Cards with a magnetic stripe, CCTV camera, Articles of non-woven textiles, Parts of aircraft and spacecraft, Stents, Vaccine (other than veterinary).
  - **Deletions:** Kerosene, Fluorescent tubes and CFLs, Tubes for bicycle/ tricycle/ rickshaw tyres. Tubes for LMV tyres, Printing machinery, Sewing machines.
  - **Inclusion of "n.e.c." Items:** "Not elsewhere classified" (n.e.c.) items, which were previously excluded, have been retained to capture niche, diversified, and innovative products that would otherwise remain under-represented.

SECTOR	BASE YEAR 2011-12		BASE YEAR 2022-23	
	WEIGHTS (in %)	ITEM GROUPS	WEIGHTS (in %)	ITEM GROUPS
Mining & Quarrying	14.372	1	11.053	3
Manufacturing	77.633	405	76.062	455
Electricity & Gas Supply	7.995	1	10.865	3
Water Supply; Sewerage and Waste Management*	--	--	2.020	2
Total	**100**	**407**	**100**	**463**

- **Enhanced Granularity:** It provides a more detailed disaggregation of industrial activities. In mining covering: (i) Fuel Minerals, (ii) Metallic Minerals, including Rare Earth Minerals, and (iii) Non-Metallic Minerals, including Minor Minerals.
  - **The Electricity Index** now separately tracks generation from renewable and non-renewable sources.
- **Factory Substitution and Augmentation:** The new methodology allows for the substitution of factories that permanently close or change their production lines with comparable units.
- **Chain-Linked Index:** Alongside the traditional fixed-base index, a chain-linked IIP is being introduced.
  - This allows for annual updates of weights, capturing structural shifts in the industry faster and reducing the bias caused by outdated weights
- **Linking Factor:** To maintain historical comparability, the new series adopts the **Geometric Mean (GM) method** (replacing the arithmetic mean) to link the 2011-12 series with the 2022-23 series.
- **Price Deflators**: Currently, the Wholesale Price Index (WPI) is used as an interim measure to deflate item groups where production data is reported in value terms. However, the **Output Producer Price Index (Output PPI) will become the preferred deflator** once it is officially released and its stability is evaluated
  - Output PPI is internationally preferred as it **directly measures product prices received by producers** and **accounts for quality changes.**
- **Seasonal Adjustment:** Because high-frequency data is heavily influenced by calendar effects, working days, and moving festivals (like Diwali), the MoSPI plans to release **seasonally adjusted IIP data**.
  - This will be undertaken **once stable 5-year continuous time series of monthly data is established** for new base year.

About All-India Index of Industrial Production (IIP)

- **Definition:** Composite indicator that measures the **short-term changes** in the **volume of production** of a **basket** of industrial products during a period with respect to a base period.
- **Historical Context and Base Year:** India has a long-standing tradition of tracking industrial output, having released its first IIP with the base year 1937 (during the pre-independence era).
  - The index has undergone 10 base year revisions to date.
- **Frequency:** Monthly; with a **time lag of 28 days** from the end of the reference month.
- **Released By:** National Statistics Office (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI).
- **Coverage:** 4 sectors with varied weightage. (Refer the table)
- **Index Formula:** The IIP is compiled using the **Laspeyres' fixed-base volume index formula**, a bottom-up approach that aggregates item-level quantities over time using base-year weights.

IMPORTANT ECONOMIC INDICES (EXCEPT IIP)

Index	Base Year	Purpose	Published By	Important Fact
Gross Domestic Product (GDP)	2022-23	Measures overall economic growth and size of the economy.	National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI)	Broadest indicator of economic performance; revised periodically to capture structural changes.
Consumer Price Index (CPI-Combined)	2024	Measures retail inflation.	National Statistical Office (NSO), MoSPI	RBI's inflation target is 4% ± 2% based on CPI.
Wholesale Price Index (WPI)	2022-23	Measures wholesale price inflation.	Office of the Economic Adviser, DPIIT	Covers goods only (no services); used as a key inflation indicator.
Producer Price Index (PPI)	2022-23	Measures prices received by producers at the factory gate (producer-level inflation).	Office of the Economic Adviser, DPIIT	Will replace WPI as the principal index of wholesale price inflation in India; aligns with global best practices.
Consumer Food Price Index (CFPI)	2024	Measures food inflation.	National Statistical Office (NSO), MoSPI	A sub-index of CPI; closely tracked for food price trends and monetary policy.

Implications of revision of base year of IIP

- **Boost to Investment and Business Planning:** Accurate evaluations of industrial and consumption trends provide clear policy guidance and businesses can rely on data for better forecasting, supply chain planning, etc.
- **Enhanced Policy Formulation**: A rebased, highly granular IIP ensures that monetary and fiscal policy decisions are anchored to accurate and contemporary data by government and the Reserve Bank of India.
  - For instance, tracking separate indices for renewable and non-renewable electricity or minor minerals allows the government to directly monitor the effectiveness of policies, infrastructure investments, and clean energy efforts.
- **Harmonization of Macroeconomic Data:** This synchronization reduces discrepancies and ensures policymakers can make meaningful, "apples-to-apples" comparisons evaluating growth trends, value additions, etc. across economy.

Conclusion

The recent statistical reforms, particularly the new 2022-23 IIP series, mark a decisive shift towards greater data credibility. These vital upgrades provide a robust, representative foundation for evidence-based policymaking in India's transformed economy.

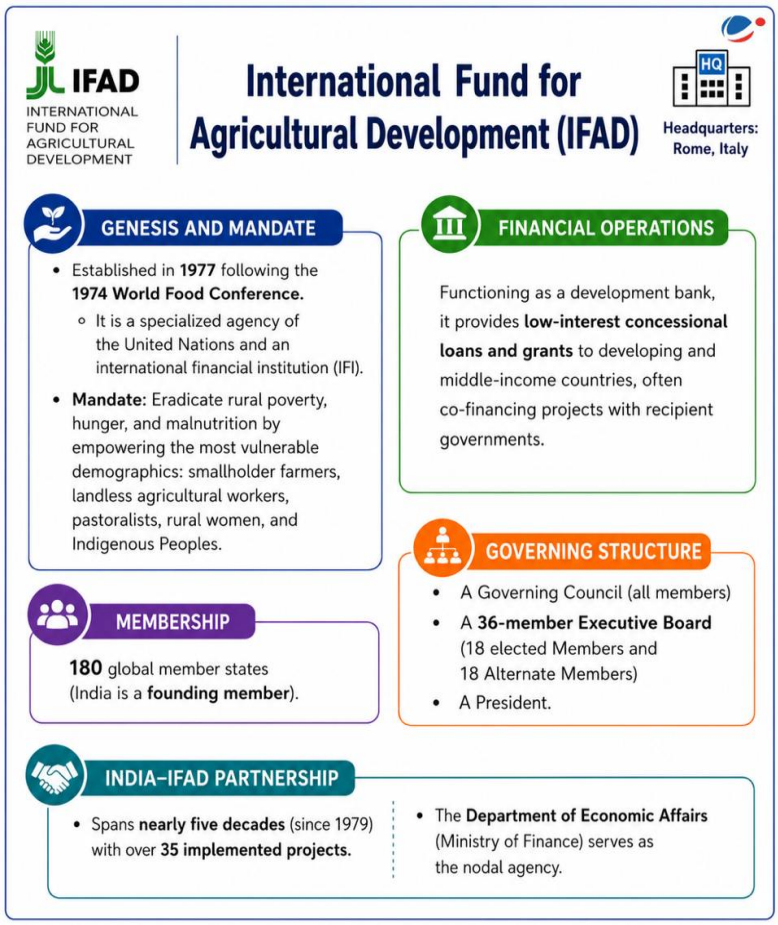
3.4. STRENGTHENING RURAL ECONOMY

Why in the News?

The Government of India, in partnership with the International Fund for Agricultural Development (IFAD), launched the Country Strategic Opportunities Programme (COSOP) 2026–2033.

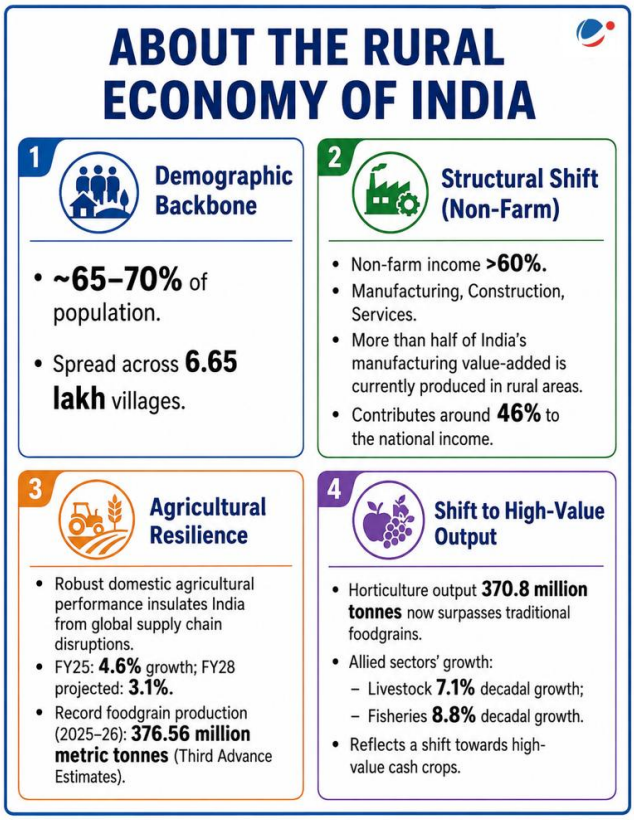
More on the News

- The launch featured a parallel strategic partnership agreement with the National Bank for Agriculture and Rural Development (NABARD) to bolster rural financial ecosystems and deepen inclusive credit access for marginalized farmers.
- The COSOP is a multi-year cooperative framework designed to guide IFAD's long-term rural investment priorities across India. The programme revolves around **two main pillars:**
  - Enhancing the social, economic, and climate **resilience** of rural communities, and
  - Strengthening **knowledge systems** to scale proven development models.
- It places a central emphasis on utilizing SHGs, FPOs, and rural cooperatives as the primary platforms to link rural populations with finance, markets, and infrastructure.



Challenges of India's Rural Economy

- **Agrarian Distress & Disguised Unemployment:** Rural manufacturing has adopted capital-intensive technology, resulting in **jobless growth** that fails to absorb the surplus labor transitioning out of agriculture.
  - The stark asymmetry between agriculture's low GDP contribution (~18%) and its massive workforce share (~46%) leads to **near-zero marginal productivity,** depressing per capita rural incomes.
- **Severe Skill Deficits:** A significant mismatch exists between traditional rural skill sets and the demands of modern industrial and service sectors. Over 75% of the rural workforce lacks secondary-level qualifications, restricting their entry into high-paying formal roles.
- **Climate Change Vulnerability:** Depleting water tables, land degradation (affecting ~30% of geographical area), and the indiscriminate use of chemical fertilizers pose severe threats to long-term rural productivity.
- **Gender and Labor Market Gaps:** Women exiting agriculture often face a lack of localized, safe manufacturing roles, leading to a **de-feminisation** of the formal rural workforce and a reliance on unpaid caregiving.
- **Fragmented Landholdings:** The dominance of small and marginal farmers (over 85%) severely restricts the adoption of mechanized farming and economies of scale, resulting in crop yields that remain below global averages.
- **Credit & Financial Constraints:** Despite high basic banking penetration (Jan Dhan accounts), access to low-interest, formal capital investment credit remains highly restricted for marginalized farmers.



Way Forward

- **Expanding Rural Industrialization:** Focus public capital expenditure on rural MSMEs, food processing parks, and physical connectivity to systematically transition surplus labor from agriculture to the non-farm sector.
- **Accelerating Agri-Tech Adoption:** Expand digital public infrastructure, AI-driven predictive weather analytics, and drone technology (e.g., Namo Drone Didi) to optimize input usage and streamline crop insurance assessments.
- **Scaling Collectivization:** Empower FPOs, SHGs, and cooperatives with enhanced working capital and simplified regulatory compliance to transform primary producers into active participants in the agro-processing value chain.

GOVERNMENT INITIATIVES FOR RURAL ECONOMY

INITIATIVE	FOCUS AREA	KEY POINTS
VB G-RAM-G (2025)	Employment Guarantee	Replaces MGNREGA; **125 Days** of Work; Climate-Resilient Assets
Focus Project	Transforming NE Farming	Climate-Resilient Practices; High-Value Spices; Settled Agriculture
SVAMITVA Scheme	Digital Land Records	Drone Mapping; **2.76 Crore** Property Cards; Legal Land Rights
e-SHRAM Portal	Unorganized Worker Support	Targeted Social Security; **31+ Crore** Workers Registered; Formal Benefits
DAY-NRLM	Rural Livelihoods	**10+ Crore** Households in SHGs; Lakhpati Didis; Rural Entrepreneurs
UDYAM Platforms	Enterprise Formalization	**7.9+ Crore** Micro-enterprises; Priority Sector Lending Access
JJM & PMAY-G	Rural Infrastructure	Tap Water to **81%** Households; Crores of Pucca Houses
PM-JANMAN	PVTG Inclusivity	**100%** Scheme Saturation for PVTGs; Connectivity & Livelihoods

- **Strengthening Local Value Chains:** Developing localized agriculture clusters and facilitating direct **farm-to-fork** market linkages will optimize supply chains, and increase the profit margins realized by primary producers.
- **Innovative Rural Finance:** Leverage the IFAD-NABARD partnership to shift rural credit portfolios from short-term crop loans to long-term capital investment financing tailored specifically for rural micro-entrepreneurs and women.
- **Revitalizing Village Commons:** Community-managed lands must be rehabilitated using GIS mapping and sustainable frameworks. Integrating waste-to-energy projects and solarization will convert these lands into robust, climate-resilient economic assets.

Conclusion

The structural transformation of India's rural economy is the cornerstone of realizing the **Viksit Bharat@2047** vision. This exhaustive roadmap provides a timely framework to fortify this transition and uniquely positions India to export its proven models of rural prosperity to the broader Global South during the Amrit Kaal.

3.5. FARMERS PRODUCER ORGANISATIONS (FPOS)

Why in the news?

National Academy of Agricultural Sciences (NAAS) in a recent policy paper suggested key measures to enhance **efficiency and sustainability of Farmers Producer Organisations** in India.

About FPOs

- FPOs are a type of **producer organization** (legal entity formed by primary producers viz. farmers, fishermen, weavers, etc.) where the **members are farmers** (NABARD 2015).
- **Incorporated/ registered under:** Part IXA of Companies Act or under Co-operative Societies Act of the State or Central Govt.
- **Small Farmers' Agribusiness Consortium (SFAC):** Mandated by Ministry of Agriculture, to support State Governments in formation of FPOs.
- **FPO Registry Portal:** FPO must be registered with this portal maintained by Central Government and a receives a unique identity number, i.e. RIC (Registration Identity Code).

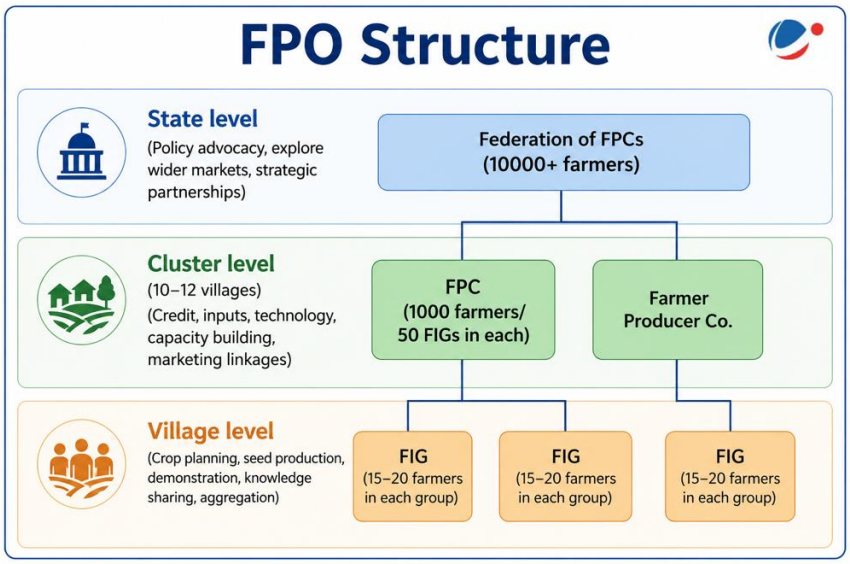
DATA BANK

Status of FPOs under scheme 'Formation and Promotion of 10,000 FPOs Scheme' *(as on 1st Jan 2026).*

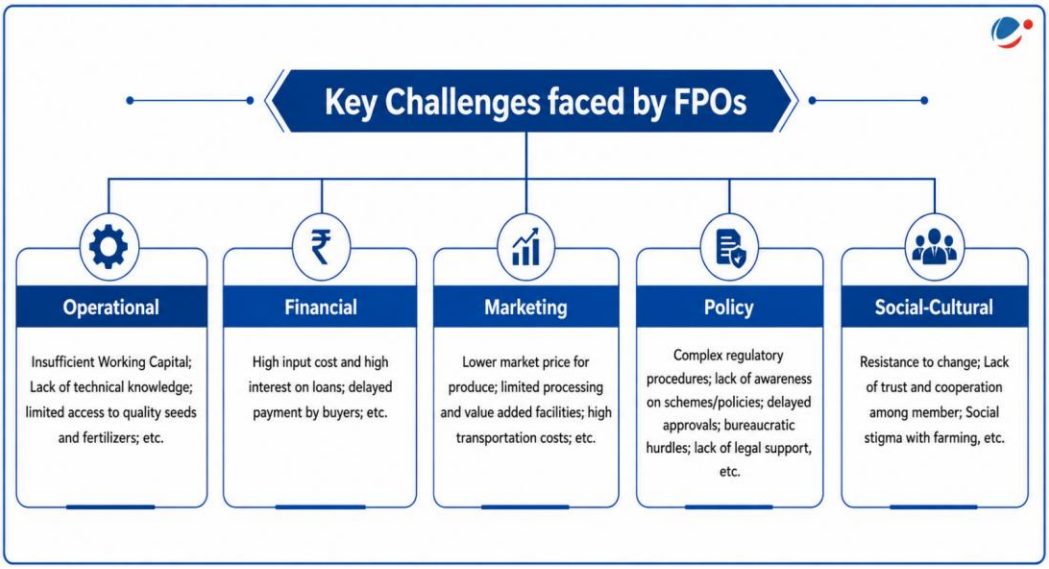
- **10,000** FPOs registered.
- **1,175** FPOs registered with 100% women members.
- **56.32** lakh farmers registered with **21.96** lakh women farmers.

- **Status:** Most **FPOs (85%)** focus on field crops and horticulture while **only 15% of focus on dairy, livestock, and fisheries.**
- **Key Features of FPOs:**
  - **Ownership lies with members** and management is through the representatives of members;
  - **Shares a part of profit amongst the producers** and the surplus is added to its own funds for **business expansion.**
- **Structure of FPO:** Farmers are mobilised into groups of **between 15-20 members** at village level (called **Farmer Interest Groups or FIGs**) and further build up association (see infographic).

Benefits of FPOs



- **Collective Bargaining:** FPOs facilitate collective bargaining for **small farmers by bringing them together** into a **structured entity**, enabling them to reduce costs and **achieve economies of scale.**
  - E.g., bulk purchasing reduces costs by 20-40%.
- **Direct Market Access**: FPOs eliminate 3-4 middlemen layers through access to eNAM and other digital platforms.
- **Enhanced Technology Adoption**: FPOs enable shared access to farm machinery (tractors, harvesters), precision farming tools (drones, sensors) and digital record-keeping and traceability.
- **Financial Inclusion:** FPOs enhance access to credit at lower interest rates, crop insurance and Government subsidies.
  - E.g., under Formation & Promotion of 10,000 FPOs scheme, financial assistance of upto Rs.18 lakhs is provided to each FPO towards management cost for 3 years.
- **Value Addition:** FPOs provide services such as processing units for higher-value products, branding and packaging support, Organic/GI certification assistance etc.
- **Risk Reduction: FPOs reduce risk for members by** diversifying income sources (multi-cropping, processing), enabling collective bargaining during price fluctuations and climate-smart agriculture training.



- **Policy Advocacy:** Through representation in regional/national forums FPOs can advocate for **favourable policies and regulations** related to agriculture, trade, and market access and influence policy decisions.
- **Knowledge Sharing and Capacity Building**: Through expert consultations (agronomists, market specialists), training exercises and best practice sharing among members, FPOs help in building capacities in areas like **modern and sustainable farming practices, market intelligence and quality standards.**

Key recommendations on Improving the Efficiency and Sustainability of FPOs

- **Financial Support:** Improving **internal financing, equity, and working capital** by building strong membership base and **retaining profit margins** to accumulate more working capital.
- **Risk Management:** Using **modern technologies** like artificial intelligence (AI), Internet of Things (IoT) and **group insurance** to improve adaptive capacity and overcome weather-related and other biotic risks**.**
- **Post-harvest management:** Specialized training in **fruit bagging, harvesting techniques** and **value addition through primary processing** can build an efficient FPO value chain, facilitate internal coordination, and minimize waste.
- **Integration of Digital Technologies:** Technologies like blockchain, IoT, and AI can help FPOs adapt to various challenges.
  - **E.g.**, **Traceability,** enabled by blockchain technology increases transparency; **Big data and IoT applications** improve precision farming, logistics management, etc.
- **Government Policy and Support:** Although FPOs are exempted from income tax for turnover up to Rs. 1000 million, they have to pay minimum alternate tax which could be streamlined and restructured.
- **Simplification of compliance: Ministry of Agriculture** to collaborate with **Ministry of Corporate Affairs** to review and simplify compliance requirements, adopt a single window system for all relevant FPO issues, etc.
- **Link institutional buyers with FPOs:** Institutional buyers like **Railways, Military, and Food Corporation of India (FCI),** must prioritize FPOs in procurement of both food and non-food commodities.
- **Strengthening the linkages of FPOs with R&D:** ICAR and NAAS can accelerate research and initiatives focused on FPOs, enhancing their promotion and operations. E.g. In **Farmer FIRST project,** FPOs can be integrated as **research collaborators.**

Key Initiatives taken towards Promotion of FPOs

- **Formation & Promotion of 10,000 Farmer Producer Organisations (FPOs) scheme: Central Sector Scheme** for organising farmers into **collectives,** enabling to engage in direct marketing.
  - **Cluster-Based Business Organizations (CBBOs)** under Scheme are tasked to **facilitate market linkages** by identifying and connecting FPOs with relevant industries.
- **Linkages through online platforms:** FPOs encouraged to use govt. platforms like **Electronic- National Agriculture Market (e-NAM)**; **Open Network for Digital Commerce (ONDC), Government e-Marketplace (GEM),** etc. to list their produce and directly interact with buyers/traders.
- **Scheme of Fund for Regeneration of Traditional Industries (SFURTI):** Under this scheme, **APEDA (Agricultural & Processed Food Products Export Development Authority)** provides assistance to APEDA registered FPOs for export.
- **Draft National Policy on Farmer Producer Organizations (FPOs):** Scientifically and systematically consolidate existing FPOs and form new FPOs benefiting **2.50 crore farmers**.

Conclusion

A dedicated **"FPO Support and Development Mission"** offering integrated financial assistance, capacity building, market linkage support, and simplified regulatory services through single-window system could be implemented enabling FPOs to function efficiently and sustainably.

3.6. CAPITAL ADEQUACY NORMS FOR BANKS

Why in the news?

The RBI has revised the **capital adequacy norms** for commercial banks, small finance banks and payments banks, removing previous restrictions tied to non-performing asset (NPA) provisioning.

More on the news

- **The RBI** has now allowed banks to **include quarterly profits earned** in **Common Equity Tier 1 (CET1) capital** for the **computation of the CRAR.**

Understanding Capital to Risk-Weighted Assets Ratio (CRAR)

- **Also known as the Capital Adequacy Ratio (CAR),** it is the primary metric used by the RBI to ensure a bank can absorb a reasonable amount of loss before it becomes insolvent.
  - **CRAR = ((Tier 1 Capital + Tier 2 Capital) ÷ Risk-Weighted Assets)) *100**
- **Significance**: Can help ensure the efficiency and stability of a nation's financial system by lowering the risk of banks collapsing.
  - In general, bank with a high capital adequacy ratio is considered safe and likely to meet its financial commitments.
- **Key Components of CRAR**
  - **Risk-Weighted Assets (RWA):** Banks are required to hold a minimum amount of capital to remain solvent and protect their depositors' investments.
    - These are referred to as RWAs, and they're assigned risk in the form of a percentage. Riskier loans carry higher weights and require more capital backing.
  - **Tier 1 Capital (Core):** Highly liquid capital that acts as the primary defense against financial stress (e.g., shareholder equity, disclosed reserves). **It is split into two categories:**
    - **Common Equity Tier 1 (CET1):** Sum of common shares (equivalent for non-joint stock companies) and stock surplus, retained earnings, other comprehensive income, qualifying minority interest and regulatory adjustments
    - **Additional Tier 1 (AT1):** Sum of capital instruments meeting the criteria for AT1 and related surplus, additional qualifying minority interest and regulatory adjustments.
  - **Tier 2 Capital (Supplementary):** Sum of capital instruments meeting the criteria for Tier 2 and related surplus, additional qualifying minority interest, qualifying loan loss provisions and regulatory adjustments

About Common Equity Tier 1 (CET1)

- Introduced globally under the **Basel III framework** to prevent systemic banking failures and acts as the **ultimate shock absorber to keep banks solvent during economic downturns.**
  - **Composition:** Comprises qualifying common shares and their related stock surplus, retained earnings, and accumulated other comprehensive income along with other disclosed reserves.
    - Additionally, it includes qualifying minority interest with the final total reflecting any applicable regulatory adjustments.
  - **Common Equity Tier 1 Ratio = (Common Equity Tier 1 Capital ÷ Risk-Weighted Assets) *100**

Regulatory Standards: RBI vs. Basel III

India applies a more conservative baseline than the Base III standards set by the Bank for International Settlements (BIS).

Requirement	Basel III (Global)	RBI (India)
Minimum CET1 Ratio	4.5%	**5.5%**
Minimum CRAR	8.0%	**9.0%**

3.7. STARTUP INDIA FUND OF FUNDS 2.0 SCHEME

Why in the News

Recently, the **Department for Promotion of Industry and Internal Trade** (DPIIT) issued the operational guidelines for the **Startup India Fund of Funds 2.0 (FoF 2.0).**

Operational Guidelines

- **Fund Corpus & Implementation:**
  - **Total corpus: The fund has a total corpus of ₹10,000 crore** spread across the **16th and 17th Finance Commission cycles**.
  - **Implementing Agency:** The **Small Industries Development Bank of India** (SIDBI) will act as the **initial Implementing Agency** (IA), while DPIIT may appoint another domestic IA later.

- **Indirect Investment Mechanism:** The scheme **will not directly invest** in startups. It participates in the SEBI-registered **Category I and II Alternative Investment Funds (AIFs),** which will further invest in **DPIIT-recognised startups**.
- **Funding Limits:** Total government contribution from different Fund of Funds in any selected AIF **cannot exceed 50% of the AIF's corpus.**
- **Priority Investment Segments:** It includes **Deep Tech Startup, Smaller AIFs/Early-Stage Startups, Tech-driven Manufacturing Startups and Sector/Stage Agnostic Startups.**
- **Selection of AIFs:** AIFs will be selected through a **two-stage process** involving **screening by a Venture Capital Investment Committee (VCIC)** and **final approval by the IA's Board sub-committee.**
- **Monitoring & Governance: DPIIT and the Implementing Agency** will monitor the scheme through periodic reviews and annual reports. Independent **third-party evaluations** will be conducted **every five years.**
- **Returns & Capacity Building:**
  - Returns earned under the scheme will be deposited into the **Consolidated Fund of India (CFI).**
  - Up to **5% of returns** can be used for mentorship, workshops, ecosystem development, and capacity-building activities.

Digital Current Affairs
Read our previous coverage on Startups

About Startup India Fund of Funds 2.0

- **Background**: Builds on the success of **Fund of Funds for Startups (FFS 1.0**) launched in 2016 under **Startup India Action Plan** to address startup funding gaps.
- **Ministry:** Ministry of Commerce and Industry.
- **Eligibility**: Alternative Investment Funds (AIFs) spread across **16th and 17th Finance Commission cycles.**
  - AIF are **privately pooled investment vehicle** which collects funds from **Indian or foreign investors** managed under a defined investment policy.

3.8. NEWS IN SHORT

3.8.1. INDEX OF SERVICE PRODUCTION (ISP)

Ministry of Statistics & Programme Implementation (MoSPI) released an approach paper to compilation of ISP.

- Unlike Index of Industrial Production (IIP) which tracks manufacturing, there has been no index to capture **short-term movements in services sector**, creating a data gap in overall economic performance assessment.

Key Features of Proposed ISP

- **Proposed Base Year: 2024-25.**
- **Data Sources: Goods and Services Tax (GST)** data, **administrative data from sectoral ministries** and the **Annual Survey of Incorporated Services Sector Enterprises.**
- **Coverage:** Index is exclusively designed to track **formal sector**, including sub- sectors like wholesale and retail trade, transport, banking, insurance, real estate, communication, etc.

3.8.2. LOGISTICS EASE ACROSS DIFFERENT STATES (LEADS) 2025

LEADS is the **flagship assessment** of logistics performance across States and Union Territories released by **Department for Promotion of Industry and Internal Trade (DPIIT).**

- **LEAPS 2025 (Logistics Excellence, Advancement and Performance Shield) awards** were also given across **13 categories** covering **Core Logistics, MSMEs, Startups, Special Categories** etc.

About LEADS

- It was conceived on the lines of the **Logistics Performance Index (LPI)** of World Bank in 2018.
- LEADS 2025 provides a **four-tier performance framework** (earlier three tier).

- It uses **objective indicators** (nearly 59% weightage) like **regulatory support and logistics enablers,** and **perception indicators** such as **logistics infrastructure, services and sustainable logistics.**

About India's Logistics sector

- **Logistics cost:** ~8% of GDP (2023 to 2024).
- **Key Issues:**
  - **Infrastructure Gaps:** Poor road quality, port congestion and weak rail connectivity.
  - **Skewed share:** Over 60% freight movement through roads raises fuel consumption, congestion and transit costs.
  - **Fragmentation:** Dominance of small players leads to operational inefficiencies.
  - **Others:** Regulatory Complexity; Slow Technology Adoption; etc.

LEADS 2025: PERFORMANCE SNAPSHOT

STATE/UT CATEGORY	1. EXEMPLARS (Top Performing States/UTs)	2. HIGH PERFORMERS (Strong & consistent outcomes)	3. ACCELERATORS (Notable improvement movers)	4. ASPIRING SEEDERS (Foundational stage of development)
Coastal States	Tamil Nadu	Gujarat, Kerala, Maharashtra	Andhra Pradesh, Odisha, Goa, Karnataka	West Bengal
Landlocked States	Uttar Pradesh	Haryana, Telangana, Chhattisgarh, Bihar	Punjab, Jharkhand, Madhya Pradesh, Uttarakhand, Himachal Pradesh	Rajasthan
North-Eastern States	Mizoram	Tripura, Meghalaya	Nagaland, Arunachal Pradesh, Manipur, Assam	Sikkim
Union Territories	Delhi	Jammu & Kashmir, Puducherry	Dadra & Nagar Haveli and Daman & Diu, Chandigarh, Ladakh, Lakshadweep	Andaman & Nicobar Islands

Initiatives to strengthen Logistics Sector

- **National Logistics Policy (NLP) 2022:** Aims to lower the cost of logistics in par with other developed countries.
- **PM GatiShakti National Master Plan:** Integrated infrastructure master plan to ensure seamless movement of people and goods.
- **Logistics Data Bank 2.0:** Syncs with Unified Logistics Interface Platform (ULIP) APIs, offering exporters and MSMEs real-time visibility across road, rail, sea etc.
- **Others:** Dedicated Freight Corridors (DFCs); Strengthening Multimodal and Integrated Logistics Ecosystem (SMILE) program; Multi-Modal Logistics Parks (MMLPs); E-Way Bill System; Infrastructure Status to Logistics Sector; Logistic Efficiency Enhancement Programme etc.

Digital Current Affairs
Read our previous coverage on National Logistics Policy, 2022

3.8.3. TRADE ENABLEMENT AND ACCESS TO MARKET (TEAM) INITIATIVE

Ministry of MSME is accelerating the digital transformation of India's smallest businesses through the TEAM Initiative.

About TEAM Initiative

- **Type:** Central Sector Scheme, **launched in 2024.**
- **Objective:** To provide **end-to-end e-commerce support to Micro and Small Enterprises (MSEs),** enabling them to participate effectively in digital commerce ecosystems through the **Open Network for Digital Commerce (ONDC).**
  - **ONDC** aimed at promoting open networks for all aspects of exchange of goods and services over digital or electronic networks.

- **It is a transformative sub-scheme under the World Bank-supported** Raising and Accelerating MSME Performance (RAMP) Programme.
  - **RAMP Programme** launched in **2022** to scale up the implementation capacity and coverage of MSMEs.
- **Duration :** 3 years from 2024 to 2027
- **Implementing Agency:** National Small Industries Corporation (NSIC)

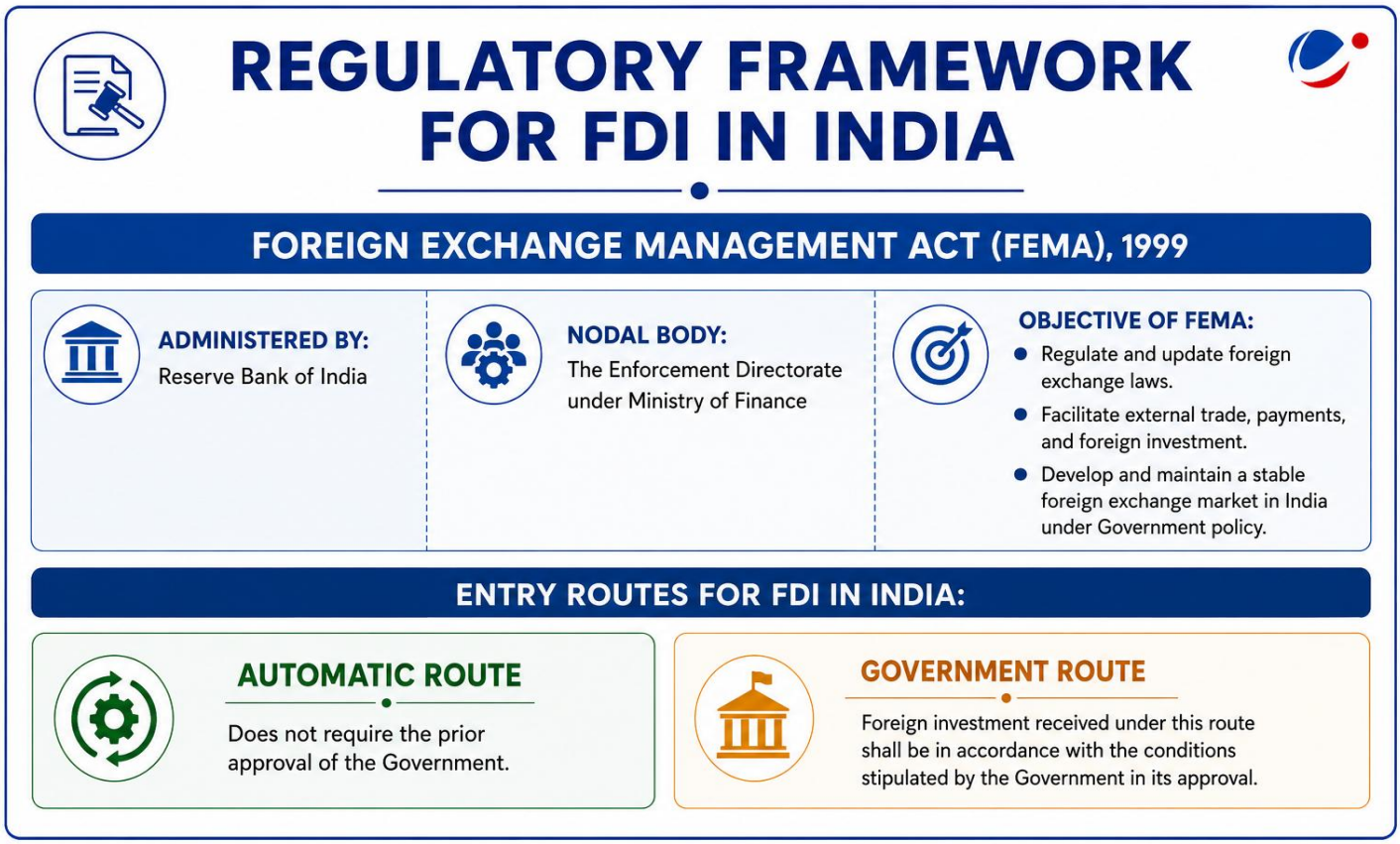
3.8.4. FDI EASING FOR FOREIGN FIRMS WITH UP TO 10% CHINESE STAKE

Finance Ministry notified FDI easing for foreign firms with up to 10% Chinese stake under FEMA.

- It allows **overseas entities having a Chinese shareholding of up to 10% to invest** in India under the automatic route.
- In 2020, India had imposed curbs on FDI from nations with which it shares land borders.

Other Change in FDI Rules:

- **100% FDI in Insurance:** In private insurance companies and intermediaries, such as brokers, without needing prior government approval (automatic route).
  - Foreign investment in the **Life Insurance Corporation of India (LIC) remains strictly capped at 20%.**
- These changes were officially implemented through the **Foreign Exchange Management (Second Amendment) Rules, 2026.**
- **Significance:** Enhanced FDI inflows, ease of doing business, etc.

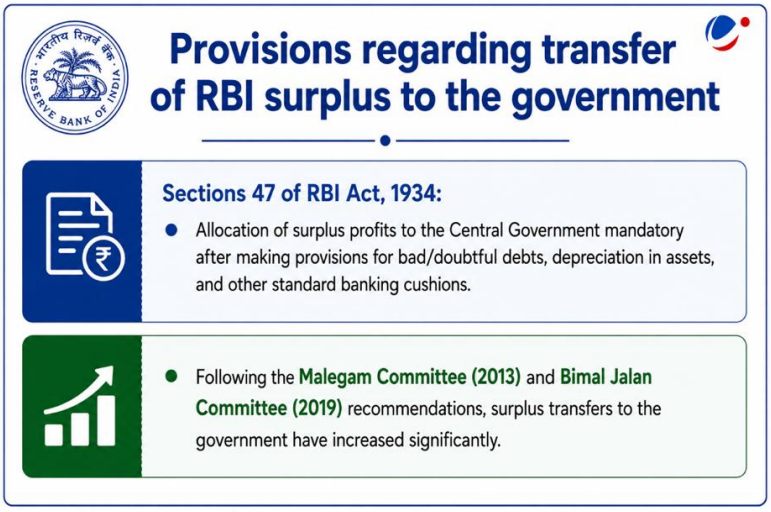


3.8.5. RBI SURPLUS

RBI approved its **highest-ever surplus transfer of ₹2.86 lakh crore** to the Central Government for the **Financial Year 2025–26**.

About RBI Surplus

- Surplus implies **excess of income over expenditure.**
  - **RBI's Income Source:** Interest on holding of rupee securities, liquidity adjustment facility (LAF), marginal standing facility (MSF), loans & advances and foreign sources.
    - RBI is **not liable to pay income-tax or super-tax** on any of its income, profits or gains.
  - **RBI's Expenditure:** Printing of notes, agency charges which includes commission to banks, primary dealers etc. and employee cost.



3.8.6. BHARAT MARITIME INSURANCE POOL

The 'Bharat Maritime Insurance Pool' (BMI Pool) aims to facilitate continuous maritime insurance coverage and insulating India's maritime trade from global volatility.

What is the BMI Pool?

- It is a **government-backed maritime insurance pool** with a capacity of $1.5 billion and sovereign guarantee of ₹12,980 crore ($1.4 billion).
- **Ministry:** Department of Financial Services, Ministry of Finance
- **Coverage:** Major maritime risks, including Hull and Machinery, Cargo, Protection and Indemnity (P&I) and War risks for-
  - Indian flagged or controlled vessels.
  - Vessels destined to or starting from India.
- **Governance:**
  - **Pool Administrator**: General Insurance Corporation of India (**GIC Re**)
  - A **Governing Body** and an **Underwriting Committee** to oversee the pool's functions and risk management respectively.
- **How BMI Pool Operates:**
  - Domestic insurers issue policies using the combined capacity of the pool members.
    - Combined underwriting capacity of the Pool is ~Rs.950 crore.
  - **Claims Handling:** Up to $100 million (by the Pool own capacity); Exceeding $100 million (triggers sovereign guarantee as a contingent safety net of last resort)

Need for the BMI Pool

- **Addressing Geopolitical Volatility:** Rising global volatility and Middle East tensions have drastically increased maritime risks.
  - E.g., disruptions in Red Sea, Strait of Hormuz etc. have **increased insurance premiums**
- **Mitigating Impact of Sanctions:** Sanctions can abruptly cut off foreign re/insurance support, disrupting shipping operations and critical trade flows.

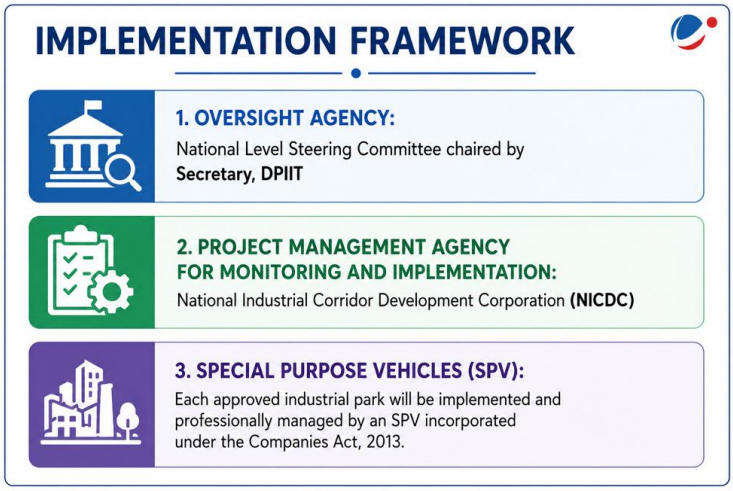
- **Others**: **Develop Domestic Expertise** in underwriting and claims management, **Reduces foreign exchange outflow** by reducing dependence on foreign insurers, enhances India's **maritime self-reliance, financial sovereignty and trade security.**

3.8.7. BHAVYA SCHEME

Department for Promotion of Industry and Internal Trade (DPIIT) released guidelines for implementation of BHAVYA Scheme.

About Bharat Audyogik Vikas Yojna (BHAVYA) Scheme

- **Scheme Type:** Central Sector Scheme
- **Ministry:** Ministry of Commerce & Industry via DPIIT.
- **Objective:** Transform the country into a globally competitive manufacturing hub by providing supportive industrial ecosystems that help investors easily ground their investments, thereby deepening domestic supply chains and increasing employment.
- **Target**: Develop **100 plug-and-play industrial parks** in partnership with States, Central Public Sector Undertakings and private sector.
  - **Plug-and-play industrial parks** are ready-to-use manufacturing sites offering pre-built infrastructure. E.g., roads, power, water, and approvals,
- **Duration:** 6 years (2026-27-2031-32)
- **Outlay:** Rs 33,660 crore
- **Eligibility:** Greenfield and eligible brownfield industrial parks
- **Minimum land requirements:** 100 acres for non-hilly states and **25 acres** for hilly states, NE states, Union Territories, and smaller states.
  - Also permits larger parks up to **1000 acres**.
- **Funding Framework**: Financial assistance is provided through the **National Industrial Corridor Development and Investment Trust (NICDIT)**, primarily in the form of equity contribution.
  - **Funds** up to **₹ 1 crore** per acre in equity mode for each project (except for private developer) for-
    - **Core infrastructure** (internal roads, ICT and administrative systems).
    - **Value-added infrastructure** (ready-built factory sheds, warehousing).
    - **Social infrastructure** (worker housing and support amenities).
    - Support for external infrastructure up to 25% of project cost would also be provided.



3.8.8. EMERGENCY CREDIT LINE GUARANTEE SCHEME (ECLGS) 5.0

Union Cabinet approved Emergency Credit Line Guarantee Scheme (ECLGS) 5.0

- ECLGS was initially announced as part of the Atma Nirbhar Bharat Package in 2020 to help businesses including MSMEs to meet their operational liabilities and resume businesses in view of the distress caused by the COVID-19 crisis.
- The scheme provides **Member Lending Institutions (MLIs), 100 percent guarantee against any losses** suffered by them due to non-repayment of the ECLGS funding by borrowers.
- The scheme is under the operational domain of the **Department of Financial Services (DFS), Ministry of Finance.**
- **National Credit Guarantee Trustee Company Ltd (NCGTC)** has been set up as a company to manage and provide guarantees to these loans.

Key Features of the ECLGS 5.0

- **Aim:** Provide credit guarantee coverage to **MLIs by National Credit Guarantee Trustee Company Limited (NCGTC)** for the amount in default under the additional credit facility extended to the eligible borrowers to tide over any short-term liquidity mismatches in view of West Asia Crisis.

- **Eligible borrowers: MSMEs and non-MSMEs** with existing working capital limits and **scheduled passenger airlines** having outstanding credit facilities, as of March 31, 2026, provided their accounts are standard.
- **Guarantee coverage**: 100% for MSMEs and 90% for non-MSMEs as well as airline sector.
- **Tenor of Loan**: 5 years (including moratorium of 1 year) for MSMEs/Non-MSMEs and 7 years (including moratorium of 2 years) for airline sector.

3.8.9. ELECTRONIC GOLD RECEIPTS (EGRS)

National Stock Exchange of India launched **EGRs**, to formalise India's gold market.

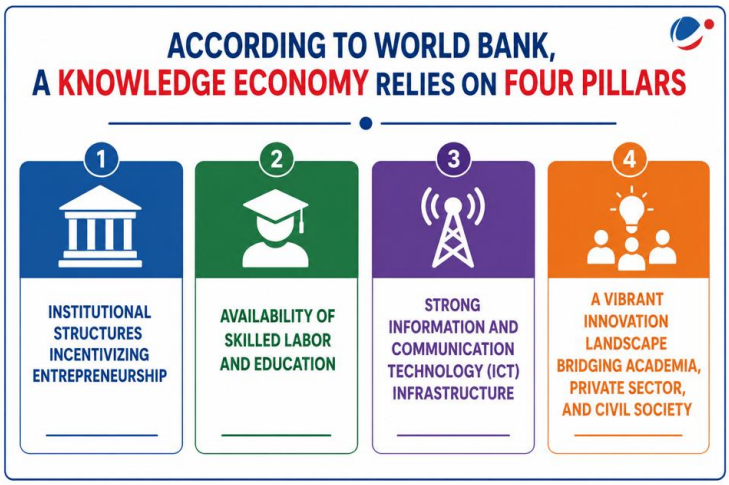
- The **Bombay Stock Exchange** was the **first** exchange in India to launch EGRs in 2022.

About EGRs

- They are **dematerialised securities** that represent **ownership of physical gold,** which is stored in SEBI's accredited vaults and **held electronically** through depositories.
  - Each EGR is **fully backed by physical gold with assured quality** and **can be traded on exchange,** integrating gold into financial system.
  - They can be **redeemed anytime** in exchange of gold, unlike Gold ETF (cash settlement).
- **Regulated by:** Securities Exchange Board of India (SEBI)
- **Asset Class:** Securities under the Securities Contracts (Regulation) Act (SCRA), 1956
- **Market Participants:** Retail Investor, Jewellers, Bullion Traders, etc.

3.8.10. MEASURING INDIA'S KNOWLEDGE-BASED ECONOMY'S CONTRIBUTION TO GDP

Released by the Ministry of Statistics and Programme Implementation, the **proposed framework for measuring India's knowledge-based economy's contribution to GDP** seeks to measure the contribution through knowledge in capital, labour, innovation, and digital sectors.



About Knowledge-based Economy

- **Definition**: It is a system of consumption and production that emphasizes the use of human capital like information, skills, technical expertise, and intellectual property over physical inputs and natural resources.
- **Types of Knowledge**:
  - **Codified Knowledge:** Information that can be easily documented and transmitted digitally (e.g., *know-what* and *know-why*).
  - **Tacit Knowledge:** Experience-based skills and capabilities that are harder to codify and transfer (e.g., *know-how* and *know-who*).
- **Significance of a Knowledge-Based Economy**
  - **Driven by Increasing Returns:** Generate increasing returns through innovation spillovers, repeated use, and sustained long-term economic growth.
  - **Transformation of Value Creation:** Commercializes science and innovation through IPRs like patents and copyrights, with knowledge-based activities contributing over 50% of GDP in major OECD economies.
  - **High-Skill Employment:** Creates high-wage jobs and increases demand for skilled "knowledge workers".
  - **National Innovation Systems:** Relies on dynamic networks linking academia, government, and industry for interactive learning and innovation diffusion.
- **Examples:** Digital India by MeitY, Traditional Knowledge Digital Library, Ayush, GI Tags, etc.

3.8.11. NATURAL GAS

Recently, Oil India Limited discovered a new natural gas reserve in Rajasthan.

- The discovery marks the first-ever confirmed gas presence in the Sanu Formation of the Dandewala field.

About Natural Gas in India

- **Composition: Mainly** composed of **methane** (CH_4) with smaller amounts of natural gas liquids and nonhydrocarbon gases, like CO2 and water vapor
- **Estimated reserves:** ~1,000 billion cubic meters, with largest reserves being in **Western Offshore region** followed by eastern offshore.

3.8.12. GINGER

Recently**, Mizoram Ginger Mission** was launched by the **Ministry of Development of North Eastern Region (MDoNER)** and Government of Mizoram for cultivation Mizoram's GI-certified ginger.

About Ginger

- **Scientific Name:** *Zingiber officinale Rosc* (Family: Zingiberaceae).
- **Status:** India is a **leading global producer** of ginger.
- **Major Producing States:** Madhya Pradesh**, Gujarat, Andhra Pradesh**.
- **Agro-Climatic Requirements**
  - **Climate: Warm and humid** (up to an **altitude of 1500m**).
  - **Temperature:** 12-35°C.
  - **Rainfall:** Requires **moderate rainfall for sowing** (around 1500mm annually), and **dry weather before harvesting**.
  - **Soil:** well-drained friable **sandy loam, clay loam, or lateritic loam** rich in **humus**.
- **Significances**
  - **Antioxidant and anti-inflammatory properties**.
  - Highly effective in **treating nausea**, managing **blood sugar (HbA1c) and cholesterol levels**, etc.

4. SECURITY

4.1. INDIAN NAVY MARITIME SECURITY STRATEGY 2026 (INMSS-2026)

Why in the News

Indian Navy Maritime Security Strategy (INMSS -2026) was released.

More in the News

It is the third public articulation of India's naval strategy in less than two decades, following Freedom to Use the Seas (2007) and Ensuring Secure Seas (2015).

Freedom to Use the Seas (2007): Securing Oceanic Access

- **Strategic Purpose:** Emphasised maritime power as essential for national development and strategic autonomy.
- **Oceanic Orientation:** Focused on **sea control, forward presence, and deterrence** rather than coastal security.
- **Geographical Focus:** Concentrated on the **Indian Ocean**, including the **Arabian Sea, Bay of Bengal, chokepoints, and island territories**.
- **Primary Challenge:** Sought greater national attention for maritime security in a continent-focused defence framework.

Ensuring Secure Seas (2015): Broadening Maritime Security

- **Changing Threat Landscape:** Shaped by **26/11 Mumbai attacks**, the rise of the **Indo-Pacific**, and growing Chinese presence in the IOR.
- **Expanded Mandate:** Extended from a maritime-military focus to include **coastal and offshore security**.
- **New Regional Role:** Defined India as a **"Net Security Provider"** in its maritime neighbourhood.
- **Widened Horizons:** Expanded focus from the **eastern coast of Africa to the Western Pacific**.

Drivers for Reviewing the INMSS

- **Evolving Geopolitical Landscape:**
  - **Salience of the Indo-Pacific:** Increasing importance due to **US–China strategic competition** and global trade connectivity.
  - **India's Economic and Strategic Rise:** Greater strategic autonomy, influence over critical corridors, and a stronger global role.
  - **Persistent Regional Threats:** Challenges from collusive inimical states, a fragile neighbourhood, and emerging security risks.
- **Emerging Warfighting Concepts:**
  - **No War No Peace (NWNP) Paradigm:** Persistent competition replacing the traditional war–peace binary.
  - **Primacy of Grey Zone Actions:** Growing use of grey-zone tactics as a preferred strategy by adversaries.
  - **New Domains of Warfare:** Expansion of conflict into **space, cyber, and cognitive domains** alongside conventional warfare.
- **Disruptive Technologies:** Use of **AI-enabled targeting, precision-guided munitions, long-range stand-off vectors, and space-based ISR**.
- **Higher Defence Organisation and Maritime Security Architecture:**
  - **Military Structural Evolution:** Reforms such as the **CDS** and **DMA** require recalibrated naval strategies.
  - **Jointmanship and Theaterisation:** Greater integration and impending theaterisation demand an adaptive framework.
  - **Integrated Maritime Governance: NMSC** under the **NSCS** strengthens a whole-of-government approach to maritime security.

Factors Influencing Maritime Security

- **Maritime Geography:**
  - **Strategic Location:** India's central position in the IOR astride major International Shipping Lanes (ISLs) enhances regional reach and influence.
  - **Vast Maritime Domain:** 11,098.81 km coastline, 1,389 islands, and an EEZ of over 2 million sq km.
  - **Expanding Continental Shelf:** Expected addition of about 1.2 million sq km to India's continental shelf.
- **Maritime Outlook:**
  - **Policy Focus:** Initiatives such as **MAHASAGAR, SAGAR, Maritime India Vision 2030, and Sagarmala** promote maritime growth and regional prosperity.
  - **Diaspora & Seafarers:** Maritime security supports India's **34 million diaspora** and **300,000 seafarers** (about 12% of the global workforce).

- **Maritime Economy:**
  - **Blue Economy & Trade:** Blue economy is projected to contribute **$100 billion by 2030**; **95% of trade by volume** and **68% by value** moves by sea.
  - **Import Dependence:** Sea routes carry **88% of crude oil, 50% of natural gas, and 20% of coal imports**, besides fertilisers and edible oils.
  - **Strategic Corridors: Chennai–Vladivostok Maritime Corridor, INSTC, and IMEC** strengthen connectivity and reduce dependence on vulnerable choke points.
- **Marine Infrastructure:**
  - **Ports & Shipyards:** Trade and logistics depend on **12 major ports, 217 non-major ports, and 79 shipyards**.
  - **Submarine Cables:** Undersea cables carry over **95% of intercontinental internet and voice traffic**.
  - **Overseas Research Stations: Bharati and Maitri (Antarctica)** and **Himadri (Arctic)** enhance India's scientific and strategic presence.

Maritime Threats and Challenges

- **State-Based and Hybrid Threats:**
  - **Direct State Adversaries:** Use of military and naval forces by hostile states against India.
  - **Undermining the Rules-Based Order:** Violations of the **IMBL**, illegal activities in the **EEZ**, use of **dual-use platforms/ infrastructure**, and regional militarisation.
  - **Hybrid Threats:** Use of proxies, **maritime militias**, cyber-attacks, and deniable operations to achieve strategic objectives below the threshold of war.
- **Maritime Terrorism:**
  - **Attacks From and At Sea:** Terrorist groups exploit the maritime domain to launch attacks.
  - **Technology and State Support:** Threat amplified by **Commercial Off-The-Shelf (COTS) technologies**, specialised expertise, and support from state sponsors or radicalised agencies.

MARITIME RESOURCES

Comprehensive array of living, non-living, and renewable assets found within oceanic environments exploited for economic value

Resource	Details
Fisheries	**2nd** largest fish-producer globally with **8%** global share. Supports over **28 million** people. Earning **$7.3 bn** foreign exchange (2024 figure).
Offshore Oil and Gas	Critical for domestic energy. Offshore Domestic Production – Over **52%** Crude / **71%** Natural Gas.
Offshore Mineral Reserves	Diverse portfolio of critical resources. Potential: **589,000 sq km** Offshore Prospective Areas within EEZ. Deep Ocean Mission to exploit seabed minerals.
Offshore Renewable Energy	Harnessing renewable energy from tidal, wave, marine current and ocean thermal resources. Offshore wind energy potential – Over **70 GW** | Auction **37 GW** by 2030.

- **Maritime Crimes and Illicit Activities:**
  - **Piracy and Armed Robbery:** Attacks on maritime trade on the high seas and within territorial waters.
  - **Trafficking and Smuggling:** Sea-based movement of **narcotics, small arms, human beings, protected wildlife, and WMD-related materials**.
  - **IUU Fishing: Illegal, Unreported and Unregulated (IUU) fishing** threatens marine ecosystems, biodiversity, food security, and coastal livelihoods.
  - **Marine Pollution:** Large-scale pollution, particularly **plastic waste**, degrading marine ecosystems.
  - **Dark Vessels and Shadow Fleets:** Ships disabling **AIS** and other tracking systems to evade regulations, sanctions, and detection.
- **Maritime Incidents and Emerging Threats:** Security-related events such as **fires, flooding, collisions, and groundings** at sea or ashore.

Strategies Adopted for Maritime Security (INMSS -2026)

- **Shape a Favourable Maritime Environment:**
  - **Proactive Presence & Crisis Response:** Maintain persistent deployments to secure sea lanes and act as a **First Responder** during disasters and evacuation operations.
  - **Preferred Security Partner:** Strengthen friendly foreign countries through training, joint exercises, capacity building, and material support.
  - **Governance & Awareness:** Contribute to global maritime governance and promote maritime consciousness among citizens.
- **Security of Coastal and Offshore Interests:**
  - **Coordinated Inter-Agency Action:** Conduct layered patrols and joint contingency planning among the **Navy, Coast Guard, and Marine Police** through **Joint Operations Centres (JOCs)**.

- **Community Engagement:** Integrate coastal and fishing communities as the "eyes and ears" of maritime security.
- **Deter Potential Adversaries:**
  - **Nuclear & Conventional Deterrence:** Maintain a survivable **SSBN-based nuclear deterrent** and a modern, balanced conventional force.
  - **Posture & Signalling:** Use forward deployments, strategic communication and international partnerships to signal readiness and raise the costs of aggression.
- **Prevail Below the Threshold of Conflict (No War No Peace):**
  - **Continuous Assessment:** Sustain intelligence gathering and threat evaluation to detect and counter adversarial actions early.
  - **Scalable Responses:** Employ calibrated options, including **autonomous systems**, for swift action without unintended escalation.
- **Attain National Objectives During Conflict:**
  - **Swift & Overwhelming Force:** Rapidly transition to conflict through concentrated kinetic and non-kinetic **multi-domain operations**.
  - **Economic Warfare:** Protect India's trade and energy routes while disrupting the adversary's maritime commerce and strategic commodities.
  - **Power Projection & Defence:** Defend coastal and offshore assets and project power ashore through **precision maritime strikes** and **amphibious operations**.

Conclusion

By aligning operational readiness with strategic foresight, strengthening integration across agencies and domains and continuously adapting to emerging risks, the Indian Navy will remain central to safeguarding India's maritime interests in the decades ahead.

4.2. MONEY LAUNDERING

Why in the news?

Directorate of Enforcement (ED) released its FY 2025–26 Annual Report, which highlights a **23-fold increase in assets attached in money laundering cases, rising from** ₹5,171 crore (2005–14) to ₹1.19 lakh crore (2014–24).

Other Key findings of Annual Report

- **Stronger Prevention of Money-Laundering Act (PMLA), 2002 Enforcement:** ED filed **657 main prosecution complaints** in FY 2025–26 (nearly double 333 in FY 2024–25).
  - Over **41% of all PMLA complaints** filed to date were **registered in last two years**.
- **Conviction rate: ~94%** in money laundering cases**.**
- **Fugitive Economic Offenders Act (FEOA), 2018**: Properties worth ₹2,178.34 crore confiscated under it**.**

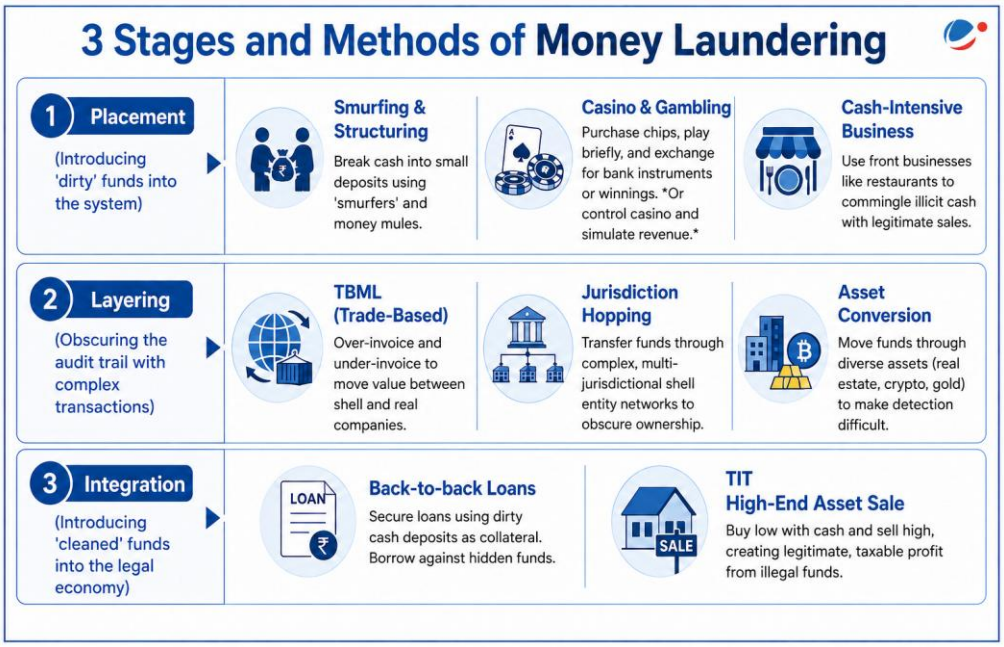
Directorate of Enforcement (HQ: New Delhi)

- **Genesis:** Established on **1st May 1956** as "Enforcement Unit" under Department of Economic Affairs for enforcing **Foreign Exchange Regulation Act, 1947 (FERA).**
  - Presently, it operates under **Department of Revenue, Ministry of Finance**.
- **About**: A multi-disciplinary organization mandated with investigation of offence of money laundering and violations of foreign exchange laws.
  - **Implement Legislations**: Entrusted with implementation of Foreign Exchange Regulation Act, 1973; Foreign Exchange Management Act, 1999; PMLA 2002; FEOA, 2018.

About Money Laundering

- **UN Vienna 1988 Convention** describes Money Laundering (ML) as the **conversion or transfer of property derived from criminal activity** to conceal its illicit origin or to help offenders evade legal consequences.

Impact of Money Laundering



- **Economic Impact**
  - **Economic Distortion:** ML distorts markets by **channelling illicit funds into sectors such as real estate** etc., **creating artificial price inflation**, while simultaneously reducing government revenues through tax evasion, under-reporting of income, and concealment of assets.
  - **Discourages Investment:** Rise in ML **undermines financial transparency, reducing domestic/foreign investment** while damaging country's reputation in global financial system.
  - **Parallel Economy:** The legitimization of illegally earned income **strengthens black economy** and encourages cash-based, unregulated transactions.
- **Political Impact**
  - **Threat to Democratic Processes:** Illicit funds enable criminal networks to **influence elections, political campaigns, and policymaking**, undermining democratic institutions.
- **Governance Impact**
  - **Rise in Corruption:** By concealing illicit gains from bribery and abuse of public office, it perpetuates corruption, **weakens accountability mechanisms,** and erodes institutional integrity.
  - **Increased Administrative Burden:** Combating ML requires extensive monitoring, investigation, prosecution, etc.
- **Security Impact**
  - **Organized Crime/Terrorism:** ML enables the funding of organized crimes and terrorist activities, strengthening criminal networks and posing serious **threats to internal security and national stability**.
- **Social Impact**
  - **Widening Inequality:** ML enables individuals engaged in illegal activities to accumulate and retain vast wealth outside the formal economy, further leading to socio-economic disparities.

Measures taken to tackle Money Laundering

- **Legislative Measures**:
  - **Benami Transactions (Prohibition) Amendment Act, 2016:** Route unaccounted money into financial system and seize Benami properties and punish those who are involved in these properties.
  - **Black Money (Undisclosed Foreign Income and Assets) Act, 2015**: Aims to bring back undisclosed (black) money stashed abroad.
- **Financial Intelligence Unit–India (FIU-IND):** Central national agency to provide quality financial intelligence for safeguarding financial system from abuses of ML, terrorism financing and other economic offences.
  - In January 2026, **FIU-IND Guidelines brought Virtual Digital Asset (VDA) Service Providers within anti-money laundering, Countering Financing of Terrorism (AML/CFT) regulatory framework**, requiring them to comply with due diligence and reporting obligations similar to other reporting entities.
- **KYC directions by RBI**: Regulated Entities shall carry out ML and Terrorist Financing (TF) Risk Assessment exercise periodically to identify, assess ML and TF risk for clients, countries or geographic areas etc.

- **Double Taxation Avoidance Agreements (DTAA):** Prevent tax evasion, ensuring taxpayers cannot exploit loopholes in international tax rules to avoid paying taxes.
- **International Cooperation:**
  - **UN Vienna Convention (1988):** It provides comprehensive measures against drug trafficking, including provisions against ML and the diversion of precursors chemicals.
  - **Financial Action Task Force (FATF):** Researches how money is laundered and terrorism is funded, promotes global standards to mitigate ML risks. India is a member.
  - **Palermo Convention, 2000 (UN Convention against Transnational Organized Crime (UNTOC)):** Criminalize participation in an organized criminal group, ML, corruption, and obstruction of justice.

Challenges in Preventing Money Laundering

- **Judicial Delays:** ML cases often involve **lengthy investigations and prolonged court proceedings**, resulting in low conviction rates and significant gap between assets seized and assets ultimately confiscated.
- **Increasing Complexity:** The use of advanced technologies, crypto currency, digital assets, layered transactions, etc. makes it **difficult to trace illicit funds.**
- **Lack of Coordination:** The **involvement of multiple agencies** (ED, CBI, financial intelligence) in AML enforcement leads to **delays in information sharing, fragmented investigations**, etc.
- **Lack of Regulation:** Inadequate regulation in sectors such as real estate, jewellery etc., coupled with prevalence of cash transactions.
- **Multi-Jurisdictional Frameworks:** AML compliance regulations vary across jurisdictions. For organisations with a global presence, it is a challenge to ensure compliance with multiple cross-border regulations.
  - E.g. European Union directives versus local frameworks like PMLA, 2002 in India.

Conclusion

Strengthening the anti-money laundering and counter-terror financing framework requires a coordinated approach encompassing faster prosecution, risk-based regulation, robust supervision, enhanced international cooperation, and effective intelligence sharing.

4.3. NEWS IN SHORTS

4.3.1. CHIEF OF DEFENCE STAFF (CDS)

The Government has appointed **Lieutenant General NS Raja Subramani (Retd**) as the next Chief of Defence Staff (CDS).

About CDS

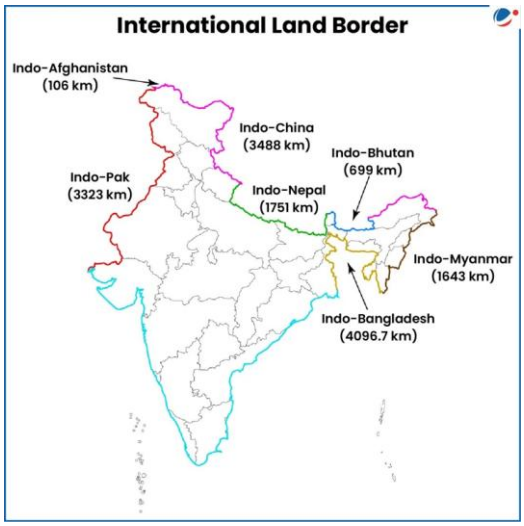
- **Genesis:** The post of CDS was **created in 2019** on the recommendations of a Group of Ministers (GoM) in 2001, **based on the 1999 K. Subrahmanyam Committee (or Kargil Review Committee) Report**.

- **Roles and Responsibilities of CDS:**
  - **Principal Military Adviser to the Raksha Mantri** on all tri-service matters.
  - **Head of Department of Military Affairs (DMA):** As the **ex-officio Secretary**, the CDS oversees **Armed Forces Affairs**, **Procurement** (excluding capital acquisitions), and **Integration** (promoting "**jointness**" in training, logistics, etc.).
  - **Permanent Chairman of Chiefs of Staff Committee:** acting as "**first among equals**" to coordinate between the three Service Chiefs.
  - **Strategic Mandates: Theatre Commands**, **Nuclear Authority** (Military Adviser to the Nuclear Command Authority) and **Policy & Planning**.

4.3.2. SMART BORDER PROJECT

The proposed Smart Border Project by Ministry of Home Affairs will be equipped with drones, radars, modern cameras, and other advanced technologies, making entire borders with Bangladesh and Pakistan impenetrable.

Need for Smart Border Project in India



- **Vast Land Border:** India shares 15,106.7 kilometres of land border with seven countries (Bangladesh, China, Pakistan, Nepal, Myanmar, Bhutan and Afghanistan).
- **Countering Illegal Activities:** To curb illegal infiltration, organized crime, smuggling of narcotics, cattle, weapons and counterfeit currency.
- **Tackling Emerging Security Threats:** Such as cyber threats, hybrid warfare, and drone-based intrusions.
- **Managing Difficult Terrain and Climate:** Varied terrain such as deserts, glaciers, lakes, rivers, snow-covered peaks, swampy marshes, fertile lands, and tropical forests not suitable for sustaining manpower.
- **Enhancing Efficiency Through Technology:** To ensure integrated, real-time, and technology-driven border security management.

Initiatives taken for Smart Border Management

- **Anti-Drone Systems:** Integration of jamming and detection tech to counter aerial threats. E.g. IG T-Shul Pulse Anti-Drone System.
- **Comprehensive Integrated Border Management System (CIBMS)**: Deployment of smart fencing, sensors, radars, CCTV cameras, and command-control systems for real-time border monitoring.
- **BOLD-QIT (Border Electronically Dominated QRT Interception Technique) project:** It is a high-tech "smart fencing" initiative launched by the Border Security Force (BSF) along the Indo-Bangladesh border.

4.3.3. SIPRI TRENDS IN WORLD MILITARY EXPENDITURE, 2025

SIPRI has released the **Trends in World Military Expenditure, 2025 Report.**

- **SIPRI (Stockholm International Peace Research Institute)** is an independent international institute dedicated to research into conflict, arms control and disarmament established in **1966 in Stockholm (Sweden).**

Key Findings

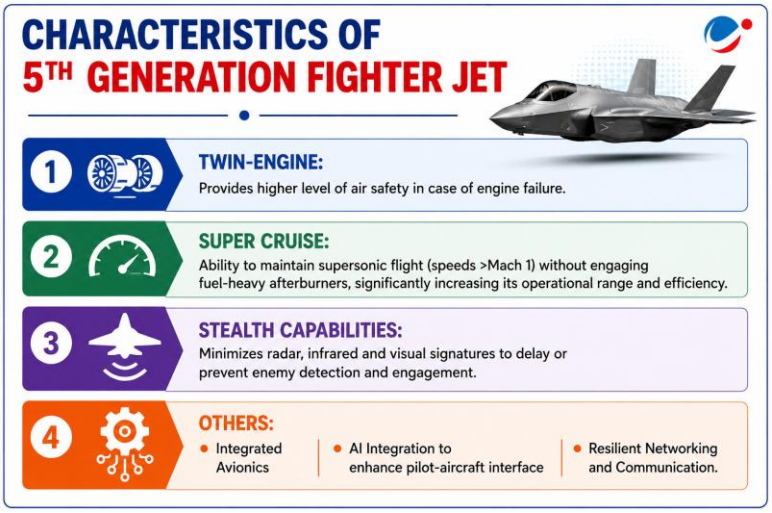
- The **five biggest military spenders in 2025**—United States, China, Russia, Germany and **India**—accounted for **58% of global spending**.
  - **India is the fifth biggest spender (3.2% of total global expenditure**) in the world with total expenditure of $92.1 billion.
  - India's spending saw a surge of **8.9%** compared to the previous year.

4.3.4. 5TH-GENERATION ADVANCED MEDIUM COMBAT AIRCRAFT (AMCA)

Defence Minister laid foundation stone for **AMCA programme facility in Andhra Pradesh.**

About Advanced Medium Combat Aircraft (AMCA)

- AMCA is India's indigenous 5th-generation medium-weight stealth multirole fighter jet.
- **Developed by:** Aeronautical Development Agency, DRDO.
- **Variants:** AMCA Mk1 with GE-F414 engines; Mk2 planned with indigenous engines.
- **Timeline:** Prototype expected by 2028-29 and induction targeted by 2034-35.



Examples of Operational 5th Generation Fighter Jets: F-22 and F-35 (United States), Sukhoi Su-57 (Russia), Chengdu J-20 (China).

Strategic Importance of 5th Generation Fighter Jet AMCA

- **IAF Modernisation:** Fills critical capability gap post-MiG-29/Mirage phaseout, helps restore IAF's depleted squadron strength.
- **Technological Sovereignty:** Reduces dependency on foreign platforms, enhances long-term defence autonomy through Make in India.
- **Atmanirbhar Bharat:** Enhances India's indigenous defence capabilities by fostering a **robust domestic aerospace industrial ecosystem.**

4.3.5. 'DIVYASTRA' MISSILE

India conducted the **2nd successful flight-trial of 'Divyastra' Missile** from Dr. APJ Abdul Kalam Island, Odisha.

About 'Divyastra' Missile

- It is an **advanced Agni Missile** equipped with **Multiple Independently Targeted Re-Entry Vehicle system (MIRV) system.**
- **MIRV system:** Originally developed in the **early 1960s**, it allows a **single missile to carry multiple nuclear warheads**, each capable of striking **different targets independently**.
  - **The United States of America** (first country to develop MIRV technology), **Russia, the United Kingdom, France, and China** also have MIRV Technology.

4.3.6. VAYU ASTRA-1

Indigenous Vayu Astra-1 successfully completed high-altitude trials.

About Vayu Astra-1

- It is a **loitering munition** (also referred as kamikaze/suicide drone) capable of hovering, surveillance and precision strikes.
  - **Suicide drone** is an unmanned aerial weapon that can hover over a target area before crashing into and destroying the target with an onboard explosive payload
- **Range and Payload:** 100 km range tested with a 10-kg warhead.
- **Features:** Precision & night capability, high-altitude endurance, intelligent combat features, etc.

4.3.7. NAVAL ANTI-SHIP MISSILE-SHORT RANGE (NASM-SR)

DRDO & Indian Navy successfully conduct maiden salvo launch of Naval Anti-ship Missile-Short Range

About **Naval Anti-ship Missile-Short Range**

- Developed by: **DRDO** for Indian Navy.
- **Propulsion System**: Uses a solid propulsion booster and long-burn sustainer.
- **Key Features**: Imaging Infra-Red Seeker for terminal guidance, a Fibre Optic Gyroscope-based Inertial Navigation System (INS), and a Radio Altimeter for mid-course guidance.

4.3.8. PROJECT17A SHIPS

Mahendragiri, the **sixth ship of Nilgiri-class (Project 17A)** and **fourth** ship of the class built at **Mazagon Dock Shipbuilders Limited (MDSL),** was delivered to the Indian Navy.

- Other P17A ships are Dunagiri, Taragiri, Udaygiri, Himgiri, Nilgiri.

About Project 17A

- Project 17A frigates are versatile **multi-mission platforms**, designed by the **Warship Design Bureau (WDB)** and overseen by the Warship Overseeing Team (Mumbai).
- P17A ships are fitted with an advanced weapon and sensor suite as compared to the P17 (Shivalik-class) and include **anti-surface, anti-air, and anti-submarine warfare systems**.

- These ships are configured with **Combined Diesel or Gas (CODOG) propulsion plants,** comprising a diesel engine and a gas turbine.

4.3.9. TACTICAL ADVANCED RANGE AUGMENTATION (TARA) WEAPON

DRDO and the Indian Air Force (IAF) successfully conducted the maiden flight trial of the **Tactical Advanced Range Augmentation (TARA) weapon** in Odisha.

About TARA

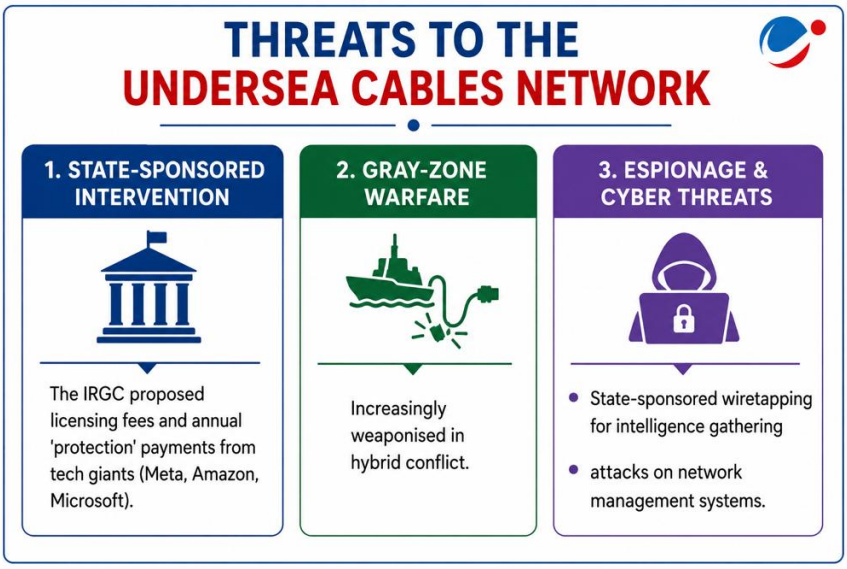
- It is India's first indigenous glide weapon system that **converts unguided warheads into precision-guided weapons**.
- **Developed by:** the Research Centre Imarat, Hyderabad, along with other DRDO laboratories**.**
- **Advantage**: Its **stand-off capability** allows pilots to release bombs from outside hostile air defence coverage.
  - **Once deployed**, the bombs glide at **high subsonic speeds (>650 km/h)**, with a **range of more than 80 km**, making interception difficult.
- **Other glide bomb in India:** Gaurav (Long Range Glide Bomb - LRGB), SAAW (Smart Anti-Airfield Weapon), etc.

4.3.10. GROWING VULNERABILITY OF UNDERSEA CABLES

Recent proposal by Iranian state media to impose charges on undersea cable operators in the Strait of Hormuz highlights the growing vulnerability of global undersea cables.

Undersea Cables

- Undersea, or submarine, cables are **fibre optic** lines laid on the ocean floor to carry global data and serve as the backbone of modern digital connectivity.
- These "**invisible highways**" transmit between 95% and 99% of all international data traffic.
- **United Nations General. Assembly (UNGA)** in 2010 had described Submarine cable as **"critical communication infrastructure"**.
- **Subsea cables** carry a much larger bandwidth and are more efficient, cost-effective, and reliable than satellites.
- Narrow maritime corridors such as the **Red Sea**, Strait of Hormuz, where multiple undersea cables converge, are often referred to as "**digital chokepoints**."



Implications for India

- **Financial Sector**: E.g., Stock trading and banking systems relying on fast connectivity could face paralysis within minutes.
- **IT and Outsourcing Sector**: E.g., India's IT-BPM industry relies on uninterrupted global connectivity for providing services to international clients.
- **Strategic and National Security Risks**: E.g., Military communications and intelligence sharing

4.3.11. TATP (TRIACETONE TRIPEROXIDE)

National Investigation Agency (NIA) highlights the use of **rare explosive mixture TATP** in the 2025 Red Fort blast.

About TATP ($C_9H_{18}O_6$)

- Also known as **"Mother of Satan"** and **acetone peroxide**, it is a **semi-stable crystalline solid**, attractive as a terror weapon as it is relatively easy to prepare.

- **Key Characteristics:** belongs to a class of **organic peroxide explosives.**
  - **extremely sensitive to impact, friction, static electricity, and heat.**
  - **extremely dangerous**, and even small quantities (1gram) can cause injury and damage.
- **Terror Linkages:** Used in major terror attacks like Paris (2015), Brussels (2016), Manchester Arena (2017), etc.

4.3.12. CAPTAGON

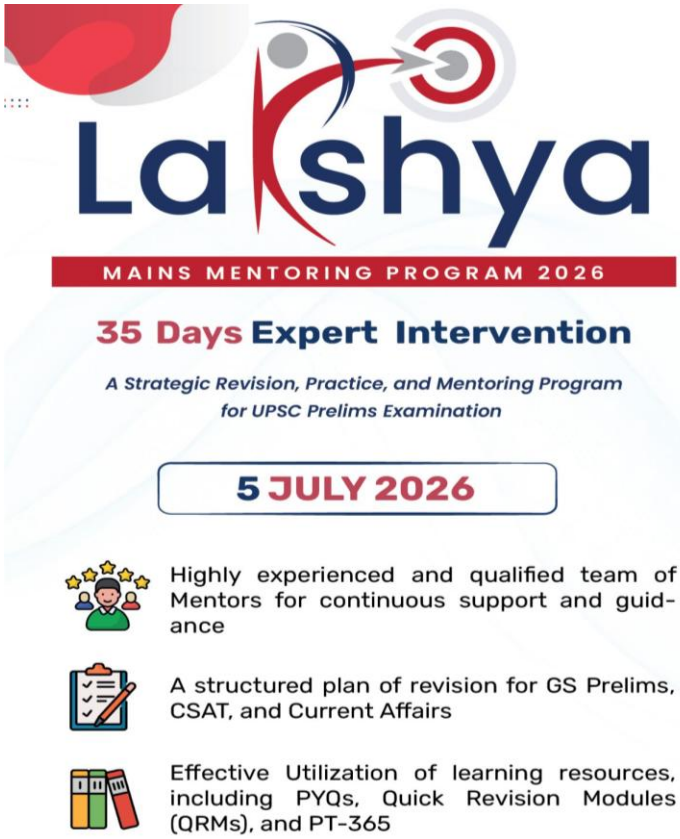
The Narcotics Control Bureau, under Operation RAGEPILL, unearthed the first ever international drug syndicate involved in the trafficking of Captagon.

About Captagon

- Captagon mainly contains **Fenetylline (Used** to treat conditions such as ADHD, depression and narcolepsy) **and Amphetamine** which are Psychotropic Substances under the **Narcotic Drugs and Psychotropic Substances Act, 1985.**
  - **NDPS Act** is enacted to prohibit and regulate the production, possession, trafficking, and consumption of narcotic drugs and psychotropic substances.
- Also known as the **"Jihadi Drug"** (used by militant groups like ISIS).
- Banned internationally in the 1980s after concerns over addiction and abuse, and was later placed under **Schedule II of the UN Convention on Psychotropic Substances.**

4.3.13. EXERCISES IN NEWS

- **CINBAX Exercise:** Joint military exercise with **Royal Cambodian Army.**
- **Exercise PRAGATI 2026: Multilateral military exercise** led by the Indian Army at Umroi Military Station, **Meghalaya**.
  - **Participating Countries**: 12 nations (Bhutan, Cambodia, Indonesia, Laos, Malaysia, Maldives, Myanmar, Nepal, Philippines, Seychelles, Sri Lanka and Vietnam).
  - PRAGATI stands for **Partnership of Regional Armies for Growth and Transformation in the Indian Ocean Region**.

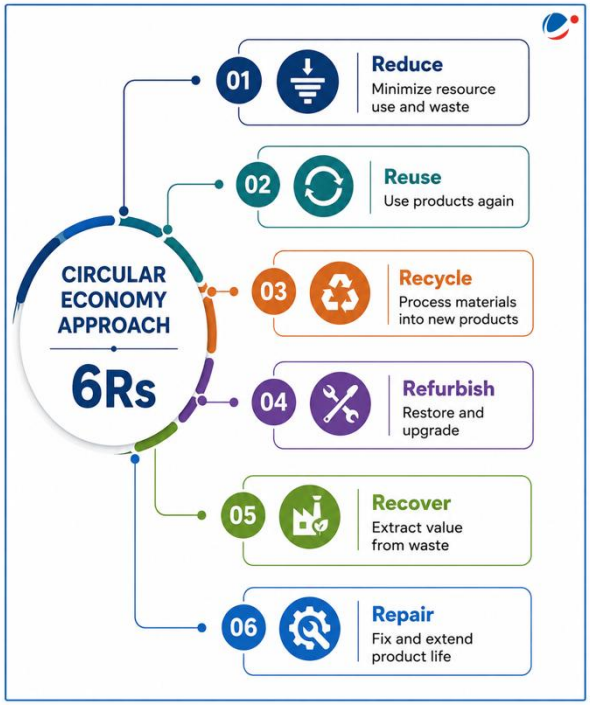


5. ENVIRONMENT

5.1. CIRCULAR ECONOMY

Why in the news?

Recently, the Material Recycling Association of India (MRAI) has advocated for establishing a centralised nodal agency or a dedicated ministry to promote the circular economy.

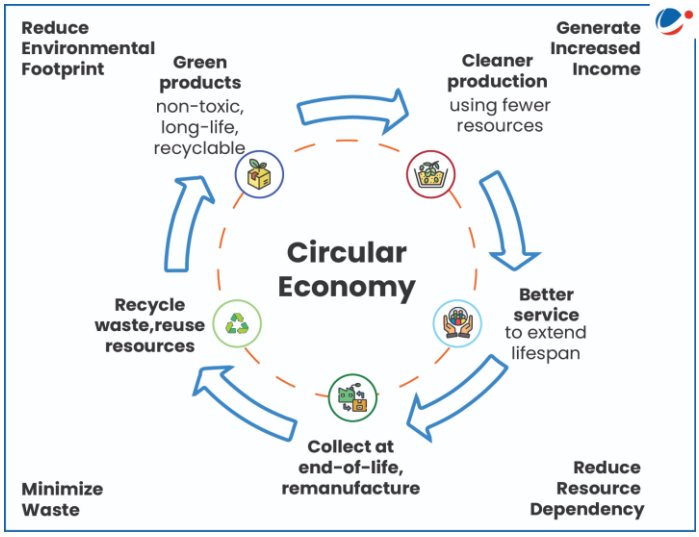


Circular Economy

- It is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible.
- It follows a strategy that **departs** from the traditional **linear "take-make-dispose" model**, where raw materials are extracted, turned into products, and then discarded as waste.
- E.g., electronic goods are refurbished, animal waste is processed into biogas for cooking, heating and lighting, etc.

Need of Promoting Circular economy in India

- **Mounting Waste Management Crisis:** India generates around 62 million tonnes of waste annually, with plastic, electronic, and hazardous waste growing rapidly.
  - For instance, India leads the world in plastic waste generation (as of 2024) and is world's third-largest E-waste generator (7% of global volumes).
- **Untapped Economic Value and Job Creation (Waste-to-Wealth):** It is projected to generate a market value of over $2 trillion and create up to 10 million jobs in India by 2050.
- **Mitigating Environmental and Climate Damage:** Annual greenhouse gas emissions from municipal solid waste alone are projected to reach 41.09 million tonnes by 2030.
- **Agricultural Sustainability:** India generates an estimated 350 million tonnes of agricultural waste annually, much of which is burned, leading to soil nutrient depletion and severe air pollution.
- **Blocked land:** It is estimated that more than 10,000 hectares of urban land is locked in dumpsites.



Challenges

- **Fragmented Governance and Institutional Bottlenecks**: The recycling and waste sector is governed by multiple ministries and regulatory bodies, leading to fragmented oversight and operational inefficiencies.
  - E.g., MoEFCC drafts environmental protection and waste regulations, while MoHUA manages urban planning and municipal implementation.
- **Financial and Infrastructural Gaps**: E.g., there are severe infrastructural deficits, such as inadequate systems to transport segregated wet waste to processing facilities.
- **Informal Sector Disconnect**: Despite handling a vast majority of material recovery, the informal sector remains without formal recognition.

- **Low recycling rate**: E.g., India's e-waste recycling rate is 10%, compared to the global average (~22%), and USA (56%).
- **Policy Limitations and Compliance Issues**: E.g., in the e-waste and battery sectors, policies primarily incentivise the extraction of high-value metals (like gold, copper, and aluminium) while excluding a wider basket of critical minerals.
- **Other issues**: Weak Traceability, informal nature of recycling industry, poor data collection and verification mechanisms, low skills, limited access to advanced recycling processes, collection inefficiencies, low consumer awareness, etc.

Initiative Taken

- **Strengthening Regulatory Frameworks and Enforcement**
  - **Extended Producer Responsibility (EPR):** EPR is transitioning from collection-based to recycling-based frameworks.
  - **Solid Waste Management (SWM) Rules, 2026:** SWM Rules mandate four-stream segregation at the source and enforce strict obligations on Bulk Waste Generators to process their own waste.
  - **E-Waste Management Rules 2022**: Strengthened EPR framework for producers and recyclers.
  - **Battery Waste Management Rules (BWMR), 2022**: Mandates collection, recycling, and refurbishment targets, prohibiting landfill disposal and incineration.
  - **National Critical Mineral Mission (NCMM), 2025:** Aims to develop domestic recycling capacity for critical minerals from lithium-ion batteries, e-waste and industrial scrap.
- **Digitization and Traceability:** The Ministry of Environment, Forest and Climate Change (MoEFCC) is developing a unified EPR portal expected to onboard up to 5 million users across the solid waste management ecosystem.
- **Agricultural Waste-to-Wealth Initiatives:** E.g., GOBARdhan Scheme, Crop Residue Management (CRM), etc.
- **Other**: Circular Economy Cell (CE Cell) constituted in NITI Aayog, LiFE Mission (Lifestyle for Environment), Swachh Bharat Mission (Urban & Rural), promoting Right to Repair, etc.

Know the term

- **Extended Producer Responsibility (EPR):** An environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle.

Ways to Promote the Circular Economy

- **Material-specific regulatory approach:** Implement sector-specific EPR frameworks, particularly in high-value recycling segments such as metals. Avoid a "one-size-fits-all" regulatory model.
- **Infrastructure Development**: Developing efficient waste management and logistics systems is vital to facilitate the systematic collection, processing, recycling, and recovery of resources, particularly in underserved and remote areas.
  - Establish a decentralized cluster-based approach for recycling waste.
- **Advancing Recycling Technologies and Innovation**: E.g., Conversion of Plastic Waste into Fuel oil (Refuse derived Fuel (RDF)) and Utilization of Plastic Waste in Road Construction
- **Circular by Design:** Minimise waste by integrating circular economy principles at the design stage of products, with emphasis on durability, reuse, repair, recovery, and recycling.
- **Enforce Binding Commitment**: E.g., mandate the use of a certain % of recycled waste in the construction sector.
- **Set Targets**: E.g., Countries like Netherlands aim for 100% circularity by 2050.

Digital Current Affairs
Read our previous coverage SWM Rules, 2026

Conclusion

A transition towards a circular economy in India requires strong institutional coordination, technological innovation, and inclusive participation across sectors. With effective policies, infrastructure, and behavioural change, it can simultaneously address waste management challenges, resource security, and climate goals.

5.2. SMALL HYDRO POWER (SHP) DEVELOPMENT SCHEME

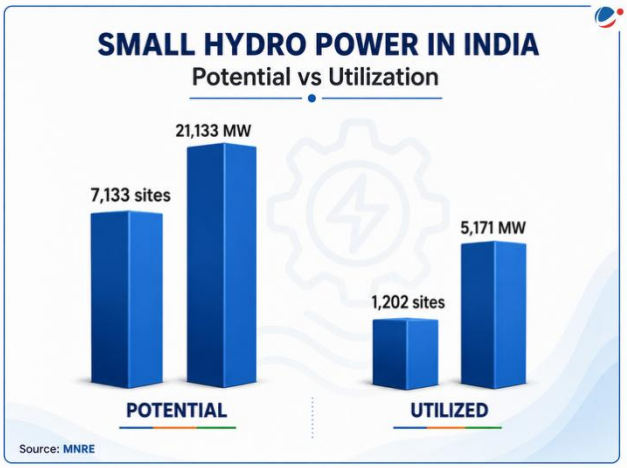
Why in the News?

The government approved the Small Hydro Power (SHP) Development Scheme to boost small hydropower development.

Small Hydro Power in India

- Small Hydro Power (SHP) projects are hydropower projects with an installed **capacity of up to 25 MW** and are administered by the Ministry of New and Renewable Energy (MNRE)**.**
  - **Large Hydro Projects:** Projects with capacity above 25 MW are administered by the **Ministry of Power.**
- **Run-of-the-River (RoR) Projects:** Hydropower projects that generate electricity using the natural flow of a river **without large dams or storage reservoirs.**
- **Installed Capacity:** Around **5,171 MW (as of early 2026).**
- **Potential:** India has an estimated **21,133.61 MW** of Small Hydro Power potential across **7,133** identified sites, of which only **24.5%** has been harnessed so far.
- **Highest Potential Region: Northern Region** with **7,978 MW** (~38% of total SHP potential).
  - **Himachal Pradesh** leads the region with **3,460 MW** of SHP potential.

About Small Hydro Power (SHP) Development Scheme



- **Ministry:** Ministry of New and Renewable Energy (MNRE).
- **Duration:** Five-year period (2026–27 to 2030–31).
- **Outlay:** ₹2,584.60 crore.
- **Objective:** To accelerate the development of Small Hydro Power projects and harness India's untapped hydropower potential, particularly in hilly and North-Eastern regions.
- **Target:** Addition of approximately **1,500 MW** of new SHP capacity.
- **Coverage:** Small Hydro Projects with installed capacity between **1 MW and 25 MW**.
- **Focus Areas:** Hilly States, North-Eastern States, International Border Districts, and remote areas.

Key Features of the Scheme

- **Financial Support Structure**
  - **North-Eastern States & International Border Districts:** Financial assistance of **₹3.6 crore per MW** or **30% of project cost** (whichever is lower), subject to a ceiling of **₹30 crore per project**.
  - **Other Locations:** Financial assistance of **₹2.4 crore per MW** or **20% of project cost** (whichever is lower), subject to a ceiling of **₹20 crore per project**.
- **Pipeline Development and Detailed Project Reports (DPR) Support**
  - **DPR Support:** Assistance for preparation of **Detailed Project Reports (DPRs)** for a minimum of **200 projects**.
  - **Project Pipeline Development:** Separate allocation of **₹30 crore** for central and state agencies to develop a strong future project pipeline.
- **Investment and Economic Impact**
  - **Investment Mobilisation:** Expected to attract around **₹15,000 crore** investment in the small hydro sector.
  - **Atmanirbhar Bharat:** Promotes the use of **indigenous plant and machinery**, boosting domestic manufacturing and supply chains.
- **Employment Generation**
  - **Construction Employment:** Expected to generate approximately **51 lakh person-days** during the construction phase.
  - **Long-Term Livelihoods:** Creates sustained employment opportunities in **operation and maintenance**, particularly in rural and remote regions.

Significance of Small Hydro Power (SHP)

- **Decentralised Power:** Reduces transmission losses and improves reliability in remote, hilly, and border areas.
- **Clean Energy:** Generates emission-free electricity without fuel consumption.
- **Rural Development:** Enhances energy access and supports local economic growth.
- **Employment Generation:** Creates jobs during construction, operation, and maintenance.
- **Environmental Sustainability:** Low ecological footprint with minimal land requirement and displacement.
- **Energy Security:** Provides reliable **Round-the-Clock (RTC)** renewable power and supports grid stability.

Conclusion

As India advances towards greater energy self-reliance and a sustainable future, small hydro power offers a balanced solution that combines environmental responsibility with socio-economic progress. The scheme will illuminate underserved areas, enhance grid resilience, and contribute meaningfully to building a cleaner, stronger, and more self-sufficient India.

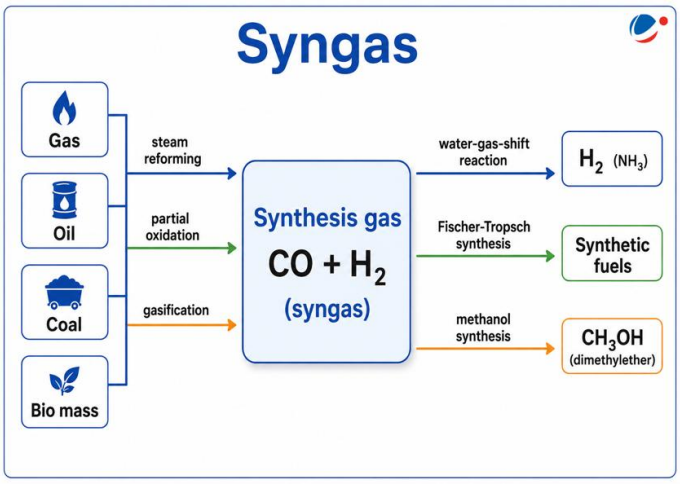
5.3. SCHEME FOR PROMOTION OF SURFACE COAL/LIGNITE GASIFICATION PROJECTS

Why in the News?

The Union Cabinet approved ₹ 37,500-crore incentive scheme to promote surface coal and lignite gasification projects under Ministry of Coal.

About Coal Gasification

- **Definition:** Coal gasification is a thermo-chemical process that converts coal into a combustible synthetic gas, known as syngas, without directly burning the coal.
- **Mechanism:** Crushed coal is reacted with a controlled amount of oxygen and steam at extreme temperatures (1,000 to 1,600°C) and high pressures (20 to 70 bar).
- **Syngas Composition:** The resulting synthetic gas is primarily a mixture of carbon monoxide (CO) and hydrogen (H_2).
- **Technological Adaptation:** Since Indian coal contains exceptionally high ash (30-45%), indigenous fluidised-bed gasifiers are deployed.



- **End Products:** Through downstream processes like methanol synthesis, methanation, and Fischer-Tropsch synthesis, syngas is utilized to produce methanol, ammonia, urea, dimethyl ether (DME), hydrogen, and synthetic natural gas (SNG).
- **Cleaner Alternative:** It is significantly more efficient than direct coal combustion and facilitates easier carbon capture, as CO_2 is produced in a concentrated stream.

Other Key Features of the Scheme

- **Investment Caps:** Incentives are capped at Rs 5,000 crore for a single project, Rs 9,000 crore for any single product (excluding Urea and Synthetic Natural Gas), and Rs 12,000 crore for a single corporate group across all projects.
- **Bidding Process:** Selection of beneficiaries will be conducted via a transparent, competitive bidding mechanism.
- **Technology Agnostic:** The scheme is completely technology-agnostic while **actively encouraging** the adoption of indigenous gasification technologies.

Significance of the Scheme

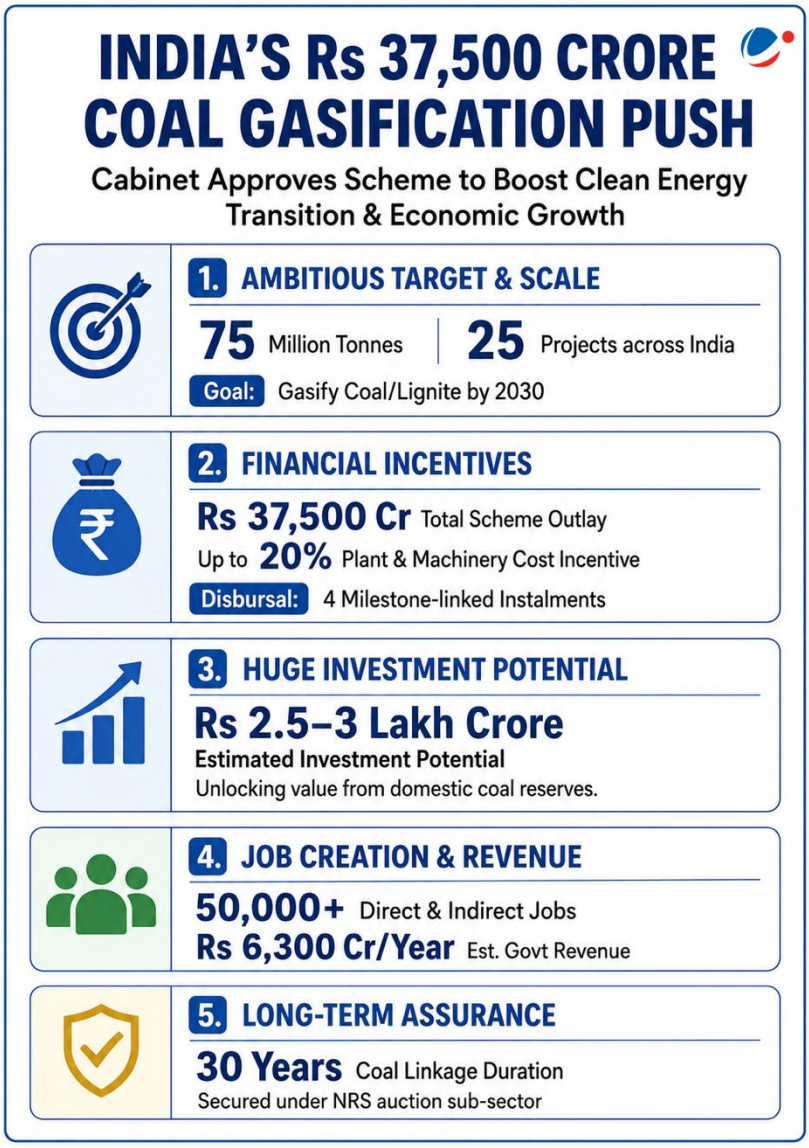
- **Import Substitution:** India heavily relies on imports for over 50% of its LNG, 100% of ammonia, 20% of urea, and 80-90% of methanol.

- This scheme aims to substitute these with domestic coal-derived products, tackling an import bill that stood at Rs 2.77 lakh crore in FY25.

- **Strategic Energy Security:** By leveraging its coal and lignite reserves, India cushions itself against global supply-chain disruptions, geopolitical shocks, and foreign exchange volatility.
- **Raw Material for Steel Sector:** Syngas serves as a vital reducing agent in steelmaking (Direct Reduced Iron operations), partially substituting imported inputs like coking coal and natural gas.
- **Employment and Revenue:** The initiative will create ~ 50,000 direct and indirect jobs across 25 projects in coal-bearing regions. It will also generate ~ ₹ 6,300 crore annually in government revenue, alongside downstream taxes.
- **Technological Self-Reliance:** The new scheme builds on the **National Coal Gasification Mission (2021)**. It advances India's indigenous surface coal gasification capability by minimizing reliance on foreign engineering and procurement contractors.

Challenges Associated With Coal Gasification

- **Capital Costs & Coal Quality:** Gasification plants are capital-intensive and require long gestation periods to achieve commercial viability.
  - The high ash content (30-45%) in Indian coal renders many global gasifier technologies techno-economically unviable, increasing capital intensity and necessitating costly indigenous innovations.
- **Decarbonisation Contradiction:** Despite being relatively cleaner than open burning, coal gasification remains a highly carbon-intensive pathway.
  - Syngas-based DRI steel production emits more CO_2 than conventional blast furnaces.
- **Efficacy of Carbon Capture:** While the scheme aligns with CCUS (Carbon Capture, Utilisation, and Storage) technologies, current global and domestic CCUS deployments suffer from technological limits, high costs, and underperformance.
- **Ecological Constraints:** Gasification involves significant water usage, exacerbating water shortages in mining regions. It also produces heavy-metal-laden waste **slag**, posing severe environmental disposal and groundwater contamination risks.



Way Forward

- **Indigenous Technology:** Accelerate R&D to refine Pressurized Fluidized Bed Gasification **(PFBG),** which are engineered to efficiently handle India's high-ash (30-45%) coal **without** severe slagging or defluidization issues.
- **Enhance Financial Viability:** Complement the scheme with fiscal enablers; such as tax holidays, import duty exemptions on capital goods, etc.; to attract private investments and mitigate high initial capital costs.
- **Decarbonization Efforts:** Maximize renewable energy usage and overall energy efficiency measures within gasification plants to lower immediate footprints while preparing for a long-term transition toward green hydrogen.

- **CCUS Integration:** Prioritise the commercialisation and integration of CCUS technologies within gasification hubs to align with India's 2070 net-zero goals.
- **Facilitate Collaborative Frameworks:** Encourage Build-Own-Operate (BOO) models for project execution and operationalise regulated coal exchanges to ensure transparent, efficient price discovery and faster technology deployment

Conclusion

India's coal gasification scheme leverages vast reserves to cut imports and boost industrial independence. However, high ash content and carbon emissions pose major challenges. Ultimately, gasification should serve solely as an interim bridge, funding truly sustainable alternatives like green hydrogen and circular recycling ecosystems.

5.4. MARINE CARBON DIOXIDE REMOVAL (MCDR)

Why in the news?

There has been **growing interest in Marine Carbon Dioxide Removal (mCDR)** as a **climate-change mitigation tool.**

About mCDR

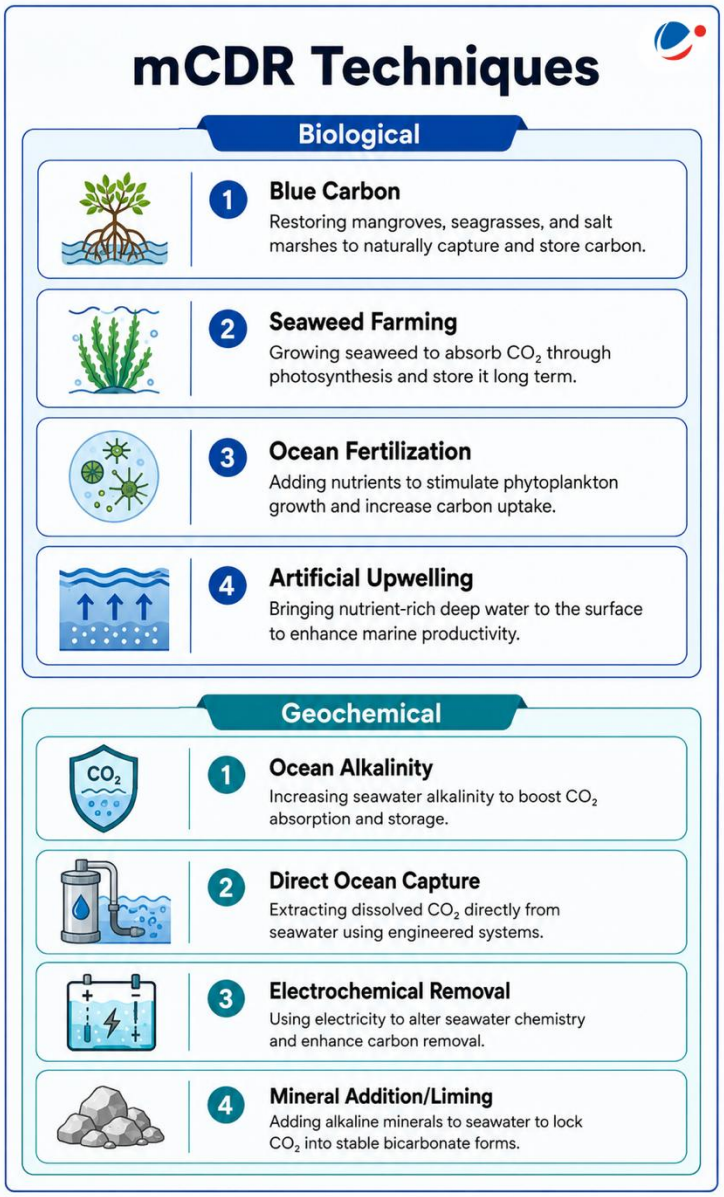
- It refers to methods that enhance the **ocean's ability to absorb and store atmospheric CO_2** to help tackle climate change.
- Examples include restoring **mangroves and seagrass, ocean alkalinity enhancement, biomass sinking**, and **artificial upwelling.**

Need of mCDR

- **Rising Atmospheric CO_2 Levels:** Global CO_2 emissions remain **high despite mitigation efforts,** mCDR can help **remove excess CO_2** already present in the atmosphere.
- **Ocean's huge Carbon Storage Capacity**: Oceans store over **50 times more carbon** than the atmosphere, making them a potential large-scale carbon sink.
- **Meeting Paris Climate Goals**: Achieving the **1.5°C and 2°C targets** may require **large-scale carbon removal** in addition to emission reductions.
- **Supports Blue Economy:** It can generate **employment and economic opportunities** in sectors such as **seaweed farming, ecosystem restoration**, and marine technologies.

Challenges of mCDR

- **Measurement, reporting, and verification challenges**: Accurate CO_2 tracking and carbon accounting remain difficult due to evolving monitoring technologies.
- **Environmental risks**: Ocean chemistry changes may harm marine ecosystems.
- **Scalability**: Large-scale deployment with high energy efficiency is challenging.



- **Lack of standards**: Robust carbon accounting and environmental assessment protocols are still evolving.
- **Governance gaps**: Clear regulations and permitting frameworks are lacking.
- **Public concerns**: Geoengineering fears may hinder acceptance and policy support.

Conclusion

Marine Carbon Dioxide Removal (mCDR) can complement but **not replace** deep emission reductions in addressing climate change. Unlocking its potential will require **science-based regulation, robust monitoring, environmental safeguards, and international cooperation** to ensure that ocean-based carbon removal is **safe, effective, and equitable**, supporting global **net-zero** and **Paris Agreement** goals.

5.5. INTERNATIONAL BIG CAT ALLIANCE

Why in the News?

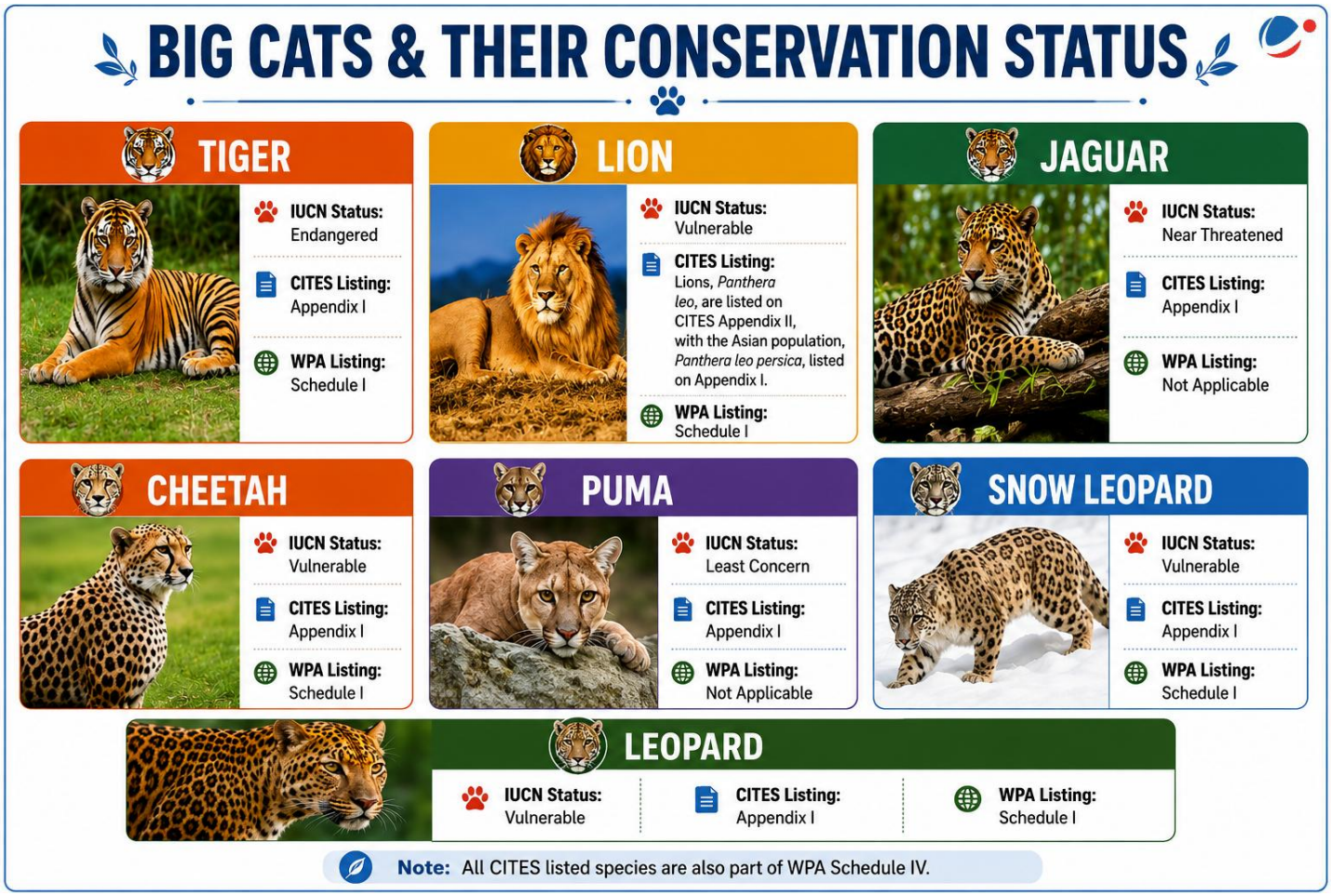
Recently, **Saudi Arabia** joined the International Big Cat Alliance (IBCA) as its **26th member nation.**

About International Big Cat Alliance (IBCA)

- **Overview:** It is a multi-country, multi-agency coalition comprising of 95 big cat range countries, non-range countries with an interest in big cat conservation.
- **Launch:** It was **officially launched in 2023** on the 50th anniversary of Project Tiger.
- **Objectives:**
  - To strengthen **global cooperation** by sharing **best practices, technical expertise, research**, and **financial resources** for protection and restoration of **big cat habitats and populations**.
  - To provide **immediate protection to big cats,** reduce threats to their survival, restore habitats, and **reverse the decline in big cat populations** globally.
- **Big Cats Covered:** It aims at conservation of 7 big cats namely **Lion, Tiger, Snow Leopard, Leopard, Cheetah, Jaguar, and Puma.**
- **Headquarter:** India
- **Member Countries: 26 member countries**, including the latest member **Saudi Arabia.**
- **Funding:** India has provided initial support of Rs. **150 crore for five years** (2023-24 to 2028-29).
  - Contributions from **bilateral, multilateral agencies, and public sector organizations**, among others, will be explored.

Importance of Big Cat Conservation

- **Maintains Ecological Balance:** Big cats are **apex predators** that **regulate herbivore populations** and **keep ecosystems healthy**.
- **Protects Biodiversity:** As **keystone species**, conserving big cats also **safeguards several other plants and animal species sharing** the same habitat.
- **Conserves Critical Habitats:** Big cat landscapes **support many species** such as **Asian elephants, Tibetan gazelle, Argali, and Chiru.**
- **Helps Climate Change Mitigation:** Protected forests and grasslands associated with big cats act as **important carbon sinks.**
- **Cultural Significance:** Big cats, especially tigers and lions, are deeply embedded in **folklore, traditions**, and **cultural heritage.**
- **Economic Importance:** Big cat conservation promotes **ecotourism** and supports **local livelihoods** and **employment opportunities.**



5.6. DAM SAFETY IN INDIA

India is undertaking one of the world's largest dam rehabilitation and safety modernisation programmes Dam Rehabilitation and Improvement Project (DRIP) focused on strengthening ageing water infrastructure.

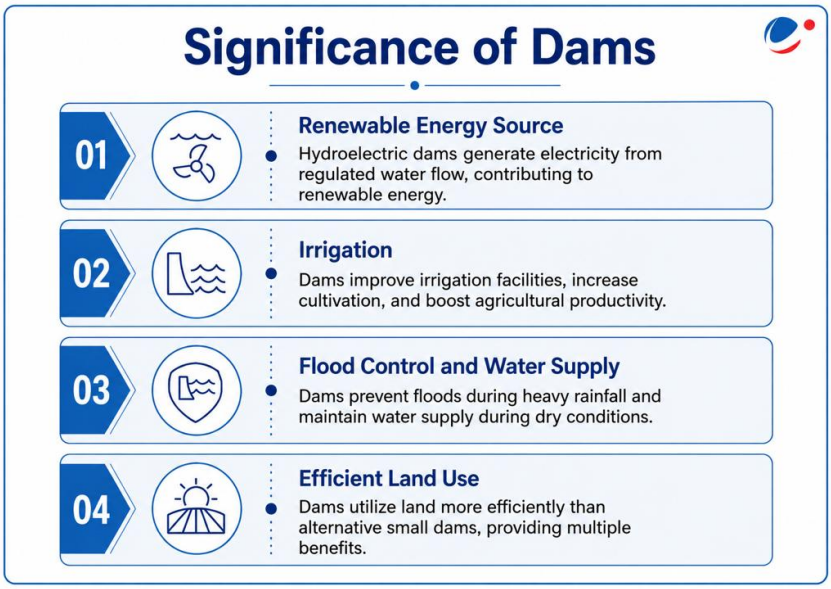
Status of Dams in India

- **Global ranking**: India **ranks 3rd** in terms of Large Dams worldwide, after the United States and China with **6,628 specified dams**.
- **Ownership:**
  - **98.5%** owned by State Governments.
  - 0.7% by Central Public Sector Undertakings
  - 0.6% by private entities
  - 0.2% by Central Government
- **State-wise distribution: Maharashtra** has the highest number of specified dams, followed by Madhya Pradesh, and Gujarat.

Concerns Associated with Dam safety in India

- **Ageing infrastructure:** About **26%** (1,681 dams) of the dams in India are **more than 50 years old,** of which 291 **that are more than 100 years old.**
- **Loss of storage capacity:** Reservoirs have lost an average of 19% of their gross storage capacity with an average reservoir age of 42 years due to sedimentation. (CWC data)
- **Seismic vulnerability:** E.g. The earthquake in Bhuj (Gujarat) in 2001, led to liquefaction in the foundation of Chang Dam.

- **Vulnerability to Glacial Lake Outburst:** E.g., in 2023, Chungthang Dam's (Sikkim) collapse during flash floods was caused by a glacial lake outburst.
- **Maintenance funding gap:** Dam safety concerns are often constrained by underfunded Operations and maintenance budgets.
- **Others:** Changing hydrological patterns; Structural failures due to seepage, corroded piping, and/or weak foundations; increasing climate variability; coordination issues in Transboundary river and basin etc.



Initiative taken to ensure Dams Safety in India

- **Dam Rehabilitation & Improvement Programme (DRIP):** It is being implemented in 3 phases to improve the safety and operational performance of existing dams through structural repairs, modernisation of spillways and gates, and installation of advanced monitoring systems.
  - **DRIP Phase I (2012–2021):** Launched in April 2012 with support from the World Bank; Covered 223 dams **across seven states**; Introduced Dam Health and Rehabilitation Monitoring Application (DHARMA).
  - **DRIP Phase II & III**: Operationalised in **2021;** Co-financed by the World Bank and **Asian Infrastructure Investment Bank (AIIB)**; Covers 736 dams across 19 states and three central agencies.

Do you know?

> India's oldest, the **Kallanai (Grand Anicut)** in Tamil Nadu, has functioned for nearly 2,000 years.

- **Dam Safety Act, 2021:** It provides for surveillance, inspection, operation and maintenance of specified dams. Key features of the act include-
  - **Creation of a 4-tier institutional structure-**
    - **National Committee on Dam Safety (NCDS):** Apex body
    - **National Dam Safety Authority (NDSA):** Regulatory and implementing arm
    - **State Committees on Dam Safety (SCDS)** and **State Dam Safety Organisations (SDSO):** Responsible for surveillance, inspection, and compliance at the state level.
  - **Responsibility on dam owners** to allocate adequate funds for maintenance and repairs,
  - **Others:** Regular inspections, installation of instrumentation systems, comprehensive dam safety evaluations, Risk Assessment Studies, Inflow Forecasting, Early Warning System, etc.
- **Capacity Building and Research:** International Centres of Excellence for Dams (ICEDs) have been established at **IIT Roorkee and IISc Bengaluru** and **National Centre for Earthquake Safety of Dams at MNIT Jaipur** to focus on seismic hazard mapping, advanced rehabilitation technologies, and risk assessment.
- **Digital Monitoring and AI Integration:**
  - **Dam Health and Rehabilitation Monitoring Application (DHARMA) App**: Digitally records inspections, tracks maintenance and hosts safety data for dams
  - **eAabhas:** An AI/ML and IoT-based real-time monitoring and flood forecasting platform for dams and barrages.

Way Forward

- **Shift to Lifecycle Management:** Future policies must continue to transition the national focus from merely constructing new dams to prioritizing the safety, resilience, and comprehensive lifecycle management of existing infrastructure.
- **Climate Resilience:** Dam owners in vulnerable regions must aggressively pursue Glacial Lake Outburst Flood (GLOF) studies and the installation of Early Warning Systems (EWS) prior to monsoon seasons.
- **Sustainable Financing:** To ensure long-term maintenance, sustainable financial models must be adopted.

Conclusion

The proactive and comprehensive reforms will not only safeguard downstream populations and reduce disaster risks but will also guarantee the long-term sustainability, operational efficiency, and resilience of India's vital water infrastructure for future generations.

5.7. SUPER EL NIÑO

Why in the News?

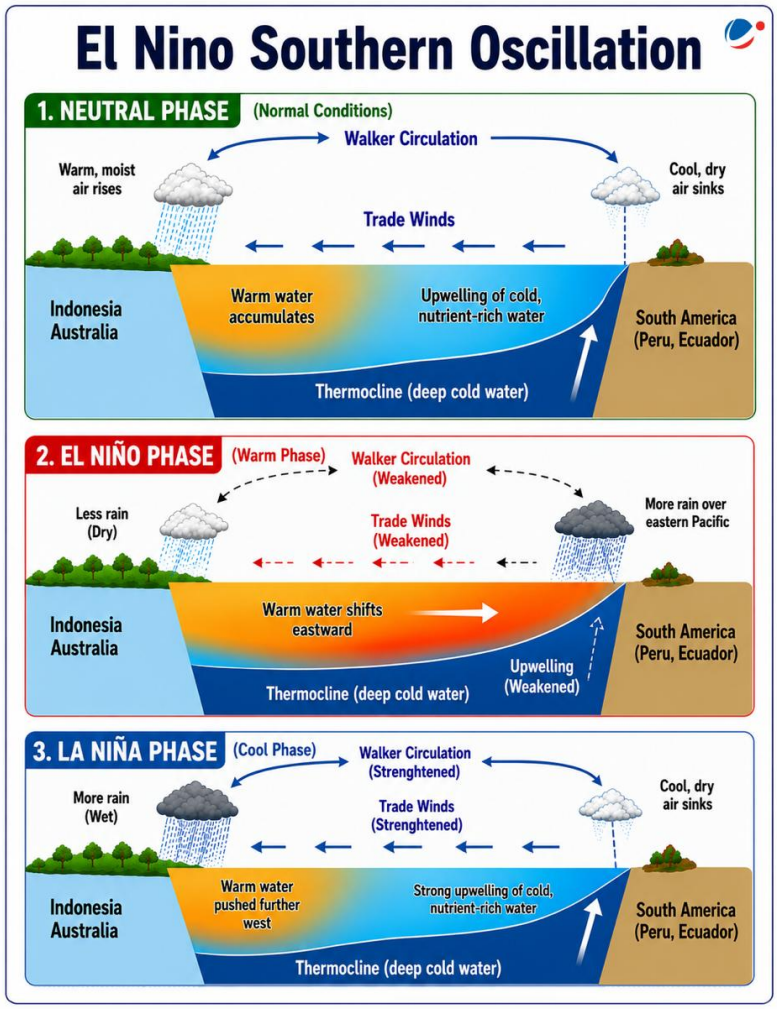
A forecast of a **super El Niño in late 2026**, possibly the **strongest in a century**, has raised concerns that it **could worsen extreme weather events**.

More in the News

- The Earth's atmosphere is **continuing to warm rapidly** due to **human-induced (anthropogenic)** climate change.
- According to the **World Meteorological Organization (WMO),** 2025 was among **the top three warmest year ever recorded globally.**
- The already elevated temperatures **could be further intensified by** the development of a **strong ("super") El Niño,** which typically **raises global temperatures** and increases the **likelihood of extreme heat events.**

About El Niño and Super El Nino

- **What is El Niño?**
  - The term **El Niño means "Little Boy" in Spanish**.
  - It was named by **Peruvian fishermen** because **unusually warm Pacific waters** generally appeared **around Christmas**.
  - It is **one of the three phases** of the **natural climatic phenomenon called El Niño–Southern Oscillation (ENSO).** ENSO has **three phases:**
    - **El Niño — Warm phase**
    - **La Niña — Cool phase**
    - **ENSO-neutral phase**
- **Super El Niño**
  - El Niño becomes **extremely intense when sea-surface temperatures** in the central and eastern Pacific Ocean **rise far above normal levels**.
    - Such exceptionally strong events are informally **called "Super El Niño."**
    - Although **"Super El Niño" is not an official scientific category** used by the **World Meteorological Organization**, the term is **commonly used for unusually powerful El Niño events** with major global impacts



- **What is ENSO?**
  - It is a **large-scale climate phenomenon involving periodic changes in**: Sea surface temperatures (SST), atmospheric pressure, trade winds, and ocean **circulation across the equatorial Pacific Ocean.**
  - It is **one of the most important drivers of global climate variability** and **significantly influences**: monsoons, rainfall patterns, droughts, floods, cyclones, agriculture, and global temperatures**.**

- ENSO has **three phases:**
  - **ENSO: Neutral phase**
  - **El Niño: Warm phase. Induces less rainfall in India.**
  - **La Niña: Cool phase. Induces more rainfall in India.**

Other related Concepts

- **El Niño Modoki**: It is a variation of the normal **El Niño phenomenon** in which warming occurs mainly in the **central Pacific Ocean** instead of the **eastern Pacific near South America**.
  - It can also **weaken the Indian monsoon** and **increase drought risk**, but its effects are **often different and sometimes more complex than normal El Niño.**
- **Indian Ocean Dipole (IOD):** It is a climate phenomenon caused **by differences in sea surface temperatures between the western Indian Ocean near Africa**, and the **eastern Indian Ocean** near Indonesia.
  - **Positive IOD**: **Western** Indian Ocean becomes **warmer**, often **strengthening the Indian monsoon.**
  - **Negative IOD: Eastern** Indian Ocean becomes warmer, often **weakening the monsoon**.
  - A **positive IOD can reduce the negative impact of El Niño** on Indian monsoon rainfall, while a **negative IOD can worsen drought** conditions **during El Niño years.**

Impact of El Niño on India

- **Weak Monsoon**: El Niño **weakens the Southwest Monsoon** by **reducing moisture flow** toward India, leading to **below-normal and uneven rainfall**.
- **Impact on Indian Agriculture**
  - **Reduced Crop Productivity**: El Niño reduces **crop productivity** by disrupting the basic **requirements for crop growth** such as **adequate rainfall, suitable temperatures**, and sufficient **soil moisture.**
  - **Increase in Pests and Diseases:** Higher temperatures and dry conditions during El Niño years increase **pest breeding and infestation**.
    - Pests such as **aphids and whiteflies spread rapidly**, while stressed crops become more **vulnerable to diseases**.
  - **Dryland Agriculture:** Dryland areas usually have **limited irrigation facilities**.
    - El Niño weakens the **monsoon and causes below-normal and irregular rainfall** in dryland regions.
    - As it depends mainly on **rainfall for its water harvesting techniques**, crops become **highly vulnerable to moisture stress**.
- **Drought Conditions**: Many major droughts in India, **such as 2002 and 2009, were linked to El Niño events.**
- **Economic Impact**: Poor agricultural output increases **food inflation, rural distress, and slows GDP growth.**
- **Water Scarcity**: Reservoir levels, **groundwater recharge, and irrigation water availability** decline during weak monsoon years.
- **Health and Environment**: El Niño can increase **heat waves, dengue and malaria cases**, forest fires, and **coral bleaching.**

Initiatives Taken to Minimise the impact

- **National Mission for Sustainable Agriculture (NMSA)** supports **climate-resilient farming practices in rainfed areas.**
- **Rainfed Area Development (RAD**) component under NMSA follows **a watershed-based approach** for conserving **natural resources**.
- Mission Mausam aims to reduce the impact of **extreme weather events caused by climate change and build stronger, more resilient communities.**
- Government provides crop insurance support under schemes such as **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)** also strengthens climate **adaptation in agriculture**.
- **Per Drop More Crop (PDMC) component** under PMKSY promotes efficient irrigation technologies such as **drip and sprinkler irrigation.**

Conclusion

Super El Niño highlights the increasing interaction between natural climate variability and human-induced climate change, amplifying the risks of extreme weather, water stress, and food insecurity. For a monsoon-dependent country like India, strengthening climate-resilient agriculture, improving early warning systems, promoting efficient water management, and enhancing disaster preparedness are essential to reducing vulnerability.

5.8. AI-ENABLED WEATHER FORECASTING SYSTEMS

Why in the News

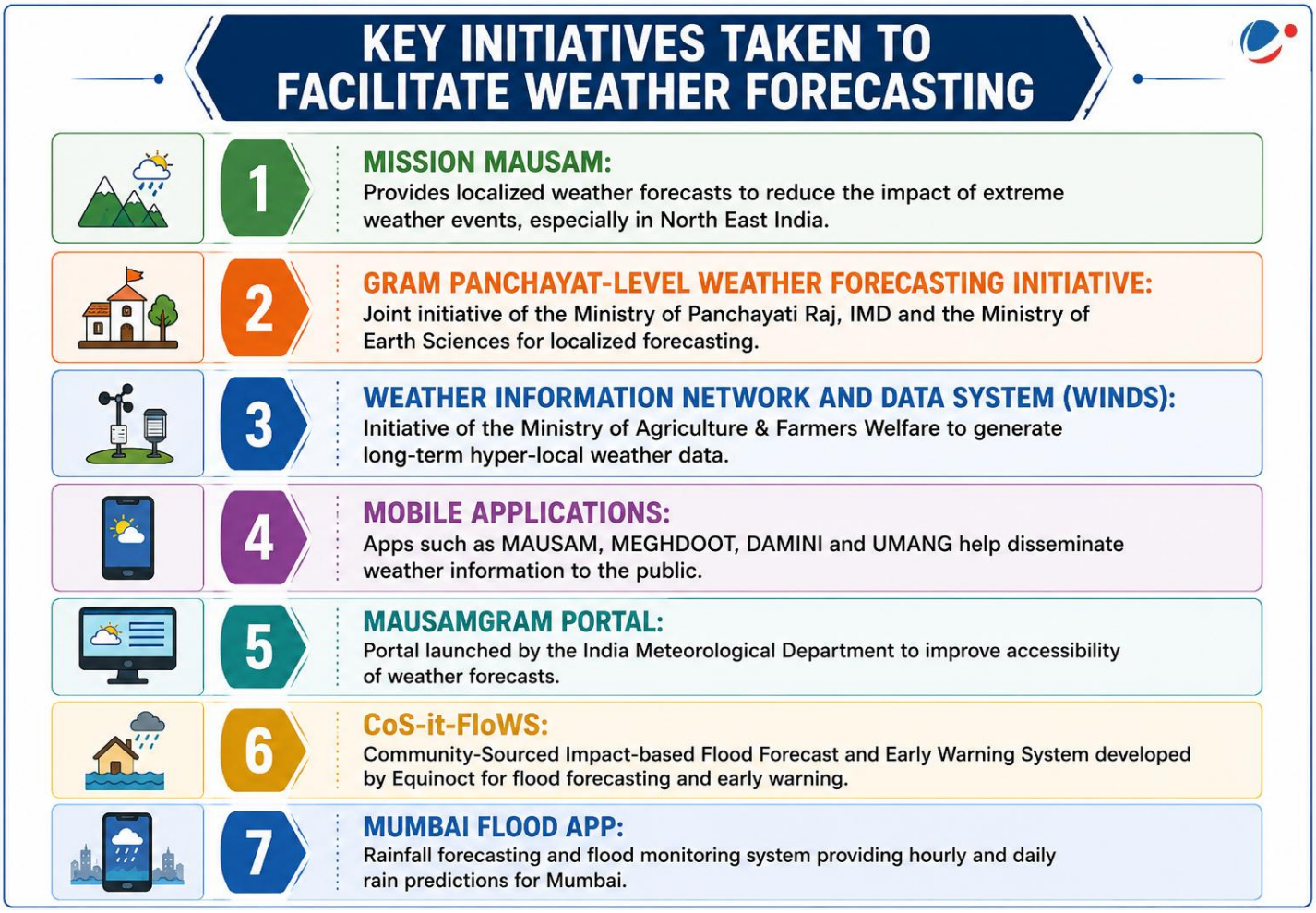
Ministry of Earth Sciences launched two advanced weather forecast products, aimed at delivering hyper-local, impact-based and AI-driven weather services across the country.

More on the News

- Two products launched include,
  - AI-enabled "Forecast of Monsoon Advance over Different Parts of the Country" and
  - "High Spatial Resolution Rainfall Forecast for Uttar Pradesh" as a pilot service.
- The systems are jointly developed by the **India Meteorological Department (IMD), Indian Institute of Tropical Meteorology Pune, and National Centre for Medium Range Weather Forecasting.**

About the AI-enabled Forecast of Monsoon Advance over Different Parts of the Country

- It is the first-ever **AI-driven monsoon advance forecasting system** developed by the **India Meteorological Department (IMD) and others.**
- It provides **probabilistic forecasts of monsoon progression** every Wednesday up to **4 weeks in advance.**
- **Agricultural Support:**
  - Designed to **support farmers** across **16 States and more than 3,000 sub-districts** through the dissemination framework of the **Ministry of Agriculture and Farmers' Welfare.**
  - It combines **AI-based forecasting models, extended range prediction systems and statistical techniques** for **agricultural planning and preparedness.**



About High Spatial Resolution Rainfall Forecast for Uttar Pradesh

- It is a **pilot service** providing rainfall forecasts at **1-km spatial resolution** up to **10 days in advance.**
- It uses **AI-driven downscaling techniques** and integrates data from **Automatic Rain Gauges, Automatic Weather Stations, Doppler Weather Radars,** and **Satellite-based rainfall datasets.**
- It is useful for **agriculture, disaster management, urban planning,** water resources and renewable energy sectors.

Significance of Hyper local Weather forecasting

- **Improved Agriculture Planning:** Provides precise **soil moisture, temperature and rainfall data** for better crop management.
- **Monsoon Variability:** Helps predict **India's tropical and highly unpredictable monsoon systems** more accurately.
- **Disaster Preparedness and Response:** Accurate prediction of **rain, cyclones, heatwaves and droughts** supports informed disaster management decisions.
- **Strengthens Grassroots Governance:** Makes **rural communities more climate-resilient** and better prepared for environmental challenges.
- **Urban Planning:** Helps monitor **air quality, heat distribution and rainfall** for better disaster management and prevention.
  - **Urban Heat Island Effect:** Helps **forecast higher temperatures** in urban areas caused by localized heating.
- **Global Climate Resilience:** Strengthens India's role in global climate resilience through **IMD's support to developing nations** under the **UN Early Warning for All initiative.**

Conclusion

The launch of **AI-enabled hyper-local weather forecasting systems** marks a major step towards **climate-resilient and technology-driven governance** by improving agricultural planning, disaster preparedness and public decision-making, while **strengthening India's leadership** in advanced weather forecasting and global climate resilience.

5.9. NEWS IN SHORTS

5.9.1. SEHAT, AN INITIATIVE LINKING AGRICULTURE AND HEALTH LAUNCHED

SEHAT – Science Excellence for Health through Agricultural Transformation is a joint initiative of **Indian Council of Medical Research (ICMR)** and **Indian Council of Agricultural Research (ICAR).**

Key Highlights of SEHAT

- **Vision:** Transform agriculture from food production system into powerful driver of **nutrition, health, and well-being** for India.
- **Five Priority Areas of National Significance:**
  - **Development and evaluation of biofortified and nutrient-dense crop varieties:** Address malnutrition and improve nutritional status.
    - **Biofortification** increases nutrient density of food crops through **conventional plant breeding, and/or improved agronomic practices and/or modern biotechnology** without sacrificing key characteristics.
    - E.g., enriching with zinc, iron and other nutrients.
  - **Strengthening Integrated Farming Systems:** Promote dietary diversification, enhance farm incomes, and build resilience.
  - **Addressing Occupational Health Risks:** Among agricultural workers through targeted, evidence-based interventions.
  - **Prevention and management of non-communicable diseases:** Advancing agriculture-enabled strategies through **promotion of functional foods and nutritionally superior crop varieties.**
  - **One Health preparedness**: Integrated surveillance, diagnostics, and research at **human–animal–environment interface.**

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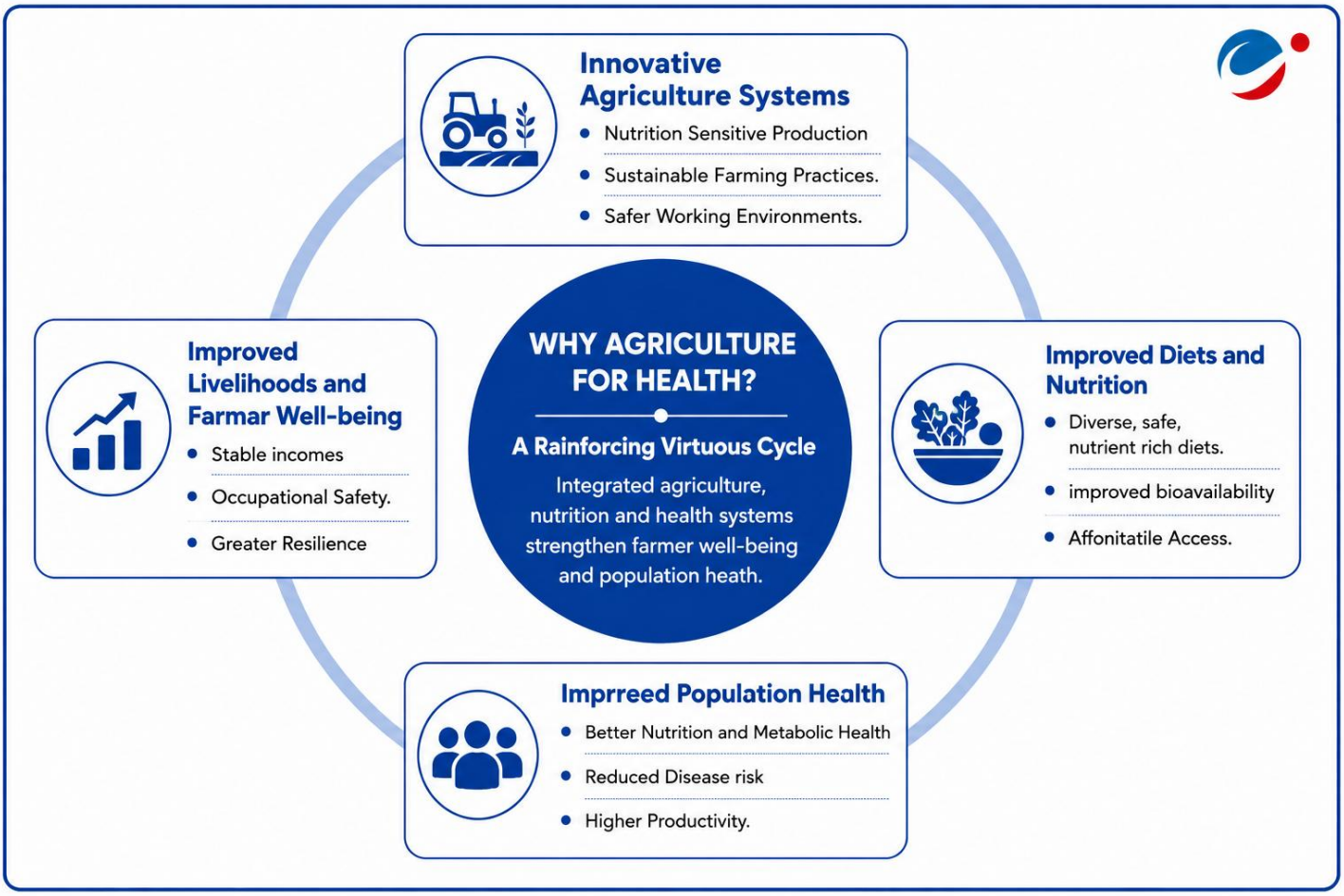
Read our previous coverage on Role of Institutions in Climate Negotiations

- **Significance**
  - **Proactive, Preventive, and Holistic approach to Healthcare** as against reactive and curative model.
  - **Address Dual burden** of **undernutrition and overnutrition rising non-communicable diseases** like diabetes, hypertension and cancer, etc.
  - **"Whole of government" and "Whole of systems"** approach integrating science, policy making and implementation.



5.9.2. MULTILATERALISM IN CLIMATE ACTION

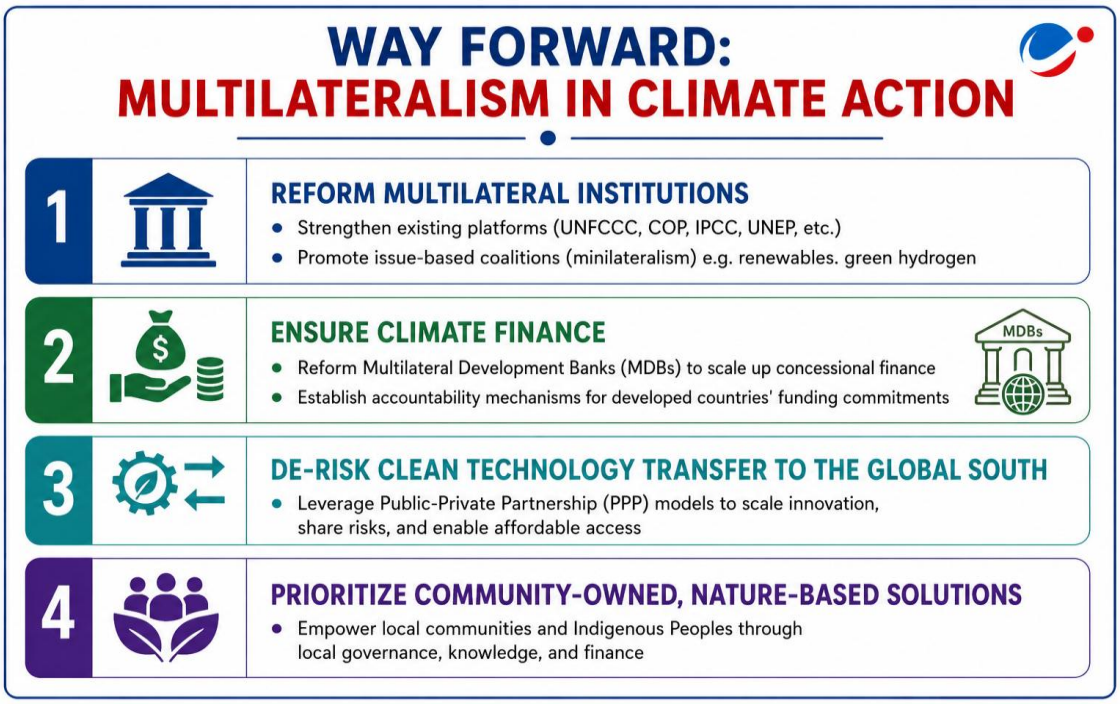
The 17th Petersberg Climate Dialogue (PCD) sought to reaffirm commitment to multilateral climate action amid rising geopolitical tensions.

- The PCD, an informal multilateral annual meeting on climate issues initiated by Germany in 2010, was the first major climate ministerial of 2026 ahead of **COP31** of UNFCCC.

Role of Multilateralism in Climate Action

- **Climate as a Global Public Good**: **Multilateralism** is a foundational response to climate change, a **transboundary threat** which transcends national capacities due to its dispersed costs and benefits.
- **Collective Governance:** Establishes a **rule-based order** for sharing global responsibilities, preventing unilateralism and ensuring **coordinated climate action**. E.g. NDCs
- **Negotiation Platforms**: International frameworks like the **UNFCCC, UNCBD, and UNCCD** facilitate the development of adaptation and mitigation strategies.
- **Upholding Climate Justice:** Protects **distributive equity** by institutionalizing the principle of **Common But Differentiated Responsibilities (CBDR)**, acknowledging varying national capacities and historical emissions.

- **Mobilizing Financial Mechanisms:** E.g. through institutions like the **Global Environment Facility (GEF)** and **Green Climate Fund (GCF)**.



Challenges

- **Decision-Making Paralysis:** E.g. Consensus-based model of UNFCCC
- **Financial Constraints:** Developed countries have **failed to mobilize** the promised **$100 billion annually.**
- **Geopolitical Fragmentation:** Rising unilateralism undermines the stability and continuity of international climate law. **E.g. US withdrawal** from key climate bodies.
- **Others:** Asymmetric Agenda Setting favouring developed nations, Technology Protectionism (restricted tech transfer) etc.

5.9.3.CONFERENCE ON TRANSITIONING AWAY FROM FOSSIL FUELS

Colombia and Netherlands are hosting First **Conference on Transitioning Away from Fossil Fuels** in **Santa Marta, Colombia.**

About the Conference

- Officially announced in **2025 during COP30** (UNFCCC) as sustained political platform to deliver **implementation-driven action towards** an orderly phase-out of fossil fuels.
- It is **not an negotiating body nor constitute part of any formal negotiation.**
- It does **not intend to replace United Nations Framework Convention on Climate Change (UNFCCC).**

Key Highlights of the Conference

- Launched the **Science Panel for the Global Energy Transition (SPGET).**
  - Help develop country- and sector-level milestones aligned with returning **global warming to 1.5 degrees Celsius (°C)** by end of century.

5.9.4. METHANE ALERT AND RESPONSE SYSTEM (MARS)

MARS will now **cover coal mines and waste facilities.**

- Until now, MARS focused on **oil and gas facilities** in countries that are part of **UNEP's Oil and Gas Methane Partnership 2.0.**
- It has also identified **Kanjurmarg landfill, Mumbai** among the **world's top 3 methane emitting sites.**

About MARS

- It is **first public global satellite detection** and notification system providing data on **very large methane emissions (super-emitters)** around the world.

- **Nodal Agency: United Nations Environment Programme's International Methane Emissions Observatory.**
- **Launched at:** COP27 climate summit, Sharm el-Sheikh, Egypt (2022).
- Assists implementation of **Global Methane Pledge,** which aims to **cut global methane** emissions by at **least 30% from 2020 levels by 2030.**

5.9.5. STATE AND TRENDS OF CARBON PRICING 2026

India emerged as a major global carbon market with the launch of its Carbon Credit Trading Scheme according to a new World Bank report.

Key Findings from "State and Trends of Carbon Pricing 2026"

- **Global Coverage:** Carbon pricing policies cover 29% of global GHG and may reach nearly one-third of global emissions by 2030.
- **Revenue Generation:** Carbon taxes and Emission trading system (ETS) generated over $107 billion in 2025.

India's Carbon Market Ecosystem

- **Carbon Credit Trading Scheme (CCTS):** Launched in 2026 as a GHG emission intensity-based trading system for hard-to-abate sectors. Industries exceeding targets earn tradable Carbon Credit Certificates.
- **Global Standing:** India's ETS is among world's largest after China, EU and South Korea.

5.9.6. DECENTRALISED BIOENERGY SYSTEMS

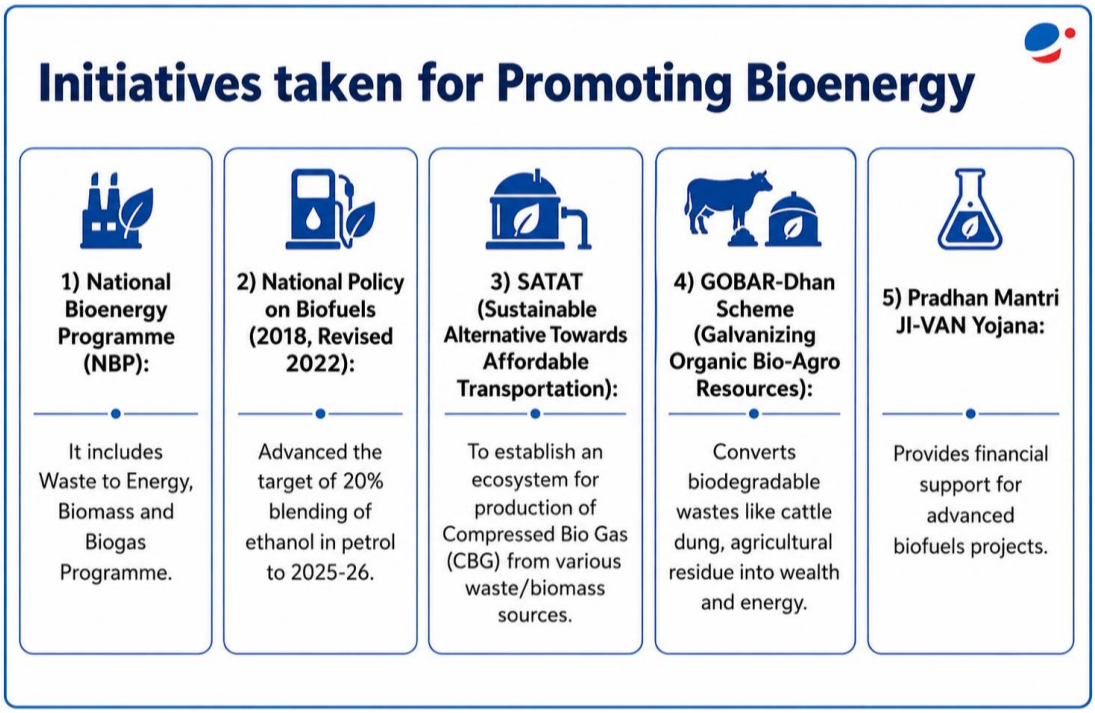
Decentralised bioenergy systems present a solution for the uncertain global energy supply chains and rising fuel prices in India.

About Decentralised Bioenergy Systems

- It refers to the local production and consumption of heat, electricity, or biogas from organic waste and crop residues.
- **Key Technologies involved:**
  - **Biomass Gasification:** Converts dry agricultural residues (husk, stalks) into combustible producer gas to run small engines or provide industrial heat.
  - **Biogas & Anaerobic Digesters:** Converts wet waste (food scraps, animal manure) into biogas for cooking and electricity.

Significance

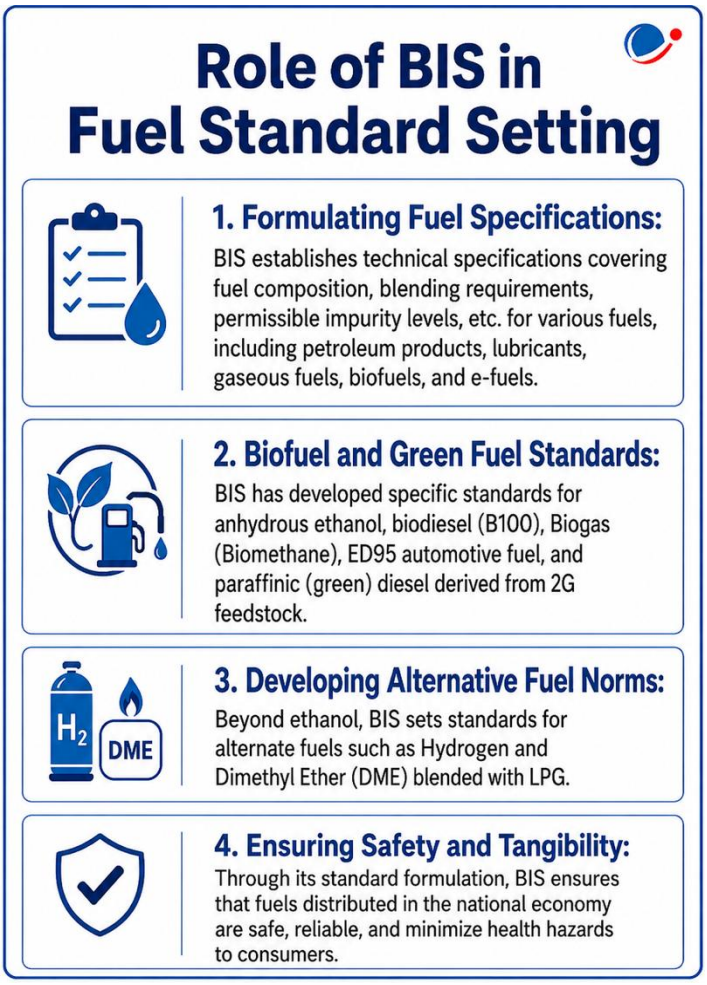
- **Waste Management:** Turns municipal solid waste and farm residues into valuable resources.
- **Energy Security:** Provides off-grid and micro-grid solutions to remote or underdeveloped regions.
- **Economic Empowerment:** Drives local job creation and supports small-scale farming and MSME operations.



5.9.7. STANDARDS FOR BLENDED FUELS UP TO E30

Recently, the **Bureau of Indian Standards (BIS)** published two major fuel standards:

- **IS 19850 : 2026 (for Ethanol Blended Fuels):** This standard outlines the specifications for **E22, E25, E27, and E30 fuels**, which are admixtures of completely free-of-water (anhydrous) ethanol and motor gasoline.
  - **E22, E25, E27 and E30 fuels** are higher **Ethanol-Petrol blends at 22%, 25%, 27% and 30%, respectively**.
  - **Ethanol Blending** is a process of **mixing ethanol with petrol.** E.g. E20 (20% Ethanol in petrol).
  - **Current status:** India has **achieved 20% Ethanol Blended Petrol (EBP) target** set under the **National Policy on Biofuels (2018)** and aims to move towards **30% blending by 2030.**
- **IS 18698: 2026 (for DME Blended LPG):** This standard replaces the older 2024 standard for **Dimethyl Ether (DME) blended Liquefied Petroleum Gas (LPG)**.
  - **DME is a clean-burning synthetic fuel** that behaves almost exactly like LPG**.**
  - **2 production pathways:**
    - > **Indirect route** (syngas to methanol to DME) and
    - > **Direct route** (syngas to DME).
  - **China accounts for nearly 90 % of global DME** production capacity.



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Read our previous coverage on Ethanol Blending

5.9.8. INDIA'S FIRST GEOTHERMAL POWER PLANT

Ladakh to host India's first geothermal power plant.

- Ladakh's Lt. Governor approved a five-year extension to MoU with **Oil and Natural Gas Corporation (ONGC)** to set up this plant at an altitude of **14, 000 feet** in **Puga Valley.**
- Under the revised MoU, ONGC will establish a **1-MWe pilot geothermal power plant** and prepare a **detailed project report (DPR**) for large-scale commercial exploitation of geothermal resources in Ladakh.

About Geothermal Energy

- **Meaning:** It harnesses **heat stored within Earth's crust**.
  - Geothermal system consists of **multiple component**s including **production and reinjection** (wells, pumps), **transport** (pipelines), **distribution (**heat exchangers) and **end-use application.**
- **Sources**
  - **High-enthalpy resources: Volcanic regions, geysers and hot springs** primarily for electricity generation.

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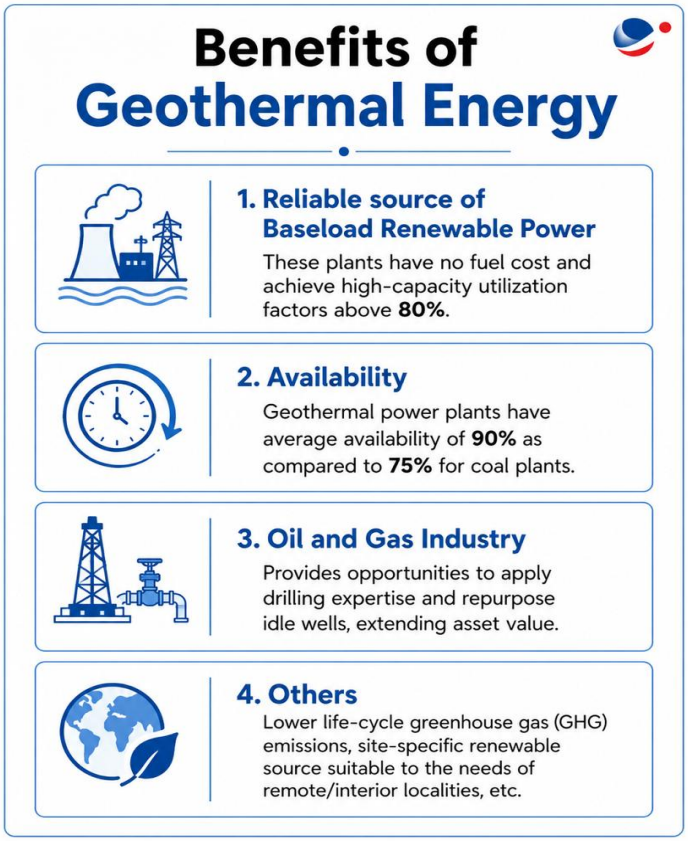
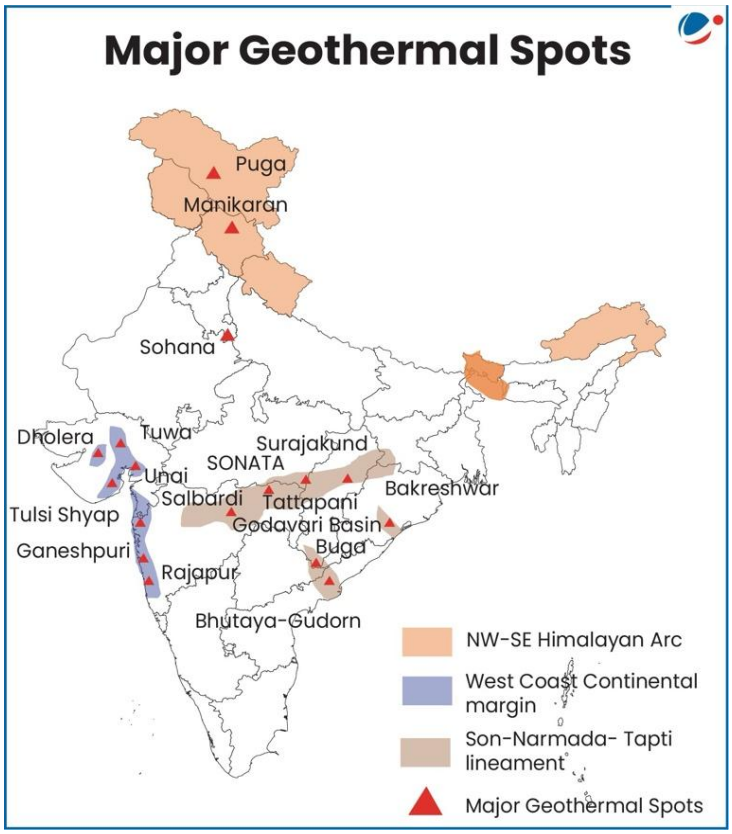
Read our previous coverage on Geothermal Energy

- **Low- to medium-enthalpy resources:** Like hot rocks and shallow ground layers, better suited for **direct-use applications** (e.g. heating and cooling, agri-food, aquaculture), etc.

- **Potential In India**
  - Geological Survey of India (GSI) **identified 381 hot springs** with surface temperatures ranging from 35°C to 89°C.
    - It has also **identified 10 geothermal provinces in India** including Himalayan Geothermal Province; Andaman Nicobar Islands, etc.
  - A potential of **about 10,600 MW of geothermal power** has been estimated with **Puga and Chumathang** areas appearing to be most promising.
- **National Policy on Geothermal Energy (2025):** Establishing geothermal energy as major pillars of India's renewable energy landscape, contributing to **2070 Net Zero Goal, and energy security**.





5.9.9. GLOBAL FOREST GOALS (GFG) REPORT 2026 RELEASED

The report is prepared by the **UN Department of Economic and Social Affairs** and the **UN Forum on Forests** (**UNFF)** Secretariat.

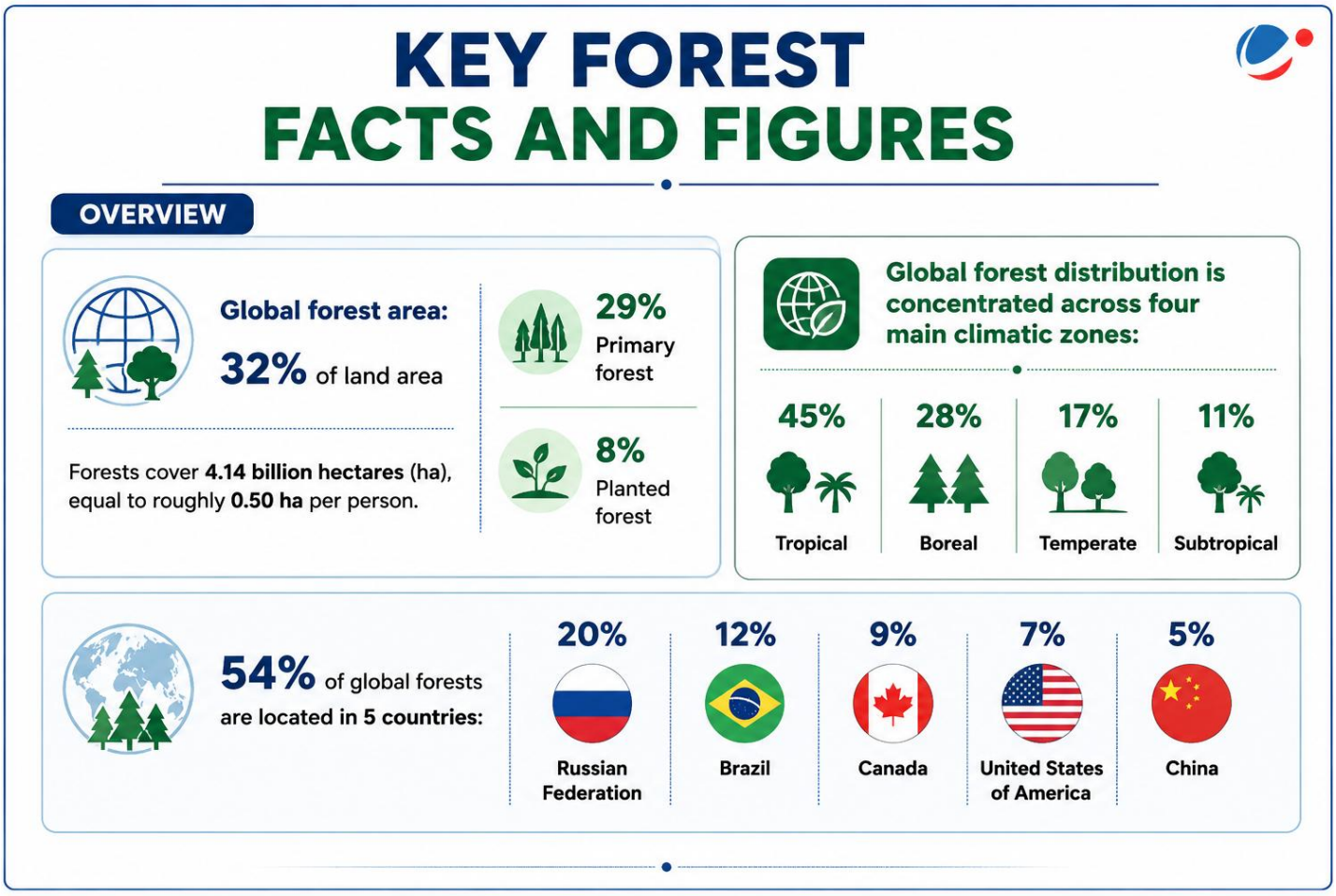
- It assessed progress towards the 6 GFG set for 2030 and the associated targets of the **United Nations Strategic Plan for Forests** (2017–2030), launched during the 21st UNFF session.
  - **UNFF** (established in 2000), an intergovernmental body **composed of all UN members** and members of specialised agencies, **aims to promote the management, conservation,** and **sustainable development** of all types of forests.

Key Highlights of Report

- **Reduction in Forest Area:** Shrank by over 40 million hectares between 2015 and 2025.
- **Major Drivers:** Agricultural expansion and surging demand for fuelwood and charcoal.
- **Barriers to Sustainable Forest Management**: Weak governance, insecure land tenure, illegal trade, and limited institutional capacity.

- **Degradation Intensification:** Due to climate-linked pressures such as droughts, wildfires, heatwaves, pests, and diseases.
- **Finance Gap:** Despite reaching a **record US$84 billion in 2023**, finance remains far below the estimated **US$300 billion needed annually by 2030**.

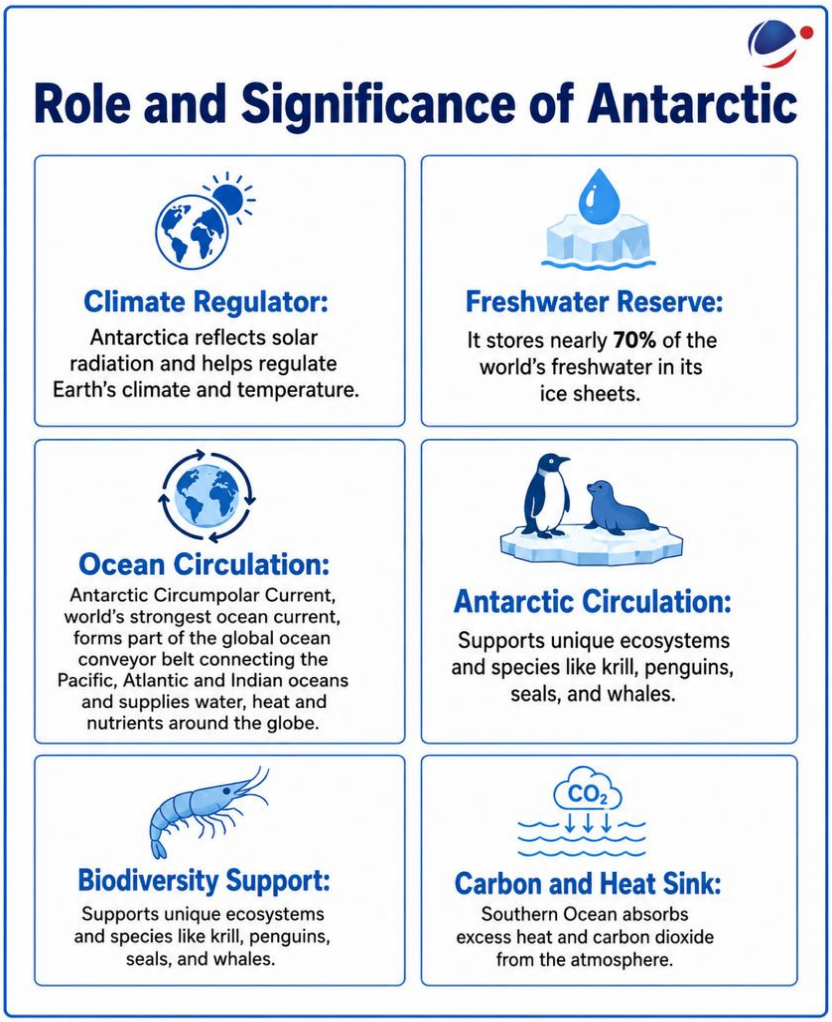
Recommendations: The report emphasizes stronger coordination, higher forest financing, deforestation-free supply chains, and cleaner energy access to reduce dependence on fuelwood and charcoal.



5.9.10. DECLINE OF ANTARCTICA'S SEA ICE

Overall, Antarctica lost approximately 12,800 sq km of grounded ice between 1996 and 2025 and researchers have identified that destabilisation of Southern Ocean surrounding Antarctica as a factor for sudden decline since 2015.

- Destabilisation happened due to a combination of **deep ocean heat, powerful winds and a self-reinforcing feedback loop**.
  - **Deep Ocean Heat:** Southern Ocean was strongly layered – with cold fresh water sitting on top of warmer, saltier water below – stopping the heat from reaching surface. That barrier weakened by 2015.
  - **Powerful Winds:** Stronger Westerly winds (strengthened due to ozone hole and GHG emissions) acted like a pump, gradually drawing warm, salty deep water closer to the surface.
  - **Reinforcing Feedback loop:** The then rising deep water brings heat and salt to the surface.
    - The heat melts sea ice, while the extra salt makes the surface waters denser and easier to mix with warmer waters below. That allows even more heat to rise upwards, making it harder for new sea ice to form, and so on.



5.9.11. HEAT DOME

Heat dome over Europe scorches **UK, France, Spain.**

About Heat Dome

- It is a **high-pressure atmospheric system** that **traps warm air** near the Earth's surface for prolonged periods, leading to extreme heat conditions.
  - Because hot air expands, it creates a bulging dome that traps heat within it.
- **Mechanism: Descending air gets compressed and heated**, while high pressure prevents cloud formation and traps hot air near the surface.
- **Impacts:** Leads to **heatwaves, droughts, wildfires, and severe health risks.**

5.9.12. PARAMETRIC INSURANCE

As India faces intensifying heatwaves due to climate change, parametric insurance is emerging as a tool for automatic financial relief during extreme heat events.

About Parametric Insurance

- Parametric insurance is a **non-traditional model that pays out a pre-agreed, fixed sum when a specific, measurable event (e.g., temperature, rainfall, wind speed) occurs**, rather than compensating for actual physical damages.

- **Significance:** Ensures **faster financial relief during disasters** like heatwaves, floods and droughts; useful for climate-risk management and vulnerable communities.

5.9.13. CHEETAH

Two cheetahs brought from **Botswana** were released in the **Kuno National Park, Madhya Pradesh**.

About Cheetah

- **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**:
  - African Cheetah (IUCN Status- Vulnerable).
  - Asiatic Cheetah (IUCN Status- Critically Endangered).
- **Habitat**: **Asia (**only in arid regions of eastern Iran and India (After Reintroduction); **Africa (**grasslands, scrublands and open forests E.g. Botswana, Namibia and South Africa)

About Project Cheetah (2022)

- **Objective**: To translocate African cheetahs to India.
- **Implementing Agency**: National Tiger Conservation Authority (NTCA).
- World's first intercontinental large wild carnivore translocation initiative.

5.9.14. INDIAN SOFT-SHELL TURTLE

India's first satellite-tagged Indian soft-shell turtle has been released in Kaziranga National Park.

About Indian Soft-shell Turtle

- It is also known as the **Ganges Softshell turtle**.
- **Characteristics**:
  - Found in freshwater habitats
  - Distinguished by its prominent, tube-like snout and flattened shell.
  - Differentiated from other riverine turtles by its distinct arrowhead-shaped markings on the top of the head.
- **Distribution and Range**: Found throughout the northern plains of the Indian Subcontinent, in the Indus, Ganga, Narmada, Mahanadi basins and Brahmaputra basin.
  - It is also found in countries like Bangladesh, Nepal, and Pakistan
- **Conservation Status**:
  - **WPA, 1972**: Schedule I
  - **CITES**: Appendix I
  - **IUCN**: Endangered

5.9.15. PANGOLINS

Scientists are using 'DNA maps' to expose pangolin trafficking hubs.

Pangolins are one of the world's most trafficked mammals.

About Pangolin

- **Characteristics:**
  - Only mammals **completely covered** with protective keratin scales.
  - **Solitary, nocturnal, toothless** mammals with long sticky tongues.
  - Also called **"scaly anteaters"** due to their diet of ants, termites, and larvae.
  - When threatened, they **roll into a tight ball** to protect their vulnerable underbellies from predators
- Of the 8 species found globally, **2 species occur in India- Indian Pangolin** (IUCN status: Endangered) and **Chinese Pangolin** (IUCN status: Critically Endangered)
  - Both are protected under **Schedule I** of the Wildlife Protection Act, 1972 and listed under **Appendix I** CITES.

- **Habitat:**
  - **Indian Pangolin:** Found across India south of the Himalayas, except most of the North-East**.**
  - **Chinese Pangolin:** Found in Assam and eastern Himalayas.

5.9.16. PROSOPIS JULIFLORA

Prosopis juliflora**,** to be used as feedstock for India's **first green methanol production plant**, designed to fuel ocean-going ships.

About Prosopis juliflora

- **Leguminous tree** highly **resistant to drought and salinity,** recognized as one of the **world's most dominant invasive species.**
- Native to **Mexico,** first introduced by British in 1920s to 'green' Delhi and by Gujarat forest department in 1961.
- **Ecological Impacts:**
  - It is a **Phreatophyte,** a deep-rooted plant that absorbs water from the **phreatic zone below water table**, exacerbating **hydrological drought**.
  - Reduces **native plant diversity,** posing a serious threat to **Phyto diversity.**
- **IUCN Status:** Least Concern.

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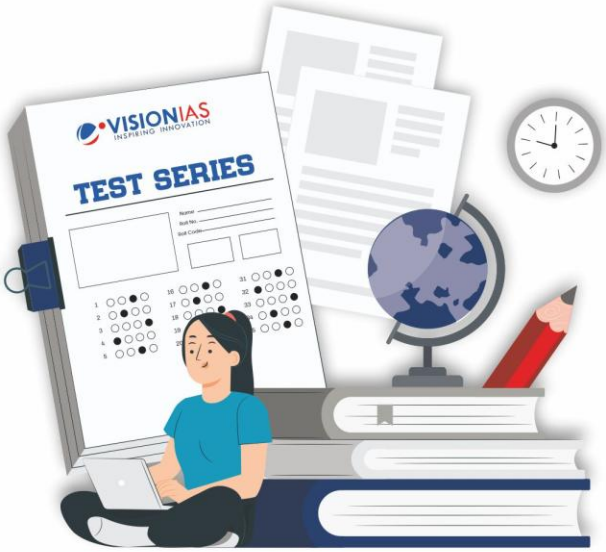

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6. SOCIAL ISSUES

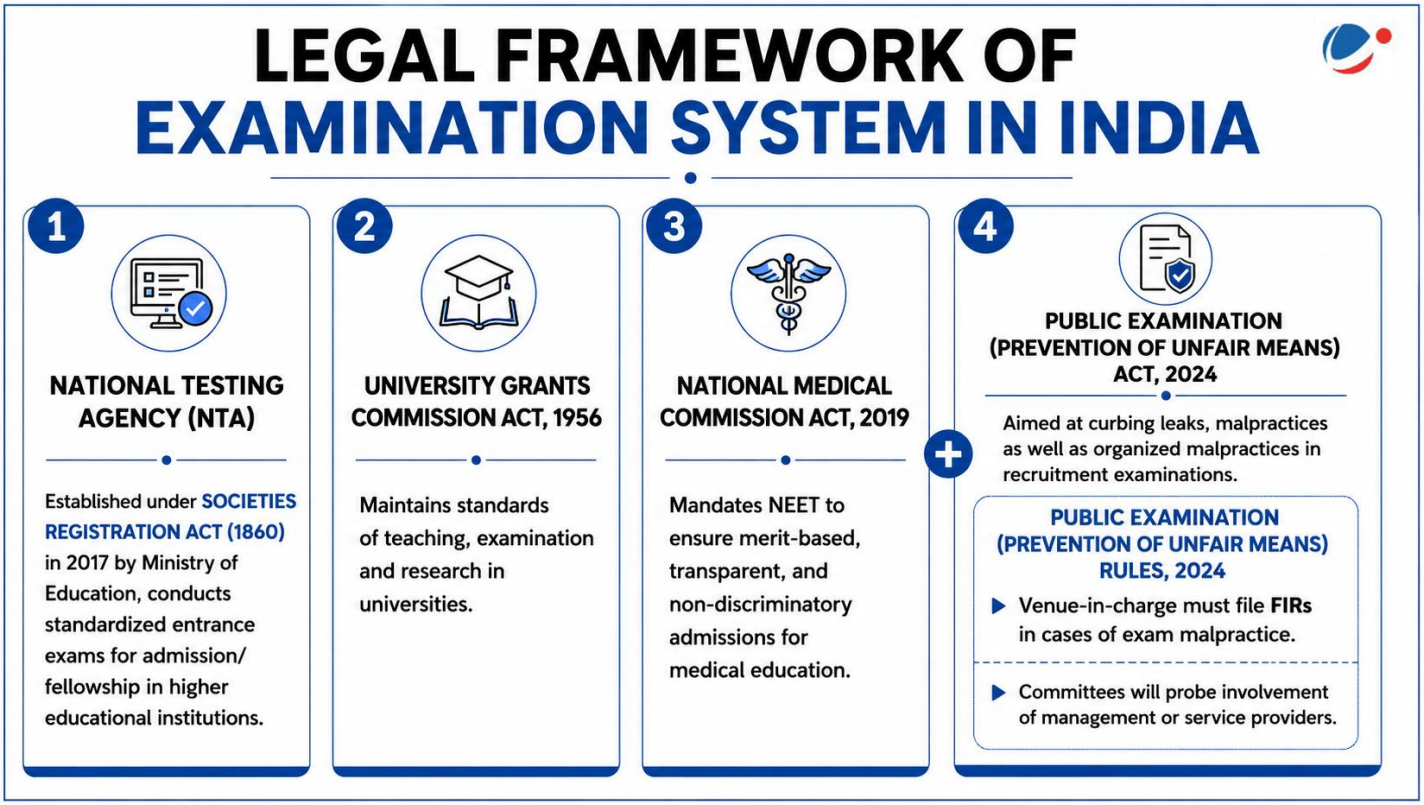
6.1. EXAMINATION SYSTEM OF INDIA

Why in the news?

The cancellation of NEET (UG) 2026 by the National Testing Agency (NTA) amid alleged paper leaks reflects larger concern of failure of Exam Ecosystem in India.

About Examination System in India

- **School Examinations**: Conducted by boards such as Central Board of Secondary Education (CBSE), Council for the Indian School Certificate Examinations (CISCE), and State Boards.
- **Higher Education Entrance Examinations**: Managed by NTA. Major exams include NEET-UG; JEE Main; Common University Entrance Test (CUET).
- **Recruitment Examinations**: Conducted by agencies such as UPSC, SSC, Railway Recruitment Boards (RRB), State Public Service Commissions.



Reasons for failure of India's Examination Ecosystem

- **Societal Pressure:** Expectations to secure prestigious jobs and admissions, coupled with fear of failure and the **huge supply-demand gap in educational institutions/government jobs**.
- **Limited oversight:** Weak oversight, **administrative loopholes, existence of paper leak syndicates**, instances of collusion among officials or service providers creates an ecosystem facilitating paper leakages. E.g. SSC CGL 2017 Exam leak.
  - Further, One Nation, One Exam" approach ignores regional and educational diversity creating excessive pressure on a single test.
- **Policy instability:** Frequent changes in exam patterns or eligibility criteria which creates confusion and stress for students. E.g., Introduction and subsequent removal of upper age limits for NEET.

- **Inadequate Deterrence:** Delayed investigations, **low conviction rates, and inconsistent penalties** reduce the perceived risks associated with examination malpractice.
- **Technological Misuse:** Advances in digital technology facilitate rapid transmission/ sale of leaked question papers through encrypted messaging platforms.
- **Decline in Ethical Values:** Insufficient emphasis on ethical education and integrity, combined with peer influence can normalize cheating, and use of unfair means like leaked papers to succeed.

Impact of failure of Examination System of India

- **Erosion of Meritocracy:** Cheating and paper leaks undermine fundamental principle of merit-based selection by providing an **unfair advantage to certain candidates**, compromising the credibility of examinations.
- **Loss of Public Trust:** Repeated instances of examination malpractice weaken public confidence in recruitment agencies, educational institutions, and government bodies, **eroding faith in institutions to ensure fairness and transparency.**
  - E.g. Vyapam scam (Madhya Pradesh) undermines trust in examinations.
- **Impact on Governance:** Cancellation of exams often lead to prolonged litigation, investigations, and re-examinations, delaying filling of vacancies, adversely impacting administrative efficiency.
- **Psychological Impact on Aspirants:** Cancellation/re-conduction of examinations due to leaks can cause financial stress, create career uncertainty for genuine aspirants.
- **Administrative and Fiscal Burden:** Conducting fresh examinations, strengthening security arrangements, and undertaking investigations require substantial public resources, **imposing additional financial and administrative costs on the state.**
- **Threat to Constitutional and Ethical Values:** Examination malpractice violates the principles of equality, fairness, and equal opportunity enshrined under Articles 14 and 16 of the Constitution.

Way ahead

- **Recommendations of K. Radhakrishnan Committee, 2024**
  - **NTA Restructuring:** To conduct higher education entrance exams only.
    - **Establish 10 specialized verticals** covering technology, operations, products, test security, and surveillance.
    - **Create an empowered governing body** with sub-committees for test audit, ethics and transparency, and stakeholder relations.
    - **Director-General (head of agency)** should be dedicated leadership position, **free from external influence,** to ensure smooth and continuous operation.
  - **Adopt Hybrid process**: For computer-assisted secure testing, **combining both computer-based testing (CBT) and paper-and-pencil testing (PPT) methods** to reduce potential security risks during PPT printing, storage, and transportation phases.
  - **Testing Centres: Establish at least 1,000 secure testing centres**, prioritising reputable government institutions.
    - Collaborate with Kendriya Vidyalyas, Navodaya Vidyalayas to create nationwide **network of 400–500 centres** which **accommodate 2–2.5 lakh candidates** in a single CBT session.
  - **Multi-session** (when participant numbers exceed 2 lakh) and **multi-stage testing:** Clearly define, document, and communicate normalization and scoring mechanisms to ensure fairness despite variations in question paper difficulty.
  - **Mobile testing Centres: T**o help **overcome barriers to accessing remote and hard-to-reach locations**, including Northeast, North Himalayan states, and Andaman and Nicobar Islands.
  - **Establish ties with state/district authorities:** Use District Magistrates- led committees and state **government** coordination to conduct **high-stakes examinations,** and prevent malpractice.
  - **Introduce DigiExam** on lines of DigiYatra using **Aadhaar based biometrics authentication** and AI-based data analytics to prevent impersonation.

6.2. SCHOOL EDUCATION IN INDIA

Why in news?

NITI Aayog releases Report on **School Education System in India** providing a decade-long analysis (2014-2024) of School Education across key parameters e.g. access, enrolment, infrastructure, equity, inclusion, learning outcomes

Key Achievements highlighted by the Survey

- **Near-Universal Access:** Enrolment at elementary stage (Classes 1-8) is now near universal, with Gross Enrolment Ratio (GER) at primary (1-5) and upper primary (6-8) standing at 90.9% and 90.3% (2024-25)
  - GER at primary level was higher in 2014 (106.85%) mostly due to inclusion of over and under-age students
- **Basic amenities**: Functional electricity in schools rose from ~56% to 91.9%. Schools with drinking water rose to 99%. Functional toilets rose to 92.4% (boys) and 94% (girls) boosting hygiene, dignity and retention.
- **Inclusion**: **Gender Parity Index** (female: male GER) remained > 1 for all states for a decade, showing girls' GER matches or exceeds that of boys. For special children, ramps availability rose to 79.1% of schools from ~60%.
- **Digital Momentum**: Internet connectivity in schools increased 8x from 2014-15 to 63.5% in 2024-25. Computer availability rose steadily to **64.7%** showing growing emphasis on ICT integration in classrooms
- **Stabilized Foundational Retention**: Despite fluctuations over the decade, the primary-level dropout rate fell sharply from 4.34% in 2014–15 to just 0.3% in 2024–25.

KEY INITIATIVES BY GOVERNMENT

Building an Inclusive, Equitable & Future-Ready Education System

No.	Initiative	Details
1.	NEP 2020	Emphasizes universal Foundational Literacy and Numeracy (FLN) by Grade 3 by **2025**, competency-based learning and assessment, critical thinking and integration of digital education. Universal access to Early Childhood Education for all aged 3–6 years by **2030**. Education in mother tongue at least till **Grade 5**.
2.	Samagra Shiksha (2018)	Unified Samagra Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan and Teacher Education—to treat school education as a continuous whole from pre-school to senior secondary levels.
3.	NIPUN Bharat Mission (2021)	Aimed at ensuring every child achieves Foundational Literacy and Numeracy (FLN) by the end of **Grade 3**.
4.	PM SHRI Schools	A centrally sponsored scheme to upgrade over **14,500** schools as exemplar institutions that showcase NEP 2020 components.
5.	PARAKH	A national assessment centre established to guide competency-based evaluation, covering government, government-aided, private recognised, and central government schools; assesses **Grades 3, 6, and 9.**
6.	NISHTHA	Teacher training programme to build capacity of school heads and teachers as instructional leaders.
7.	SWAYAM (MoE)	Providing free online courses from **Class 9** up to post-graduation.
8.	PM e-VIDYA (MoE)	Gives free DTH TV channels for grades **1–12** and available in multiple Indian languages.
9.	Eklavya Model Residential Schools	Implemented by Ministry of Tribal Affairs, provides quality residential education to **Scheduled Tribe (ST)** children.

Key Challenges Highlighted by the Report

- **Systemic Challenges**
  - **Structural Fragmentation:** India's system like a pyramid, with falling number of schools from primary (49%) to upper primary to secondary and upper secondary (11.2%) limiting availability of education at different stages
    - **Only ~5%** schools have continuous Grade 1–12 education, forcing frequent changes, raising dropout risks
  - **Policy Gaps**: While policy attention has largely focused on the 6–14 age group, an obligation under the RTE Act, the problem is more pronounced among 15-17 years, that is, secondary and higher secondary levels.

- **Infrastructure Gaps:**
  - **Basic gaps** Despite gains, there is inadequate menstrual hygiene facilities, 1 in 15 schools lack functional girls' toilets.
  - **Technological gaps**: Also, 1.19 lakh schools lack access to functional electricity, 1/3d lack internet connectivity, ~50% secondary public schools do not have science labs limiting practical learning.
- **Teacher Issues**: 7% schools operate with 1 teacher leading to teaching multi-grade classroom in same space, overburdening e.g. they lose ~ 14% of teaching days to administrative duties e.g. election work
  - Evidence from the SATH-E States shows that many teachers themselves score below 60-70% in subject papers of the grades they teach, indicating weak foundational knowledge
- **Equity Gaps:** 33% of SC and ST students demonstrated math proficiency vs. 48% general students. Lack of barrier-free classrooms, tactile paths etc. for special children
  - While elementary education is free, higher education involves high expenditure forcing dropouts e.g. 25% esp. girls were out of school due to unpaid household works (PLFS 2020-21)
- **Privatization Shift**: Government school's enrolment fell to 49.25%, while private unaided schools have increased their share to 38.8% due their better perception.
- **Secondary Level Attrition**: Despite high enrolment and retention at primary stage, GER declines to 78.7% at secondary and 58.4% at higher secondary level, while secondary dropout rate remains high at 11.5%.

- **Academic challenges**
  - **Lack of application of Skills**: While students can perform straightforward tasks, they struggle with application. E.g., < 55% of Grade 3 students can handle basic money transactions or spatial measurement (PARAKH 2024)
  - **Lack of Foundational skills** due to overemphasis on finishing syllabus, rote learning and gap between curriculum and lived experience, outdated teaching practices (poor AI integration) e.g. < 30% Grade 6 students showed competency in fractions, etc.
  - **Student wellbeing:** e.g. Poor focus on mental health, community engagement, fitness, life skills, creativity etc.
  - **Early education**: face fragmented governance e.g. Anganwadi under Ministry of women and Balvatikas under education ministry, overburdened and untrained teachers, learning gaps, poor integration with formal schooling.
  - **Vocational education:** occupy a peripheral role due to low focus, poor supporting infrastructure like special equipment, less skilled trainers, poor perception, mechanism for certification and market linkages
    - This could help achieve the target of minimum 50% vocational learners By 2025 (NEP 2020)

Way Forward

- **Structural Continuity:** Transition from a pyramidal to a **cylindrical structure** by expanding composite schools (Grades 1–12) to reduce dropouts e.g. **Rajasthan's Adarsh Vidyalayas** (1 to 12) at the Gram Panchayat level
- **Strengthen Infrastructure:** using infrastructure benchmark and audits, district task force on school quality with participation of civil society, digitisation etc. e.g. **Gyankunj**, a school digitalisation initiative of Gujrat.
- **Boost Teacher capacity** by reducing administrative overload, filling vacancies, focusing on pre-service teacher education etc.
- **Promote Equity:** Targeted support should for backward Groups, gender-sensitive infrastructure, ensuring safe travel, flexible re-entry pathways for migrant children, barrier-free infrastructure for disabled children
- **Competency based and foundational learning E.g. Kalika Chetarike** initiative (Karnataka) -Shifts learning from textbook-based syllabi to clearly defined competencies
- **Student Wellbeing:** Regular health check-ups, integration of sports and yoga, Mental health support e.g**. Anand Sabha, Madhya Pradesh**, giving sessions of emotional regulation, family relationships, and social harmony.

Conclusion

India has made remarkable strides in expanding **access, equity, and infrastructure** in school education, but the next phase of reforms must focus on **learning quality, foundational competencies, teacher capacity, and equitable secondary education**. A shift from **schooling to meaningful learning**, guided by **NEP 2020**, will be crucial to building a future-ready, inclusive, and globally competitive education system.

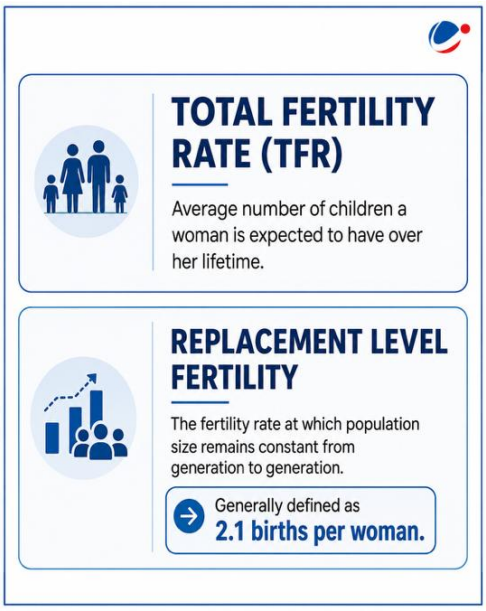
6.3. SAMPLE REGISTRATION SYSTEM (SRS) STATISTICAL REPORT 2024.

Why in the news?

The Office of the Registrar General of India (ORGI) has released the **Sample Registration System (SRS) Statistical Report 2024**.

Key Findings of the Report

- **Fertility Trends:**
  - **Sub-Replacement Fertility:** Total Fertility Rate (TFR) remained **at 1.9**, staying below the replacement level (2.1) for the **fifth consecutive year.**
  - **Declining Birth Rate:** Crude Birth Rate (CBR) **declined to 18.3(2024)**.
    - **CBR:** (Number of live births during the year/ Mid-year population) X 1000.
  - **Education-Fertility Link:** Fertility levels decline significantly with higher educational attainment among women.
- **Mortality Trends:**
  - **Crude Death Rate (CDR):** CDR **6.4** in 2024; overall death rate remains higher than pre-pandemic levels.
  - **Infant Mortality:** Infant Mortality Rate (IMR) declined **to 24**. Kerala recorded the lowest IMR (8).
    - **IMR:** Number of infant deaths from birth to 1 year old per 1,000 live births.
  - **Under-Five Mortality:** Under-Five Mortality Rate (U5MR) stood **at 28**, reflecting enhanced child survival.
  - **Neonatal Mortality Burden:** Neonatal deaths accounted for **nearly 73%** of all infant deaths.
    - **Neonatal Mortality Rate (NMR):** Number of neonatal deaths that from birth to 29 days per 1,000 live births.
- **Demographic Transition:**
  - **Demographic Dividend: Working-age population** (15–59 years) increased to **66.4%** of the total population.
  - **Population Ageing:** The population aged **60 years and above reached 9.7%,** signalling an emerging ageing challenge.
  - **Marriage Trends:** Mean age at effective marriage for females **increased to 23.1 years**, while only **2.1% of females** married before the legal age of 18 years.
  - **Gender Indicators:**
    - **Sex Ratio at Birth (SRB):** Improved marginally to **918 females per 1,000 males**, though gender imbalance persists.
      - **Sex Ratio at Birth:** Number of females per 1000 males at birth.
  - **Health Indicators:**
    - **Institutional Deliveries: 95.4%** of deliveries received medical attention.
  - **External Causes of Death:**
    - Deaths due to road accidents rose to 3.2%, while suicides accounted for 2.8% of total deaths.



About the Sample Registration System (SRS)

- One of the world's largest **demographic sample surveys** and India's principal source of estimates on fertility, mortality, and other demographic indicators at the State and National levels, from 1971 onwards.
- **Conducted by:** Office of the Registrar General & Census Commissioner, India (ORGI), Ministry of Home Affairs.
- **Objective:** To provide reliable annual estimates of Birth Rate, Death Rate, Infant Mortality Rate (IMR), and other fertility and mortality indicators.

Implications

- **Advanced Demographic Transition:** Sustained below-replacement fertility indicates India is moving towards **a mature demographic stage** with slower population growth.

- **Demographic Dividend Opportunity:** Rising share of working-age population (66.4%) provides potential **for higher economic growth, productivity, and savings.**
- **Improved Child Health Outcomes:** Declining IMR and U5MR reflect progress in **maternal and child healthcare** services.
- **Better Healthcare Access:** High institutional delivery rates indicate improved access to healthcare and safer childbirth practices.
- **Social Development Gains:** Rising age at marriage and **lower incidence of child marriage** reflect improvements in female education and empowerment.

Concerns

- **Persistent Below-Replacement Fertility:** TFR remaining below replacement level may lead to long-term demographic imbalances and a shrinking workforce, **e.g., demographic winter witnessed in Japan and Italy.**
- **Persistent Regional Disparities:** Significant rural-urban and inter-state variations in health and demographic indicators highlight uneven progress in India's demographic transition.
- **Population Ageing:** Rising elderly population (60+) signals increasing demand for **geriatric healthcare**, pensions, and social security.
- **Gender Imbalance at Birth:** Persistent skew in sex ratio at birth reflects continuing **socio-cultural preference for male** children and gender discrimination.
- **High Neonatal Mortality Burden:** A significant share of infant deaths occurring during the neonatal period highlights **gaps in maternal and newborn healthcare services**.
- **Rising Road Accident and Suicide Deaths:** A growing share of deaths due to accidents and suicides highlights road safety and mental health challenges.

Conclusion

India's demographic landscape is witnessing a structural shift, making investments in health, skills, productivity, and social protection critical for sustaining long-term growth. As fertility declines and longevity rises, the focus must shift towards enhancing human capital and ensuring inclusive, resilient development across all age groups.

6.3.1. DEMOGRAPHIC TRANSITION: THEORY AND IMPLICATIONS ON INDIA

Andhra Pradesh has recently announced financial incentives for 3rd child and 4th child to transition Demographics.

- India's **replacement fertility rate is 2.1** while **South Indian states have 1.5 (**Below replacement level).
  - **Replacement Rate** refers to the **average number of children a woman needs to have to replace exactly herself and a partner** in a given population.

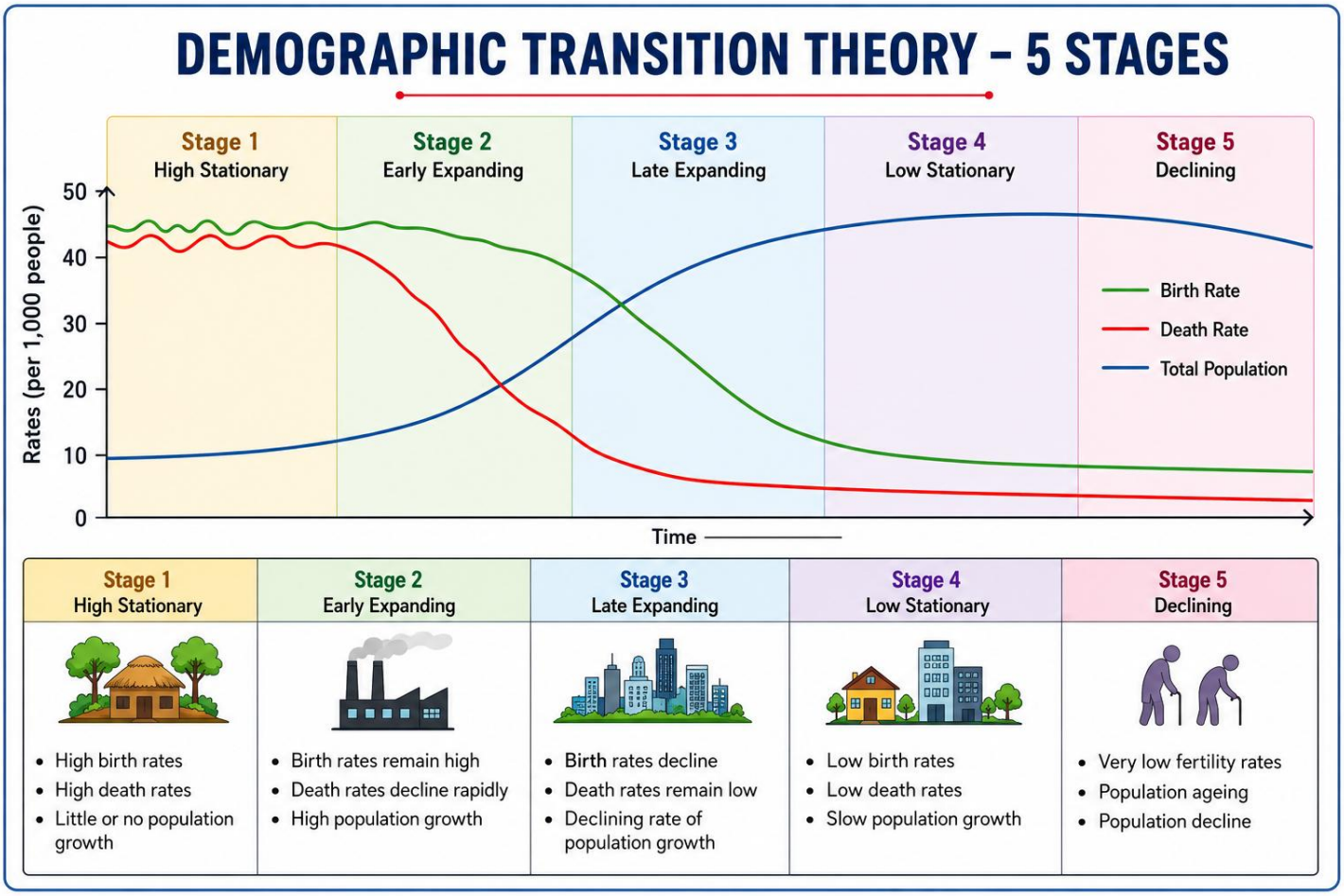
About Demographic Transition Theory (DTT)

- DTT **describes the transition from a stage of high fertility and mortality** to a stage of **low fertility and mortality.**
  - It explains how a country's population structure transforms as it develops economically.
  - DTT was **first coined** by **Warren S. Thompson (1929)** and later on by **Frank W. Notestein (1945).**

Digital Current Affairs
Read our previous coverage on India's declining Fertility rate

Implications of Demographic transition on India

- **Inter-State divergences:** States with a high share of young population (e.g., Bihar, Uttar Pradesh) have a wider window of opportunity.
- **Changing Dependency Ratio:** By 2050, one in five Indians will be aged 60 or above—347 million people, up from ~149 million.
- **Fiscal:** Ageing states may experience shrinking tax bases, rising pension and healthcare expenditure, and greater fiscal stress due to higher debt and interest burdens.
- **Political:** Delimitation and political representation with higher population states gaining greater parliamentary representation.



6.4. CARE ECONOMY

Why in News?

Economic Advisory Council to PM (EAC-PM) released a Working Paper on Care Economy.

More on the News

- It calls for paradigm shift, treating care as foundational social and economic public infrastructure rather than private household responsibility.

About Care Economy (Purple economy)

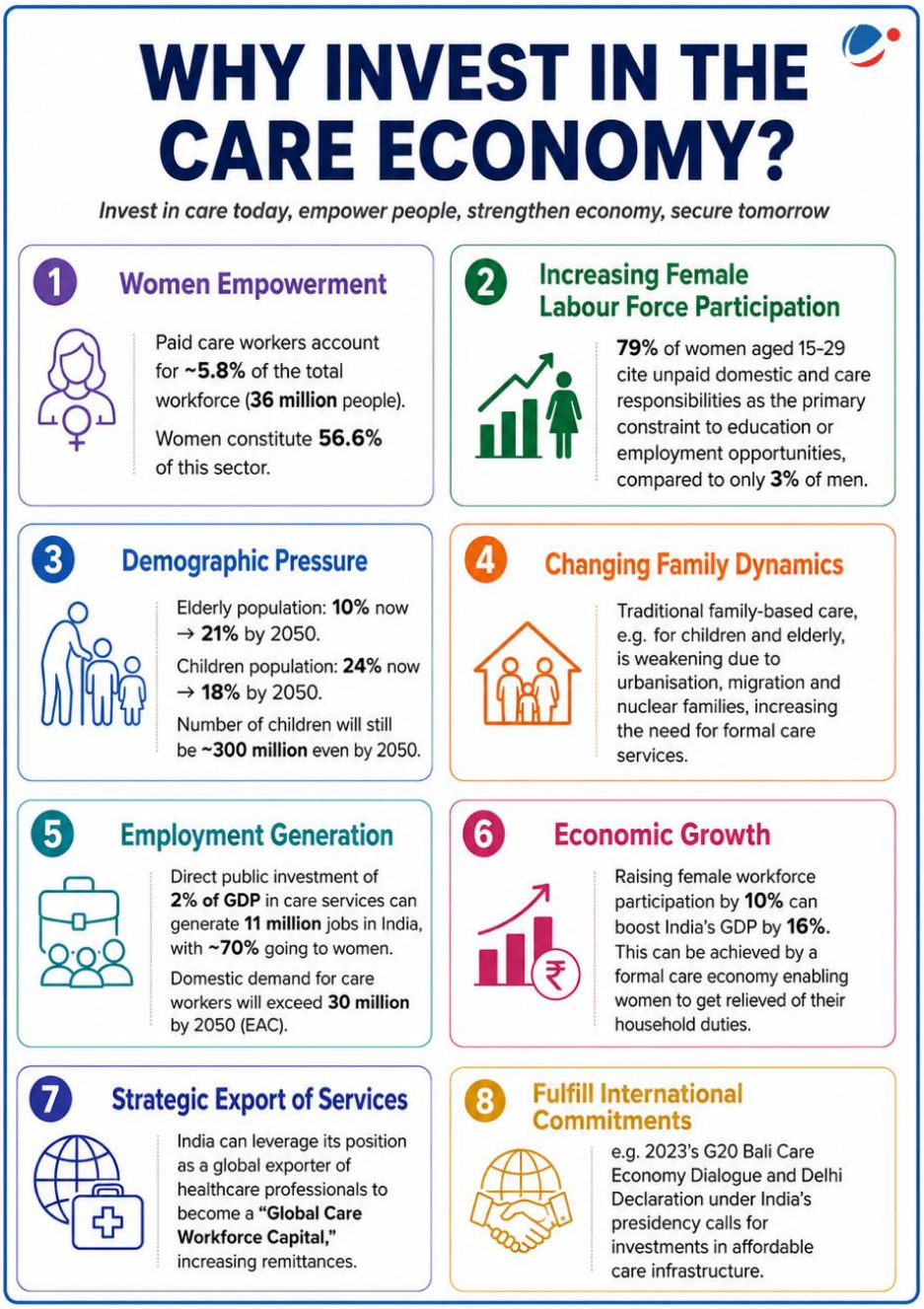
- It encompasses all activities whether paid and unpaid, direct and indirect that meet the physical, psychological, and emotional needs of children, the elderly, persons with disabilities, and the able-bodied
  - **UnPaid**: Nursing an ill partner, cooking, cleaning, child care, unpaid farm labour, eldercare etc. without monetary compensation (mostly done by women)
  - **Paid**: Childcare centres, eldercare institutions, domestic workers against a monthly wage etc. (men spend a little bit more than half (0.57) times **more time** than women in paid work.

Major Challenges

- **Systemic Invisibility:** Because care is often an "unremunerated act of love," it remains excluded from GDP calculations E.g. Unpaid domestic and care work by women, is valued at ~**15–17% of India's GDP**
- **Gender Disparity**: e.g. Women spend ~289 minutes daily on unpaid domestic work, against ~88 minutes by men impacting their education and employment (time poverty). -Time Use Survey 2024.
- **Policy issues:** Maternity-centric policies reinforce women as default caregivers and distort hiring incentives, interrupts career and cause wage gap **E.g. Maternity Benefits act 1961 vs No statutory paternity law**.

- no paternity leave in private sector and only 15 days to central government servants under Central Civil Services (Leave) Rules 1999 (vs 26 weeks for women in units with >10 employees)
- Absence of framing Child care or eldercare as employment-enabling infrastructure.

- **Lack of social security**: Frontline care workers like ASHAs and Anganwadis doesn't have fixed wage and lack social security, while domestic workers face total subjugation to employers due to absence of a dedicated law
- **Lack of dedicated funding**: India spends **less than 1%** of its GDP on care economy. This leads to poor public infrastructure and concentration of private unaffordable care services in urban areas
- **Fragmented Governance**: Care is treated as narrow welfare intervention under Ministry of Women and Child Development (MoWCD) rather a horizontal policy priority across finance, labor, and urban planning ministries
- **Human Resource**: e.g. In India there are only ~ 5 formal care workers per 100 persons aged 65 and above and caregiver-to-child ratio is 1:50 vs international observed ratios of 1:10-15.



Government's Initiatives for Care Economy

- **Atal Vayo Abhyuday Yojana:** umbrella scheme for elderly welfare that includes residential care facilities, Rashtriya Vayoshri Yojana (providing assistive devices to low-income seniors) etc.
- **Palna Scheme (under Mission Shakti):** centrally sponsored scheme, for establishing Anganwadi-cum-Crèches to provide institutional daycare for children aged 6 months to 6 years.
- **Saksham Anganwadi and POSHAN 2.0:** for early childhood care, reaching children up to 6 years of age for supplementary nutrition, immunisation, and pre-school education
- **Pradhan Mantri Kaushal Vikas Yojana:** via the National Skill Development Corporation for training for care roles through councils like Home Management and Care Givers Sector Skill Council
- **Indo-Japan Technical Intern Training Programme** allows Indian caregivers to undergo on-the-job training in Japan's elderly care sector before returning to India.

Way ahead

EAC-PM proposed a 4-pillar framework to transform care into social and economic infrastructure.

Pillar1: Innovative Financing

- **Establish Parivar Seva Kosh (Family Care Fund):** An outcome-based fund in Ministry of Finance for community-based multi-generational care facilities (for centre and home-based child and elder care services)
- **Create a "Carepreneur Fund"**: by Ministry of MSME for concessional finance to care startups and **cooperatives**

Pillar 2: Care Workforce Development

- **Standardize training and certifications** (by Ministry of skill development) for professionalisation and expansion of the care workforce
- **Global Partnerships**: World Bank funded Tamil Nadu's Women Employment and Safety Programme to provide childcare for working women.

Pillar 3: Policy Reforms

- **Shared Parental Leave**: E.g. Sikkim's extended paternity leave, and monthly financial assistance for mothers in private sector
- **Urban Planning**: Embed care facilities as "**essential social infrastructure**" in city master plans by utilizing land reservation, co-location of childcare in government schools (community proximity and utilisation of underutilised space), linking care indicators with project appraisal etc.

Pillar 4: Quality Assurance: Establish National Minimum Standards for staffing ratios, infrastructure, and safety across all public, private, and NGO providers e.g. MoWCD's National Minimum Standards for creche facilities.

Conclusion

A robust care economy is not merely a social welfare measure but a strategic economic investment that can enhance women's workforce participation, create quality jobs, and support inclusive growth. Recognising care as essential social infrastructure, backed by adequate financing, skilled workforce, and gender-responsive policies, will help India harness its demographic dividend while advancing SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth).

6.5. SURVEY ON HOUSEHOLD CONSUMPTION ON HEALTH

Why in News?

Recently, **Survey on Household Social Consumption: Health** was released by National Statistical Office (NSO)

More on News

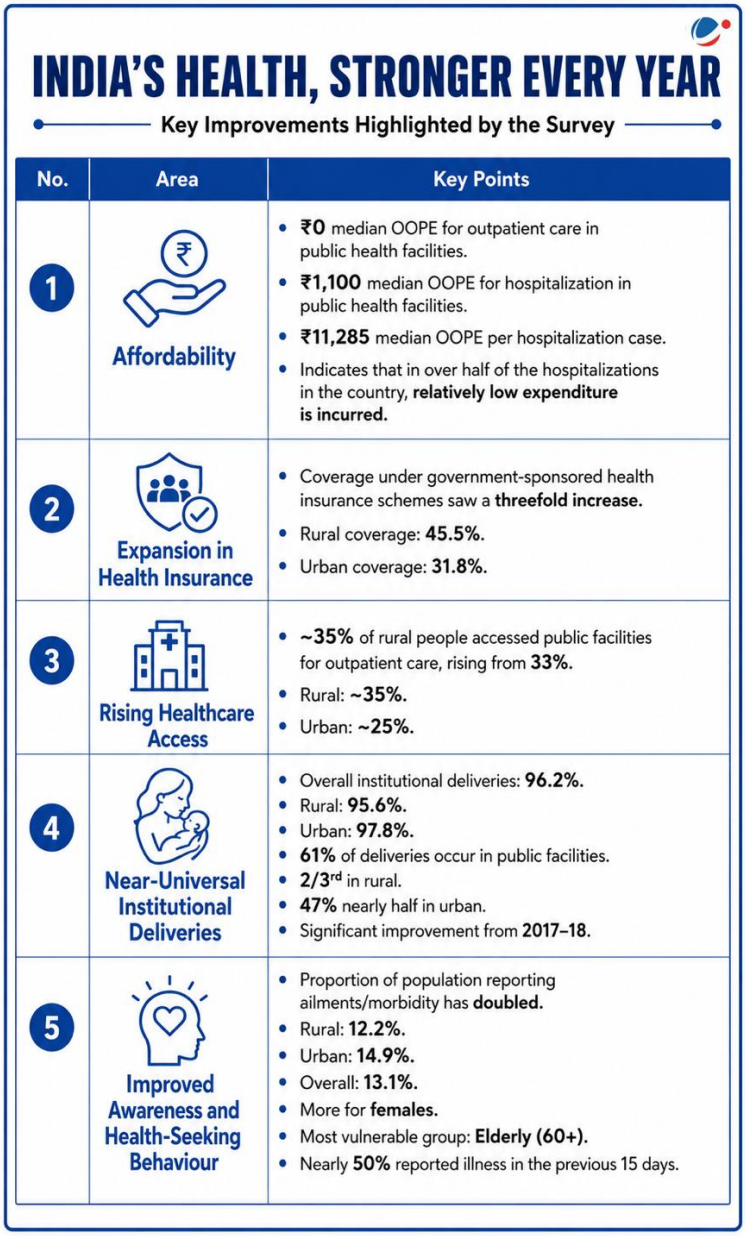
- It is **8th such survey** and being brought out during **National Sample Survey** (NSS) **80th round** (January-December 2025).
- Except some diseases like AIDS, Cancer, most diseases were identified using **self-reporting** increasing the chances of under or over reporting.

Key Drivers of Progress

- **Ayushman Bharat PM-Jan Arogya Yojna :**Centrally Sponsored Scheme under Ministry of Health (MoHFW) that provides free health cover of 5 lakh per family per year for secondary and tertiary care.
- **Swasth Bharat Portal,** by MoHFW. Its API-based federated architecture brings multiple national health programmes on a single interface, eliminating multiple logins and repetitive data entry, increasing interoperability and reducing duplications.
- **AMRIT Affordable Medicines and Reliable Implants for Treatment pharmacies:** Provides medicines at 50% to 90% discounts, reducing treatment costs.(managed by HLL Lifecare Limited a central public sector enterprise)
- **Janani Suraksha Yojna:** Centrally Sponsored Scheme under national health mission of MoHFW provides cash assistance to eligible pregnant women (all in low performing states having institutional deliveries)
- **Doctor to Population Ratio:** has increased to 1:811 (incorporating both allopathic and AYUSH practitioners) which is better than WHO recommended 1: 1000

Challenges Highlighted

- **Epidemiological Shift to NCDs**: A fall in infectious disease is supplemented by rising non-communicable diseases (NCDs) like diabetes now afflict people at younger ages.
  - Number of people suffering from **heart disease** is up almost 3 times since 2017-18
- **Dependence on Private Care:** For hospitalizations, over 60% of cases (57.9% rural, 64.6% urban) occur in private hospitals, while for outpatient care it was 43 % (rural) and 44 % (urban).
- **Persistent Financial Risk**: Despite insurance gains, average OOPE for hospitalization in private hospitals stands at INR 50,508, compared to INR 6,631 in public facilities.
- **Mental Health among working population**: Reporting of Psychiatric/Neurological issues peak in young adulthood (15-29)
- **Vulnerability to catastrophic health expenditures**: even though % covered under at least 1 Health insurance rose to 47.4 % in rural India and 44.3 % in urban areas, still more than half remains vulnerable.



Other Issues plaguing the health care

- **Sub-optimal Public Health Expenditure:** Government health expenditure as a share of GDP is 1.43% against the target of 2.5% of national health policy 2017.
- **Skewed Distribution:** Especially w.r.t. doctors and infrastructure. E.g. 80% of healthcare professionals are concentrated in urban areas. Rural India has 70% of people but only 40% of the hospital beds.
- **Fragmented Healthcare Governance:** Health is primarily a State subject, leading to variations in policy implementation. Weak coordination among different levels of government hampers effective service delivery.
- **Emerging Threats:** Climate change, antimicrobial resistance, zoonotic diseases, and future pandemics pose new challenges that require stronger public health preparedness and surveillance systems.
- **Poor primary care:** E.g. there is 1 rural Primary Health Centre (PHC) for 33,800individuals (against the norm of 30,000 individuals). Many times, they are understaffed, lack essential physical infrastructure like piped water, diagnostic equipment etc.

Way Ahead

- **Ramping Up Financing & Infrastructure:** The government must scale health expenditure to 2.5% of GDP prioritizing Primary Health Centres (PHCs) in line with **WHO's Alma Ata declaration** (endorsed by India) .
- **Pivot to Preventive Care:** With rise of NCDs, the focus must shift from curative to preventive care. Ayushman Arogya Mandirs must be leveraged for early screening and lifestyle management of NCDs.
- **Addressing the Mental Health Crisis**: The spike in psychiatric issues requires integrating mental health services into primary care, destigmatizing mental health in corporate and informal workplaces etc.

- **Rationalizing Private Healthcare Costs**: Government needs to standardize treatment costs, enforce transparency in hospital billing etc. to tackle the massive OOPE gap

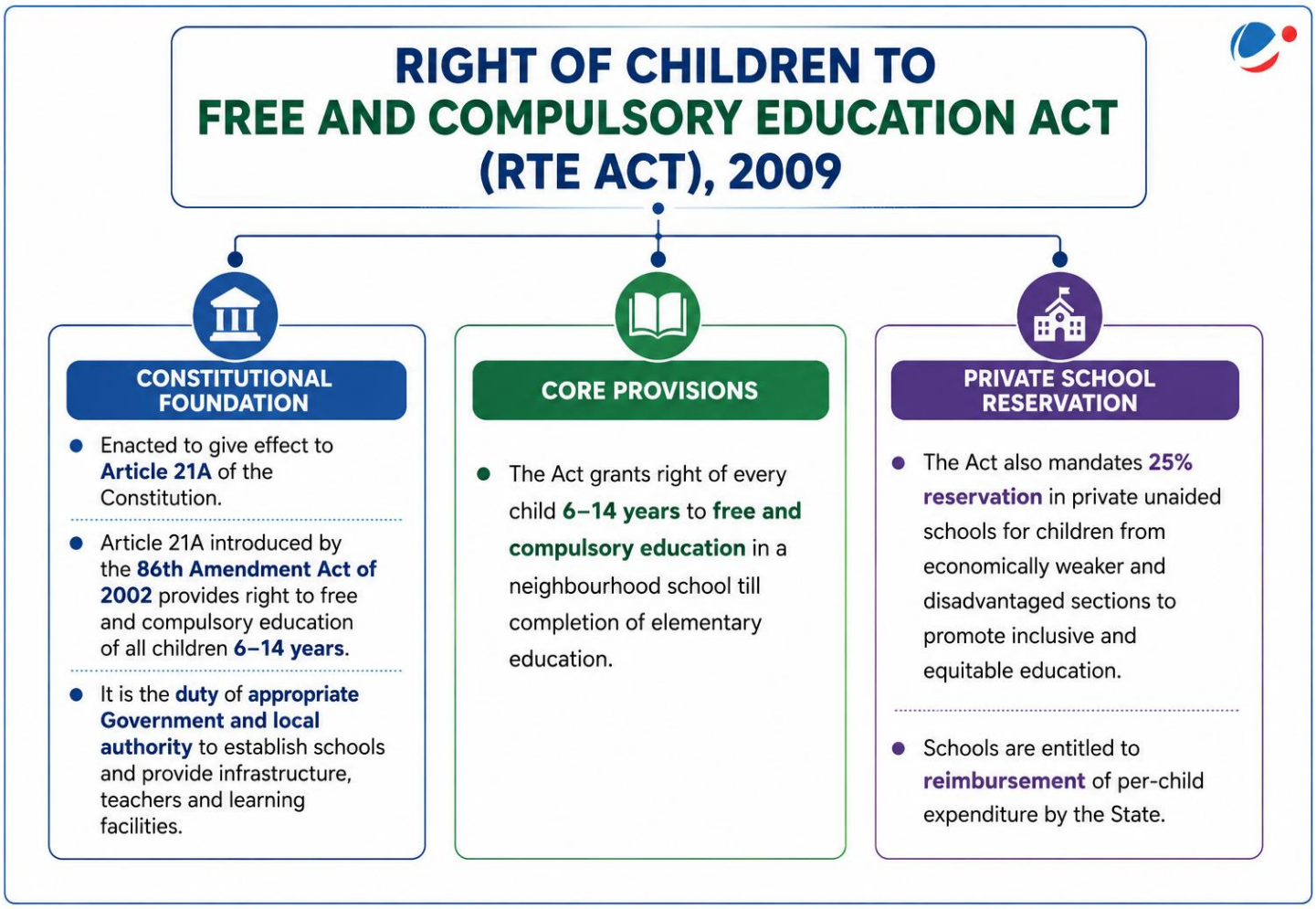
Conclusion

The survey reflects **significant progress in affordability, insurance coverage, and access to healthcare**, while highlighting persistent gaps in **equity, financial protection, and the growing burden of non-communicable diseases**. Achieving **Universal Health Coverage (UHC)** will require higher public investment, stronger primary healthcare, preventive care, and resilient health systems in line with the **National Health Policy, 2017** and **SDG 3 (Good Health and Well-being)**.

6.6. NEWS IN SHORTS

6.6.1. RIGHT TO EDUCATION (RTE) ACT, 2009

Supreme Court (SC) in '**Lucknow Public School Vs. The State of Uttar Pradesh & Ors'** held that **neighbourhood schools** are obligated to provide immediate admission to **eligible students under the RTE Act, 2009.**



Challenges in Implementation

- **School-Level Resistance:** Private schools continue to resist full inclusion of EWS students.
- **Hidden Costs Burden:** Expenses for uniforms, books, and materials shift the burden onto poor families.
- **Other:** Weak monitoring, limited accountability, inter-state variations in execution and outcomes, inadequate grievance redressal mechanisms, last-mile delivery challenges, etc.

Significance of the Judgement

- Promotes **substantive equality and social integration** from early childhood.
- Gives **enforceable and operational meaning** to fraternity as a core constitutional principle.
- Reinforces the **Common School System** envisioned by the **Kothari Commission (1964-66).**

Other Constitutional Provisions related to Right to Education

- **Fundamental Duty**: **Article 51A(k)** specifies duty of parents to provide opportunities for education to child **(6-14 years)**
- **Directive Principles of State Policy (DPSP): Article 45** directs the state to provide early childhood care and education to children **below 6 years.**

6.6.2. WOMEN AND MEN IN INDIA 2025 REPORT

Ministry of Statistics and Programme Implementation released Women and Men in India 2025 Report.

- The report presents a broad overview of gender-related trends across population, education, health, employment and decision-making in India.

Key Highlights of the Report

- **Population**
  - **Sex ratio at birth:** Improved from 904 in 2017-19 to 917 in 2021-23.
    - Arunachal Pradesh has highest sex ratio (1085), while Jharkhand (899) is at the bottom.
  - **Population Growth:** India's average annual exponential population growth follows an inverted U-shape, peaking in 1971–81 and declining thereafter.
- **Health**
  - **Maternal Mortality Ratio:** Significant decline from 254 in 2004-06 to 88 in 2021-23.
  - **Total Fertility Rate:** TFR in urban areas has shown a decline between 2019 to 2023 (Urban-1.5 and Rural-2.1).
- **Education**
  - **Literacy Rate:** There is a 14.4 percentage point gender gap in literacy rates in India (Male- 84.7% and Female-70.3%).
  - **Gross Enrolment Ratio:** The Female GER exceeds the Male GER at all levels of school education.
- **Participation in Economy**
  - **Worker Population Ratio (Aged 15 and above):** In 2025, it is 76.6% for males and 38.8% for females.
  - **Female Labour Force Participation Rate (LFPR):** Increased from 37.5% to 45.9% in rural areas.
- **Participation in Decision Making**
  - **Voter Turnout:** Female voter turnout surpassed male turnout in the 2019 and 2024 General Elections.
  - **Representation of Women in Parliament:** As of 2025, women constitute 13.65% of MPs and hold 9.86% of ministerial portfolios.

6.6.3. NCRB RELEASES 'CRIME IN INDIA 2024' REPORT

Key Highlights of Report (compared to 2023)

- **Crime rate per lakh population: dropped to 418.9** from 448.3**.**
- **Overall case registrations: decrease of 6.0%**.
- **Crimes Against Vulnerable Groups:**
  - **Women: decreased by 1.5%** to ~4.4 lakh cases, with **'Cruelty by Husband'** making up the largest share (~42%).
    - A **new category** called **'Offences against Women and Child'** was introduced under the BNS.
  - **Children: increased by 5.9%** to ~1.8 lakh cases.
  - **Senior Citizens: rise of 16.9%** over 2023, with theft and fraud being the most common offenses.
  - **Scheduled Castes (SCs) & Scheduled Tribes (STs):** Crimes **against SCs decreased by 3.6%**, and crimes **against STs decreased by 23.1%**.
- **Specific Crime Categories**:
  - **Cyber Crimes: surged by 17.9%**, with **fraud accounting for nearly 73%** of these incidents.

- **Economic offenses: increased by 4.6%,** dominated by forgery, cheating, and fraud.
- **Juveniles in conflict with the law: increased by 11.2%**, with the vast majority (77.7%) falling in the 16 to 18 age bracket.

National Crime Records Bureau (NCRB)

Establishment: in 1986, on recommendations of the Tandon Committee, National Police Commission (1977-81), and MHA's Task Force (1985).

Core Mandate: Functions as a central repository of information on crime and criminals to assist investigators in linking crimes to perpetrators.

Major Initiatives:
- **CCTNS (Crime and Criminal Tracking Network & Systems), 2009:** Has connected 15,000+ police stations across India.
- **National Digital Police Portal, 2017:** Police can search criminals/suspects on CCTNS, and citizens can file online complaints, verify tenants, etc.

Key Databases: National Database of Sexual Offenders (NDSO); Online Cyber-Crime Reporting Portal, etc.

Specialized Tools: CyTrain (training portal for cybercrime investigation); Cri-MAC (Crime Multi-Agency Centre- facilitates inter-agency coordination), etc.

Other Key Publications: Accidental Deaths & Suicides in India; Prison Statistics India.

Other Portals Managed by NCRB: Central Finger Print Bureau; NAFIS (National Automated Fingerprint Identification System), etc.

6.6.4. ACCIDENTAL DEATHS & SUICIDES IN INDIA 2024

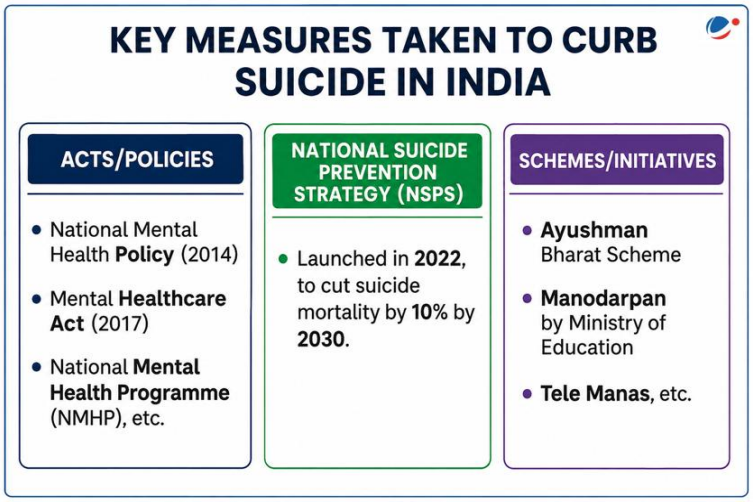
The **Accidental Deaths & Suicides in India 2024** released by NCRB provided data on Accidental Deaths due to **Forces of Nature** and **Other Causes including Traffic and Road Accidents**.

Key Highlights of the Report on Accidental Deaths

- **Rate of Accidental Deaths (per lakh population): Increased to 33.3 (2024)** from 31.9 (2023) with maximum causality reported in age of 30 to below 45 years (31.3%).
- **Accidents due to Forces of Nature**: 7,903 deaths (**35.7% deaths due to 'Lightning',** 23.2% deaths due to 'Heat/Sun Stroke' and 10.5% deaths due to 'Exposure to cold'.)
  - **Madhya Pradesh (577), Bihar (360), Uttar Pradesh (275**) accorded maximum of lightning deaths.
- **Accidents due to Other Causes:** Accounted for 4,59,954 deaths with a greater share of men than women.
  - **Major causes: 'Traffic Accidents' (43.4%),** 'Sudden Deaths' (16.5%), 'Drowning' (8.7%), 'Falls' (5.7%), 'Poisoning' (4.7%) and 'Electrocution' (3.4%).
  - **Fire Accidents:** 5,971 cases of reported fire accidents caused 5, 888 deaths in 2024.
  - **Road Accidents**: **Road Accidents (87.8%)** contributed to the largest share (**railway accidents reported nil** deaths) **among Traffic Accidents.**
    - **Major Cause: Over speeding** was prime cause contributing to 61.2% of road accidents.
    - **Regional Extent: Greater accidents** were reported from the **rural areas (59.7%)** compared to urban areas (40.3%).
    - **Location of Occurrence: 31.2% of total road accidents** were reported near **residential areas.**

Key Highlights of the Report on Suicides

- **Rate of Suicides (per lakh population) decreased** from 12.3 (2023) to **12.2 (2024).**
- **Causative Factors of Suicides: 'Family Problems (other than marriage related problems)' (33.5%),** 'Illness' (18.0%) and 'Drug abuse/addiction' (7.6%) together accounted **for 59.0% of total suicides** in the country during 2024.
- **State wise distribution:** Majority were reported in **Maharashtra followed by Tamil Nadu.**
  - **Delhi** reported highest number of suicides (2,905) among UTs, **followed by Puducherry.**
- **Education Status of Victims:** Only **5.6% of total suicides victims were graduate** and above.
  - **10.1%** victims of suicide were **illiterate.**
- **Trends in Cities:** Suicide rate in **cities (16.3) was higher** compared to all-India suicide rate (12.2).
- **Professional Status of Suicide Victims:** Among male suicides, maximum suicides were committed by **daily wage earners.**
  - Amongst females, highest number was of **house-wives.**
  - **In farming sector, 10,546 persons (6.2%)** accounted for total suicide victims.
- **Overall male: female ratio:** Stood at 73.5 : 26.5.



6.6.5. FORCIBLE ACID INGESTION UNDER RIGHTS OF PERSONS WITH DISABILITIES ACT

- The Supreme Court **in Shaheen Malik Vs Union of India (2025)** invoked **Article 142** to hold that persons forcibly made to consume acid, as well as those suffering internal injuries without visible external harm, fall within the ambit of 'acid attack victims' under the Rights of Persons with Disabilities Act, 2016.
  - The court also informed the government that **existing punishment for acid attack had failed as a deterrent, suggested reversing the burden of proof onto the accused** and said acid sellers should be made co-accused in such cases.
  - The court had also **suggested framing a comprehensive policy framework to protect the survivors**, who, even if they survived, require extensive and continuous medical treatment.
- The deemed recognition would **aid victims of forcible acid ingestion to claim disability benefits due under the 2016 Act.**
  - Earlier, the 2016 law recognised only victims of acid-throwing, and not forcible acid ingestion.
  - Though the **Bharatiya Nyaya Sanhita (BNS) accepted both the act of acid-throwing and the administration of acid as offences punishable** with imprisonment from 10 years to a life sentence under Section 124 (voluntarily causing grievous hurt).

6.6.6. JANANI PLATFORM

Ministry of Health and Family Welfare launched **JANANI (Journey of Antenatal, Natal and Neonatal Integrated Care)** platform.

About JANANI

- **Service-oriented digital platform** to comprehensively monitor and maintain digital health records of women during reproductive age.
- An **upgraded version** of existing **RCH (Reproductive and Child Health) portal,** creating a **longitudinal health record** by capturing key service delivery events across continuum of care.
- **Key Features:**
  - **Interoperability:** Enabling integration with national platforms like **U-WIN and POSHAN.**
  - **Unique Identifiers:** Like ABHA, Aadhaar (OTP and biometric) and mobile number for registration of beneficiaries.
  - **Others: QR-enabled digital Mother and Child Health (MCH) Cards**; **automated alerts** for high-risk pregnancies, **real-time dashboards** for supervisory review, etc.

6.6.7. WORLD URBAN FORUM

The **13th Session of the World Urban Forum (WUF-13)** was held in Baku.

About World Urban Forum

- **Established: 2001** by the United Nations.
  - **First Session:** Held in **Nairobi in 2002.**
- **Organized by:** United Nations Human Settlements Programme **(UN-Habitat).**
- **Nature:** Premier global conference and high-level, open and inclusive platform on sustainable urbanization.
- **Objective:**
  - Raise **awareness** on sustainable urbanization.
  - Promote exchange of **best practices and policy** experiences.
  - Strengthen **collaboration** among governments, local authorities, civil society, academia and private sector stakeholders.

World Urban Forum 13:

- **Theme: "Housing the World: Safe and Resilient Cities and Communities."**
- **Venue:** Baku, Azerbaijan.
- **Co-organized By:** UN-Habitat and the Government of Azerbaijan.
- **Linked Agenda:** Supports implementation of the **New Urban Agenda (2016)** and **SDG 11 (Sustainable Cities and Communities).**
- **Outcome Document: Baku Call to Action**.
  - Baku Call to Action **urges accelerated global action to address the housing crisis** and promote inclusive, resilient, sustainable and adequately financed urban development.

Related News: World Cities Report 2026 Released by UN-Habitat

Titled **"The Global Housing Crisis Pathways to Action",** report highlights **affordability constraints, pervasive informality, increasing climate-related risks,** etc., as interlinked and mutually reinforcing challenges.

Key Highlights of the Report

- **Housing Crisis**: Up to 3.4 billion people worldwide lack access to adequate housing.
  - **Homelessness rate for India** stand at **13 per 10,000** as per Institute of Global Homelessness.
- **Climate-related hazards:** Projected to destroy 167 million homes by 2040.
  - Housing alone is responsible for an estimated 17- 21% of total emissions.
- **Ineffective National Housing Policies:** Fail to fully incorporate key dimensions of adequacy like affordability, tenure security, accessibility, etc.
- **Housing Prices:** Average price-to-income ratios increasing from **9.5 in 2010 to 11.7 in 2023 globally.**

India's **Mumbai and Delhi** record price-to-income ratios of **14.3 and 10.1.**

7. SCIENCE AND TECHNOLOGY

7.1. PRIVATE PLAYERS IN INDIA'S SPACE SECTOR

Why in the News

Private investment is expanding in India's space sector over the past five years following the opening up of the sector to non-government entities.

Current Status of Indian Space Economy

- **Current Value (2023):** Valued at **US$ 8.4 billion**, accounting for about **2% of the global space economy**.
- **Decadal Vision (2033): IN-SPACe Decadal Vision and Strategy** targets growth to **US$ 44 billion**, capturing **8–10% of the global market**.
- **Long-Term Goal (2040):** Projected to reach **US$ 100 billion**.
- **Budgetary Growth:** Space budget has nearly tripled over the last decade, reaching **₹13,416 crore** in **Union Budget 2025–26**.
- **Private Sector Participation**
  - **Investment Surge:** Private investments have exceeded **US$ 600 million** over the past five years.
  - **Industry Engagement:** More than **330 industries and Micro, Small and Medium Enterprises (MSMEs)** are associated with **IN-SPACe**, accessing ISRO facilities and services.
  - **Startup Ecosystem:** Number of spacetech startups has grown from single digits in **2019** to **400+ startups by early 2026**.

Significance of Private Sector Participation

- **Atmanirbhar Bharat:** Reduces dependence on foreign technology, enhances competitiveness, and supports **Atmanirbhar Bharat**.
- **Freeing Up ISRO:** Allows **ISRO** to focus on deep-space missions, science, and advanced R&D while private firms handle commercial activities.
- **Agility and Advanced Tech:** Startups drive innovation in **semi-cryogenic 3D-printed engines, hyperspectral imaging, and AI-driven space analytics**.
- **High-Skill Employment:** Generates jobs in **aerospace engineering, software development, data analytics, advanced manufacturing, logistics, and supply chains**.
- **Preventing Brain Drain:** Supported by initiatives like the **₹1,000 crore Venture Capital Fund**, helping retain talent and intellectual property in India.

Recent Achievements of Private Players in Space Sector

- **Skyroot Aerospace:** Launched **Vikram-S**, India's first private rocket, pioneering private orbital access.
- **Agnikul Cosmos:** Launched **India's first semi-cryogenic engine-powered rocket** and the **world's first rocket powered by a single-piece 3D-printed engine.**
- **Pixxel:** Launched and operates **Firefly hyperspectral satellites** for monitoring crop health, pollution, methane emissions, and climate conditions.
- **Digantara, Tathya, and Bellatrix Aerospace:** Emerging startups advancing India's private space ecosystem across diverse domains.

- **Cross-Industry Benefits:** Satellite data supports **irrigation, crop monitoring, weather forecasting, disaster management**, and **broadband/telecom services** in remote areas, advancing **digital inclusion**.

Government Initiative and Institutional Mechanism

- **Nodal Agencies and Institutional Frameworks:**
  - **IN-SPACe:** Established in **2020** as a single-window agency to promote, authorise, and supervise **Non-Government Entities (NGEs)**.
  - **NSIL (NewSpace India Limited):** ISRO's commercial arm; commercialises ISRO assets and transfers technologies such as the **SSLV** to industry.
  - **ISpA (Indian Space Association):** Industry body and policy think tank representing private space companies.
- **Strategic Policy and Regulatory Reforms:**

- **Indian Space Policy 2023:** Clearly defines stakeholder roles and permits **end-to-end private participation** in space activities.
- **FDI Liberalisation:** Allows **100% FDI** (automatic route) in satellite components/subsystems, **74%** in satellite operations and ground segments, and **49%** in launch vehicles.
- **Sector-Specific Policies: Space-Based Remote Sensing Policy (2020)** and **Spacecom Policy (2020)** support private participation in remote sensing and communications.

- **Financial Support and Funding Mechanisms:**
  - **₹1,000 Crore VC Fund:** Managed by **SIDBI**, it provides risk capital of **₹10–60 crore** to support **space startups.**
  - **Technology Adoption Fund (TAF): ₹500 crore** fund to commercialise early-stage innovations.
  - **IN-SPACe Seed Fund Scheme:** Grants up to **₹1 crore** for ideation and prototype-stage startups.
- **Infrastructure Access and Technology Transfer:**
  - **Access to ISRO Facilities:** Startups can use ISRO's **testing facilities, launchpads, laboratories, and tracking centres**.
  - **IN-SPACe Technical Centre (Ahmedabad):** Provides affordable **design, integration, testing, and simulation** facilities.
  - **POEM & Service Schemes:** Supports in-orbit testing through **POEM**, along with **Satellite Bus as a Service** and **Ground Station as a Service**.
- **Ecosystem Building and Awareness:**
  - **Space Applications Adoption Workshops (SAAW):** Promote adoption of Indian space solutions in **agriculture, defence, and disaster management**.
- **State-Level Institutional Support:**
  - **Karnataka: Draft Space Technology Policy (2024–29)** aims for **50% of India's space market** and support for **500+ startups**.
  - **Tamil Nadu: Space Industrial Policy** promotes specialised **Space Bays** near ISRO facilities for startups and major companies.

Challenges

- **Absence of a Comprehensive Space Law:** Lack of a dedicated space law creates uncertainty in **liability, dispute resolution and foreign partnerships**.
- **IPR Ambiguity:** Unclear ownership of technologies developed through **public-private partnerships (PPPs)** hampers innovation.
  - Growing concerns over foreign acquisition of Indian startup technologies amid global civil-military integration.
- **Skeptical Private Capital:** Long gestation periods and high risks deter traditional **Venture Capital and private equity** investors.
- **Sluggish Fund Deployment:** Delays in operationalising support mechanisms such as the **Antariksh Venture Capital Fund**.
- **Fragmented Supply Chains:** Dependence on global suppliers and export restrictions limits access to critical components.
- **Siloed Government Procurement:** Separate space-data programmes across **agriculture, energy, and disaster management** reduce efficiency and scalability for startups.
- **Lack of Specialised Expertise:** Shortage of experts in **optics, thermal control, advanced payload design, and downstream analytics**.

Way Forward

- **Enact a Comprehensive Space Law:** Finalise the **Indian National Space Bill** to address liability, dispute resolution and foreign partnerships.
- **Strengthen Intellectual Property Rights (IPR):** Clarify ownership of technologies developed through **public-private partnerships** and safeguard domestic innovations.
- **Favourable Export Regime:** Leverage platforms such as **Quad** and **BRICS** to expand exports of space hardware and data services.

Digital Current Affairs
Read our previous coverage on India's Space Programme

- **Build a Resilient Supply Chain:** Develop localised space manufacturing parks and domestic component ecosystems.
- **Specialised Curricula:** Introduce advanced courses in **space science, optics, thermal control, and downstream analytics**.
- **Strengthen International Alliances:** Deepen cooperation with **National Aeronautics and Space Administration (NASA)**, **European Space Agency (ESA)** and **Japan Aerospace Exploration Agency (JAXA)** through collaborative missions.

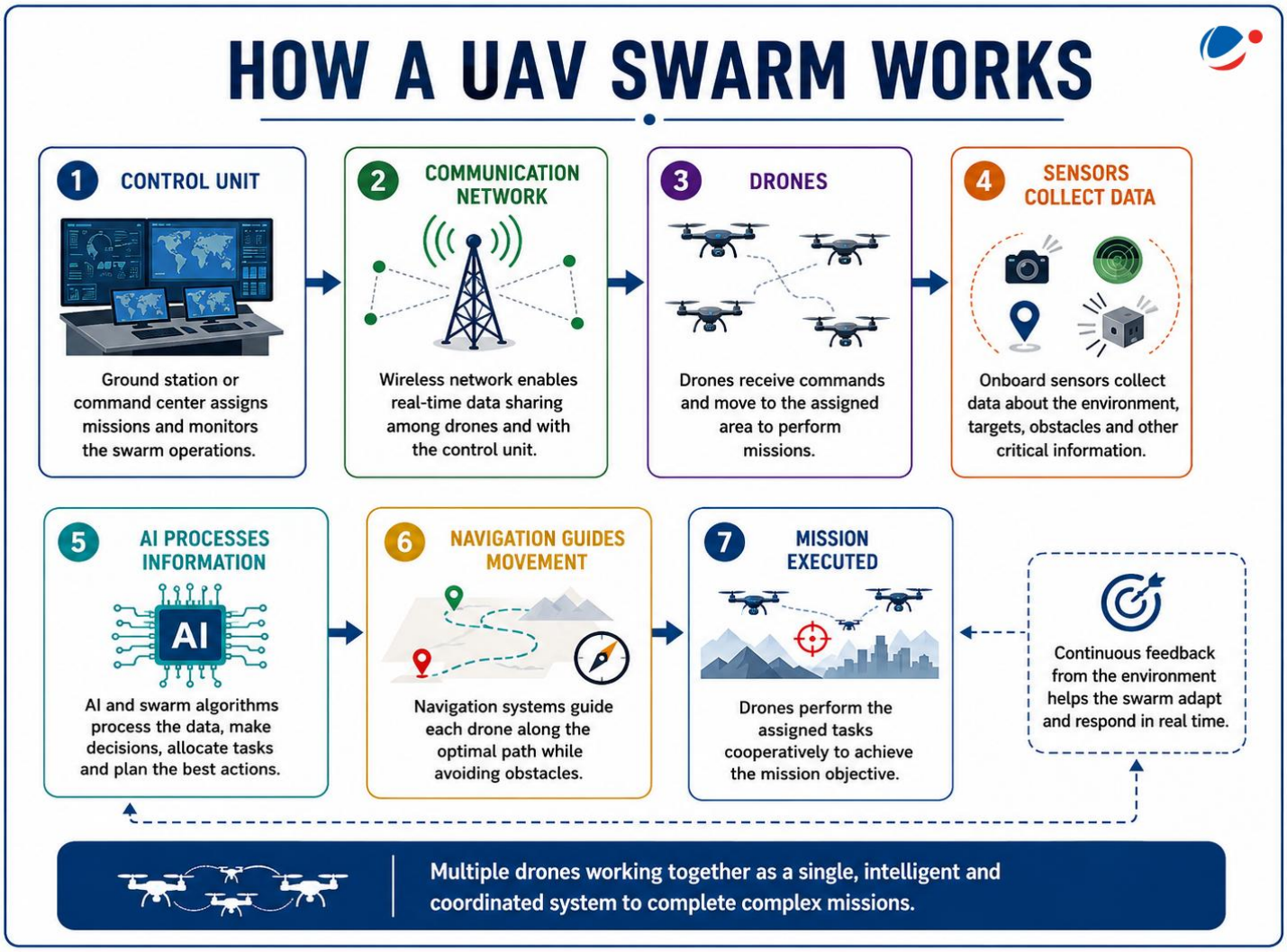
7.2. ATLAS DRONE SWARM SYSTEM

Why in the News?

China recently unveiled its **new Atlas drone swarm system (atlas or atelasi).**

More on the News

- It is an **AI-enabled UAV drone swarm warfare system** developed by China Electronics Technology Group Corporation.
- A UAV (Unmanned Aerial Vehicle) swarm is **a group of autonomous drones** that **work collectively to perform tasks through coordination, communication, and distributed decision-making.**



Key features of Drone Swarm System

- **Scalability:** UAV swarms can easily **increase or decrease the number of drones** based on mission requirements.
  - Their effectiveness **remains high even** as the **swarm size grows** significantly.

- **Robustness & Survivability**: The swarm can continue **operating even if some drones are destroyed or malfunction** the other drones **automatically compensate for losses, ensuring mission continuity**.
- **Adaptability & Flexibility**: UAV swarms can **modify their behavior according to changing environments and mission objectives**.
  - AI enables **real-time route changes, target updates, and formation adjustments.**
- **Parallelism**: Multiple drones can perform **different tasks simultaneously** which significantly improve mission **speed, efficiency, and area coverage.**
- **Multi-Tasking**: Different groups within **the swarm can execute surveillance, communication, and strike missions** at the same time.
  - It enables one swarm to **perform multiple battlefield functions simultaneously.**
- **Decentralized Control**:
  - Drones coordinate **directly with each other** rather than relying entirely on a **central controller**. This makes the swarm more **resilient to communication disruptions** and enemy jamming.
- **Collective Intelligence**: Individual drones **share information and make coordinated decisions** as a group.
  - The swarm behaves like a single **intelligent system (hive mind) capable of solving complex tasks.**
- **Autonomous Decision-Making**: **AI and Machine Learning** enable drones to recognize targets, avoid obstacles, and allocate tasks autonomously.
  - This reduces **human workload and accelerates battlefield decision-making.**

Similar military systems

- **India:** Chanakya and Project Samadh.
  - Bhargavastra for counter-swarm drone operations.
- **US:** Perdix, OFFSET (under development)
- **Israel:** The Drone Swarm Defense System
- **Turkey:** KARGU Swarm

Challenges of UAV Swarms

- **Communication and Coordination**: Maintaining reliable **communication among a large number of drones is difficult.**
- **Path Planning & Collision Avoidance:** Drones must continuously **calculate safe routes while avoiding obstacles and each other.**
- **Energy Constraints**: Limited battery life **restricts flight time, payload capacity, and operational range.**
- **Environmental Disturbances**: Maintaining coordinated formations in **strong winds, bad weather, or complex terrain** is challenging.
- **Ethical Concerns**: Issues of **privacy, airspace regulation, accountability**, and autonomous weapons remain unresolved.

Conclusion

As drone swarms become a key component of future military doctrines, countries must strengthen indigenous capabilities, develop effective counter-swarm technologies, and establish international norms to ensure their responsible and secure use.

7.3. EASE OF DOING RESEARCH & DEVELOPMENT (R&D) IN INDIA

Why in the news?

Recently, NITI Aayog released a report titled **"Ease of Doing Research & Development in India"** identifying key barriers in India's R&D ecosystem along with a set of actionable recommendations.

Current R&D Ecosystem of India

- **Gross Expenditure on Research and Development (GERD):** Stands at around **0.65% of GDP** in India, significantly lower than **United States (~3.5%), China (~2.4%), and Republic of Korea (~4.5%).**
  - Government funding continues to **account for dominant share of R&D expenditure** in India with relatively modest private sector participation.
- **Researcher Density:** Number of **Full-Time Equivalent (FTE)** researchers stand at **262 per million,** compared to USA (4,821), China (1,585), etc. (Global Innovation Index, GII, 2025).

Key Challenges and Recommendations concerning Ease of Doing R&D in India (NITI Aayog)

Key Challenges	Recommendations
Funding and Utilization	
• **Concentration of R&D funding in selected institutions**: E.g., IITs receive more than 80% of ANRF's R&D funding. • **Limited cross-departmental visibility:** E.g., both **DST and CSIR support R&D projects in Hydrogen Energy, Carbon Capture Utilization and Storage** etc.	• **Enhance national investment in R&D:** To at least **2% of GDP**, in 4-5 years. ○ Attract around **half of targeted GERD** from private sector. • **Enhance Philanthropic and CSR Support:** By leveraging CSR provisions under Companies Act, etc.
Attracting and Retaining Quality Human Resource	
• **Delayed Disbursal of Fellowships:** Along with limited institutional autonomy in **mapping Human Resources.** • **Delays in Recruitment**: Due to **administrative reasons** (financial reasons in case of state institutions). • **Administrative burden on teachers:** Faculty members are often engaged in **teaching responsibilities and administrative duties** with very limited time for R&D.	• **Increase in fellowships**: DST, ANRF, DBT, DSIR, DHE, ICAR and ICMR may consider **increasing postdoctoral fellowships** in S&T, by 20% every year. • **Create 'Vigyan Nidhi':** It will act as a digital fellowship platform enabling direct benefit transfers and structured support to address gaps in fellowship funding and disbursal delays. • **Faculty reforms:** Provide Institutional Autonomy to rationalise faculty and adopt flexible hiring models; Create Teaching and Research focused tracks in Universities; etc.
Institutional Structures and Processes	
• **R&D efforts spread across too many themes:** Without **prioritisation or long-term planning.** • No **focused assessment/rating.** • **Lack of enabling policies:** For **faculty/researcher-led entrepreneurship in** Institutions**.** • **Other issues: Absent or ineffective dedicated R&D office** in institutions; **Inadequate guidelines** for administrative/financial aspects of projects.	• **Setting up professional R&D Offices:** As **single-window hubs** for grant management etc. • **Compliance-centric to trust-based administration:** Majority of the administrative functions should suffice with self-declaration or self-certification by researchers. • **Other suggestions**: Clearly identify priority research areas based on their existing strengths; Develop an Ease of Doing R&D assessment framework etc. •
Technology Development, Translation & Commercialization	
• **Lack of Effective Technology Transfer Support:** Concerning **translational aspect of technologies** developed in the lab. • **Weak Industry-Academia** Linkage: Limited Mobility between Academia and Industry across universities, public labs, etc. • **Absence of Regulatory sandbox provision:** In **deep-technology domains.**	• **Establishing/ Strengthening Technology Transfer Offices (TTOs).** • **Framework for Industry-Academia mobility.** • **Linking framework for incubators across ministries:** For enhancing capacity and integration across incubation ecosystem. • **Establish a Centre for Technology Indigenization (CTI):** To identify priority technologies for indigenization.
Access to Knowledge & Resources	
• **Gaps in Access to Journals, Databases and Software:** E.g., **One Nation One Subscription**	• **Widen ONOS coverage:** To include **private institutions** on cost sharing basis.

(ONOS) currently not extended to private universities/ institutions. • **Challenges in National publications:** Like inconsistent peer-review, limited international indexing, low citations, etc.	• **Developing large-scale, integrated, and Web discoverable National Repository:** To provide open access and sharing of I**ndian research output.** • **Develop quality National Journals:** Through a professionally managed ecosystem, leveraging the expertise of Indian science academies.
R&D in State Institutions	
• **Lack of Institutional Support:** For **Grassroots Innovation.** • **Dual Control Structures:** E.g., administrative positions like **Registrar,** occupied by state civil services while functional authority rests with Vice-Chancellor. • **No defined framework:** For collaboration of **central R&D labs in state, with state institutions.**	• **State Science and Technology Councils:** To strengthen capability and resources. • **Creating a dedicated Grassroot innovation cell:** Within each State S&T Council. • **Develop a framework for collaboration:** Between **centrally funded R&D institutions**/HEIs with state level institutions.
Monitoring, Evaluation, Capacity Building and Policy Administration	
• **Linear flow:** Of existing Science, Technology and Innovation (STI) management framework with limited feedback mechanisms.	• **Establish National Institute for Science Policy and Governance (NISPG**): As nodal institution to bridge policy, implementation and monitoring gaps. E.g. Japan.

Key Initiatives towards Expanding Research in India

- **Research Development and Innovation (RDI) Scheme**: Support cutting edge technology, deep-tech projects and startups to encourage the private sector.
- **National Quantum Mission (NQM):** Established **four Thematic Hubs (T-Hubs)** located at IISc Bengaluru (Quantum Computing), IIT Bombay (Quantum Sensing & Metrology), etc.
- **National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS): 25 Technology Innovation Hubs (TIHs)** have been established in reputed academic institutions.
- **Anusandhan National Research Foundation (ANRF):** Under Department of Science and Technology to strengthen Industry-Academia linkages.
- **Atal Innovation Mission (AIM), 2016:** To promote a culture of innovation and entrepreneurship.
- **Other Key initiatives: 'NIDHI'** (National Initiative for Developing and Harnessing Innovations); **PRAYAS** (PRomoting and Accelerating Young and ASpiring technology entrepreneurs); establishing/strengthening **Technology Transfer Offices (TTOs),** proposed **Unified Architecture for Project Management System (UPMS)** of NITI Aayog, etc.
- **Key Organisations:** Council of Scientific and Industrial Research (CSIR); Indian Council of Agricultural Research (ICAR); Defence Research and Development Organisation (DRDO); etc.

Conclusion

By systematically **removing procedural bottlenecks and reinforcing enabling conditions** the operational foundations India's research ecosystem could be strengthened. Such reforms will enhance **research productivity, attract and retain high-quality talent,** and **improve translational outcomes.**

7.4. NEWS IN SHORTS

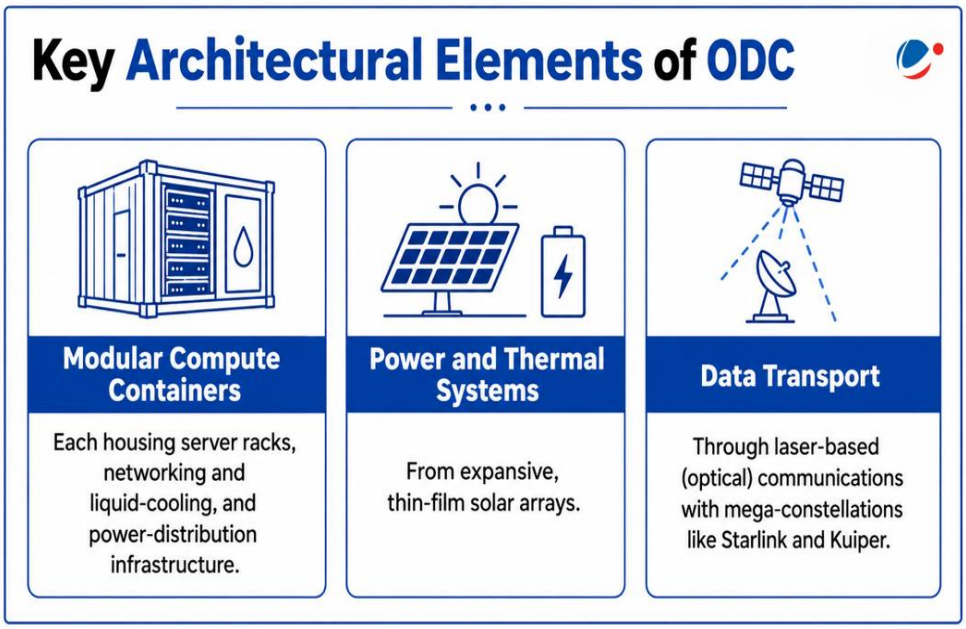
7.4.1. INDIA'S FIRST ARTIFICIAL INTELLIGENCE (AI) ORBITAL DATA CENTER (ODC) SATELLITE, PATHFINDER

To be built with partnership of **Space-tech firm, Pixxel** and **AI startup, Sarvam** where former will design, build, launch, and operate **pathfinder satellite,** while latter would provide AI backbone.

- The ODC, along with enhancing country's **space computing capabilities**, would promote **technological sovereignty** by operating independently of foreign cloud infrastructure.

About Orbital Data Centres (ODCs)

- **Meaning:** Scalable, cloud-enabled data processing and storage infrastructure **operating directly in space.**
  - Work either in **conjunction with terrestrial cloud infrastructure or independently.**



Significance of ODCs

- **Abundant, Uninterrupted power:** In a dawn-dusk sun-synchronous orbit (SSO), it can leverage continuous, high-intensity solar power, unhindered by night-time, weather, or atmospheric attenuation.
- **Free radiative cooling:** Deep vacuum of space serves as a gigantic, cold heatsink having effective ambient temperature of around -270 Celsius, eliminating freshwater needs for cooling.
  - Single **40 megawatt (MW) terrestrial cluster** can consume over 1 million tons of water annually for cooling.
- **Scalability and speed of deployment:** ODCs can be linearly scaled almost indefinitely through modular design, and be launched faster compared to building terrestrial infrastructure.
- **Overcome Limitations of Terrestrial Data Centres:**
  - **Huge Power Consumption:** Large data centres consume **approximately 1.5% of global power (WEF).**
  - **Land and permitting constraints:** Hyperscale data centres require significant land along with extensive planning, rights-of-way and environmental reviews.

About Pathfinder

- 200-kilogram-class satellite, expected to reach orbit by **fourth quarter of 2026.**
- **Key Features:**
  - **Data Center-grade GPUs (Graphics Processing Unit):** Unlike traditional satellite systems relying on low-power processors, it offers high performance computing in space.
  - **Hyperspectral Imaging Camera:** To be deployed for first time on a satellite, offering faster and real time decision making.

7.4.2. VEHICLE-TO-EVERYTHING (V2X) COMMUNICATION

TRAI releases Consultation Paper on Regulatory Framework for Vehicle-to-Everything (V2X) Communication.

- It identifies **Cellular-V2X (C-V2X)** as the preferred technology, leveraging existing 4G and 5G networks.
- V2X relies on **two main wireless technologies: Dedicated Short-Range Communication (DSRC)** and **C-V2X.**
  - **DSRC** uses **Wi-Fi** whereas **C-V2X** is a more comprehensive standard, leveraging **cellular networks**.

About V2X Communication

- V2X refers to a **communication system** where a **vehicle exchanges real-time information (E.g. position, speed)** with other vehicles, infrastructure, pedestrians, and networks using short-range and/ or direct communications.
- It is a core component of **Intelligent Transport Systems** and connected mobility.

Significance of V2X

- **Road Safety:** Enables safety applications like collision avoidance, intersection management, and emergency vehicle warning systems, reducing accidents and fatalities.
  - **SDG 3.6** aims to **halve** global road traffic deaths and injuries **by 2030.**
  - E.g. **Forward Collision Warning System (USA)** showed a 9% decrease in rate of forward collision conflicts.
- **Traffic Efficiency:** Optimizes traffic flow and reduces congestion through smart signal coordination.
- **Autonomous Vehicle Support:** Enhances decision-making for self-driving systems with external data inputs.
- **Environmental Benefits:** Lowers fuel consumption and emissions contributing to UN SDGs.
- **5G & Smart City Integration:** Enables low-latency communication for connected urban mobility systems.

Challenges of V2X

- **Standardization:** Lack of unified communication protocols hinders interoperability and large-scale adoption.
- **Security & Privacy:** Vulnerability to cyberattacks necessitates strong encryption and data protection mechanisms.
- **Infrastructure Investment:** High costs of upgrading traffic systems and deploying roadside units.
- **Regulatory & Legal Issues:** Unclear laws on liability, data ownership, and insurance.

7.4.3. SCRAMJET PROPULSION SYSTEM

DRDO successfully conducted a test of its **Actively Cooled Full Scale Scramjet Combustor**, achieving a **run-time of over 1,200 seconds** (earlier 700 seconds).

Scramjet Propulsion System

- **Concept:** Scramjet stands for **Supersonic Combustion Ramjet**.

- It is an advanced **air-breathing jet engine** designed to operate efficiently at hypersonic speeds by allowing the combustion of fuel to occur supersonically.
- **Operating Mechanism:** Vehicle's forward motion to "ram" and compress external air into the combustor.
  - It **uses atmospheric oxygen as its oxidizer** as it flies through the air.
- **Fuel Types: Hydrogen** or advanced **liquid hydrocarbon endothermic fuels**.
- **Advantages:** Reduce total weight of vehicle, making it a highly efficient propulsion system for **low-cost, reusable access to space** and an ideal foundation for **hypersonic cruise missile development**.

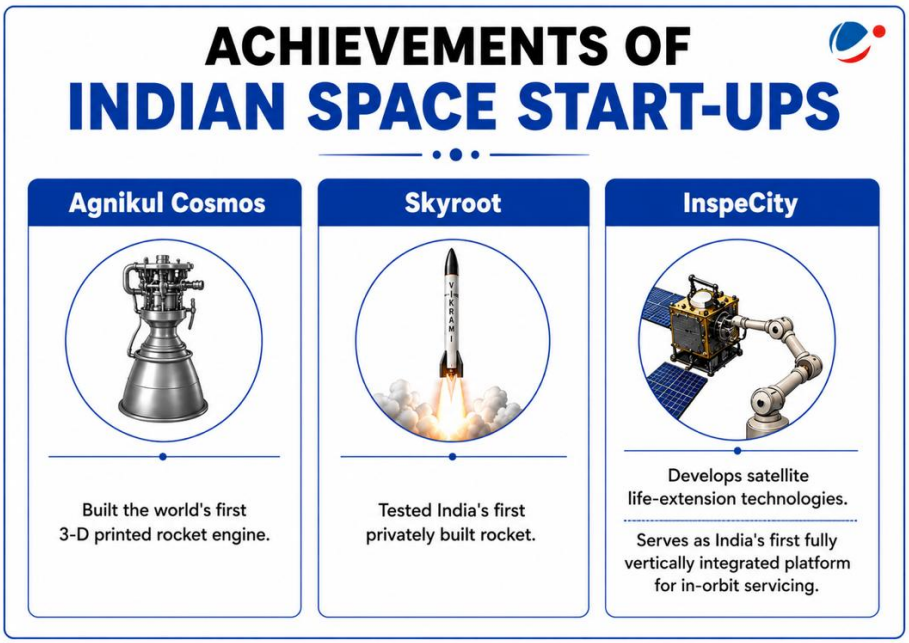
7.4.4. OPTOSAR SATELLITE MISSION DRISHTI

World's first OptoSAR satellite Mission Drishti launched.

- Developed by Indian Space Start-up **GalaxEye,** launched aboard **SpaceX's Falcon 9 rocket**, it is India's **largest privately built Earth Observation satellite**.

About Mission Drishti

- **Uses OptoSAR:** It is the **first to combine Multispectral Imaging (MSI) and Synthetic Aperture Radar (SAR)** on a single platform.
- **Orbit:** Sun-synchronous **Low Earth Orbit (LEO)**.
  - LEO orbits around Earth at an altitude of about **160 km to 2,000 km**.
- **Capability:** All-weather, day-night, intuitive imaging capabilities.
  - It will promote space-based surveillance.
- **Resolution:** Highest among Indian private players.



About OptoSAR

- It is an **end-to-end system of hardware** and **software** designed to work in perfect harmony.
- **Technology Used:** SyncFusion Stack
- **Addresses Limitations of Earlier Satellites**:
  - **Optical sensors:** Deliver clear, intuitive images, but are limited by clouds and darkness.
  - **SAR:** Can see through cloud cover and operate day and night, but imagery is harder to interpret.

7.4.5. VENUS ORBITER MISSION (VOM)

Sweden joins India's Shukrayaan (Venus Orbiter) mission.

- **Venus,** the **closest planet** to **Earth** and believed to have formed in conditions similar to Earth.

About Venus Orbiter Mission (VOM)

- It is India's **first scientific mission** designed to explore the planet Venus, approved in **2024.**
- **Objective**: For a better understanding of the Venusian surface and subsurface, atmospheric processes and the influence of the Sun on the Venusian atmosphere
- It is planned to be launched in **March 2028.**
- **ISRO will be responsible f**or the development of the spacecraft and its launch.
- **LVM-3** has been identified as the candidate launch vehicle which will place the spacecraft in an **Elliptical Parking Orbit (EPO).**

7.4.6. SOLAR WIND MAGNETOSPHERE IONOSPHERE LINK EXPLORER (SMILE) MISSION

The **SMILE mission** successfully launched aboard a Vega-C rocket from Europe's Spaceport in French Guiana (South America).

About SMILE Mission:

- **Joint Mission:** European Space Agency (ESA) and the Chinese Academy of Sciences (CAS).
- **Objective:** to capture the first-ever panoramic imaging of the interaction between the solar wind and Earth's magnetosphere, helping scientists understand space weather phenomena like geomagnetic storms.
- **Instruments:** Light ion analyser, Magnetometer, Soft X-ray imager, Ultraviolet aurora imager.
- **World's First Space-Borne Soft X-ray Imager (SXI):** To visualize the previously "invisible" boundaries of Earth's magnetosphere.

7.4.7. ZWAN-WOLF EFFECT

Recently, scientists using data from NASA's MAVEN mission made the first-ever observation of the Zwan-Wolf effect occurring in a planetary atmosphere rather than just a **magnetosphere**

- **MAVEN (Mars Atmosphere and Volatile Evolution)** spacecraft is a robotic orbiter dedicated to surveying the upper Martian atmosphere.
- A **magnetosphere** is the region around a planet dominated by the planet's magnetic field.

About Zwan-Wolf effect

- It is a phenomenon where **electrically charged particles** are **squeezed along magnetic structures** known as **flux tubes**, similar to toothpaste being squeezed out of a tube.
- This effect plays a key role in deflecting solar wind around the planet

7.4.8. ALFVÉNIC/KINK WAVES

New Study on Wave-driven turbulence generated by **Alfvénic/kink waves** may explain the extremely high temperature of the Sun's corona compared to its surface.

- **Solar Corona:** Outermost layer of the Sun's atmosphere extending millions of kilometres above the surface into space.
- **Temperature Paradox: Corona** temperature reaches about 1 million °C, much **hotter** than the Sun's **surface/photosphere** (~5,500°C).

About Alfvénic/Kink Waves

- **Alfvénic/Kink Waves**: **Transverse magnetohydrodynamic (MHD) waves** that travel along magnetic field lines in the Sun's corona, causing sideways oscillation of coronal plasma structures.
- They play a crucial role in understanding coronal heating.

7.4.9. VELA SUPERCLUSTER

Scientists have mapped the extent of the Vela Supercluster for the first time.

About Vela supercluster

- It is a collection of at least 20 galaxy clusters, each of which contains hundreds or thousands of galaxies, all gravitationally bound into a single entity.
- It stretches across about **300 million light-years** and contains an enormous amount of matter equivalent to about **30 million billion Suns.**
- It lies around **800 million light-years** from Earth within a region called the **Zone of Avoidance (ZoA)**.
  - ZoA is a ~20% region of the night sky obscured by the Milky Way's interstellar dust and stars, hiding background galaxies from optical observation.
- It is more massive than **Laniākea**, the supercluster that contains Earth and the rest of our galaxy.

7.4.10. GODDARD ASTRONAUTICS AWARD

India's Chandrayaan-3 mission was honored with prestigious **2026 Goddard Astronautics Award** by the American Institute of Aeronautics and Astronautics (AIAA).

About the Award

- **Significance:** Highest honor bestowed by AIAA for notable achievements in the field of astronautics.
- **Background:** Named after Robert H. Goddard, a pioneer in liquid rocket engine development, and received its current widened criteria in 1975.

Chandrayaan-3 Mission

- **Historic Landing:** On August 23, 2023, Chandrayaan-3 made history by becoming the **first spacecraft to achieve a soft landing near the Moon's South Pole.**
- **Mission Life:** One lunar day (~14 Earth days).
- **Components:** Vikram Lander and Pragyan Rover.

7.4.11. EGOCENTRIC DATA

The rapid growth of egocentric data collection has triggered ethical questions around surveillance, consent and labour displacement.

About Egocentric Data

- Egocentric data refers to **video and sensor recordings** captured from the **perspective of the person performing a task**.
  - Typically collected using cameras mounted on the head, chest or wrist, the footage shows exactly what a human worker sees while carrying out an activity including hand movements, object interactions, navigating spaces etc.
- **Significance:**
  - Designed to mimic the visual viewpoint a robot itself would have during deployment.
  - Valuable for training Vision-Language-Action (VLA) models, which are AI systems that combine visual understanding, language instructions and physical movement.
- **Related Issues:** Surveillance, privacy, ownership, compensation.

7.4.12. CELL BROADCAST SYSTEM (CBS)

Ministry of Communications launched Cell Broadcast System (CBS).

About CBS

- It is a **telecom-enabled public warning system** that enables authorities to **broadcast simultaneous, geo-targeted alerts** to mobile devices within a defined area.
  - It is integrated with the CAP-based **SACHET platform.**
- It is an **indigenous technology** developed by the **Centre for Development of Telematics (C-DOT)** under the Department of Telecommunications (DoT), in collaboration with the National Disaster Management Authority (NDMA) and the Ministry of Home Affairs (MHA)
- It overcomes the limitations of traditional SMS-based systems, ensuring that critical information can be disseminated quickly and efficiently to large populations within targeted areas.

7.4.13. WORLD HEALTH ASSEMBLY (WHA)

79th World Health Assembly (WHA) concluded in Geneva.

- Held under theme **"Reshaping global health: a shared responsibility",** it adopted multiple resolution and decisions on issues including **antimicrobial resistance**, etc.

Global Action Plan on Antimicrobial Resistance (GAP-AMR) for 2026–2036

- **About: 2nd edition of GAP-AMR** that builds on a decade of implementation of first **GAP-AMR adopted in 2015.**

- **Aim:** Attainment of 2024 UN General Assembly target of **10% reduction in bacterial AMR-associated deaths in humans**, **reducing antimicrobial use in agrifood systems**, and **minimizing environmental pollution from resistant microbes** by **2030.**
- **Technical support and Coordination:** Provided with **WHO** and **Quadripartite partners**, i.e., **Food and Agriculture Organization (FAO), United Nations Environment Programme (UNEP)** and **World Organisation for Animal Health (WOAH).**

About AMR

- **Meaning:** Occurs when **bacteria, viruses, fungi and parasites** no longer respond to **antimicrobial agents** like **antibiotics, antivirals, antifungals,** etc.
- **Burden:** AMR can **cause up to 39 million deaths by 2050.**
- **Key Initiatives:**
  - **India: National Action Plan on AMR (NAP-AMR)**; **Red Line Awareness Campaign**, etc.
  - **Global:** WHO's **Global Antimicrobial Resistance and Use Surveillance System (GLASS)**

Other Key Resolutions Adopted at 79th WHA

- **First Resolution on Radiation and Health:** Covering **both ionizing and non-ionizing** radiation to strengthen national systems for radiation protection.
- **Strategy on the economics of health for all (2026–2030):** Outlines actions to ensure that **health is systematically integrated into economic, fiscal and industrial policies**.

7.4.14. HEPATITIS

Global Hepatitis Report 2026 released by **World Health Organization (WHO).**

- As per the report, **India is among top contributors** to global hepatitis deaths, particularly from **hepatitis B and C.**

About Hepatitis

- It is an **inflammation of the liver**, caused majorly by **Hepatitis viruses, however,** other infections, toxic substances (e.g. alcohol, certain drugs), and autoimmune diseases can also cause it.
- **5 main hepatitis viruses:** Type A, B, C, D and E.
  - Types B and C lead to chronic disease and are most common **cause of liver cirrhosis and cancer.**
  - **Hepatitis A and E** typically caused by ingestion of contaminated food/water.
  - **Hepatitis B, C and D** occur usually due to **parenteral contact with infected body fluids.**

7.4.15. POLYENDOCRINE METABOLIC OVARIAN SYNDROME (PMOS)

International panel has **renamed polycystic ovary syndrome (PCOS) as PMOS**.

- PCOS is a **common hormonal condition** affecting women of reproductive age.
- In this, **ovaries produce excess androgens** (hormones regulating **masculine characteristics**), causing irregular menstruation, ovarian cysts, acne, weight gain and fertility difficulties.
- **"PCOS"** was considered misleading because many women diagnosed with it **do not have polycystic ovaries;** narrowing down both diagnosis and treatment.

About PMOS

- PMOS highlights **multiple hormonal pathways, central metabolic dysfunction and broader systemic risks.**
  - **Polyendocrine:** involvement of **multiple hormone-producing systems.**
  - **Metabolic:** connection with metabolic dysfunction, insulin resistance and cardio-metabolic dysfunctions as central features.
  - **Ovarian:** irregular menstruation, infertility and ovulation problems
  - **Syndrome:** complex multisystem disorder and **not single-organ complication.**

7.4.16. HANTAVIRUS

Hantavirus outbreak trapped 150 people on Dutch flagged cruise ship MV Hondius leaving 3 persons dead.

About Hantavirus

- Zoonotic viruses carried by rodents (rats and mice) that can cause severe disease in humans.
- **Transmission:** People usually get infected through contact with infected rodents or their urine, droppings or saliva.
- It causes 2 types of syndromes:
  - **Hantavirus Cardiopulmonary Syndrome (HCPS)**: A rapidly progressive condition affecting the lungs and heart.
  - **Haemorrhagic fever with renal syndrome (HFRS)**.
- There is **no specific cure** available.

7.4.17. BRAIN-EATING AMOEBA (NAEGLERIA FOWLERI)

Scientists warn that rising temperatures due to climate change can spread the risk of disease-causing amoeba, particularly, **brain-eating amoeba.**

About Brain-Eating Amoeba

- Lives in **soil and warm freshwater lakes, rivers, ponds, and hot springs** around the world.
- Enters the **body through the nose**, and attacks the brain tissues.
  - Can cause an infection called P**rimary Amebic Meningoencephalitis (PAM).**
  - PAM is a **rare, fulminant infection** of **central nervous system**, that is always fatal.

7.4.18. AYUSH GRID INITIATIVE

Ayush Anudan Portal under Ayush Grid Initiative launched aiming to digitize the submission, processing, approval, and monitoring of grant proposals.

About Ayush Grid Initiative

- A **digital initiative,** launched by the **Ministry of Ayush in** 2018**,** to build an integrated, transparent, and citizen-centric digital ecosystem for the Ayush sector.
- Under this initiative, multiple digital platforms including Ayush Hospital Management Information System **(A-HMIS)** and **e-Aushadhi** have been developed.
- It complies **Ayushman Bharat Digital Mission (ABDM)** and spans areas including education, research, medicinal plant administration, drug regulation, etc.

8. CULTURE

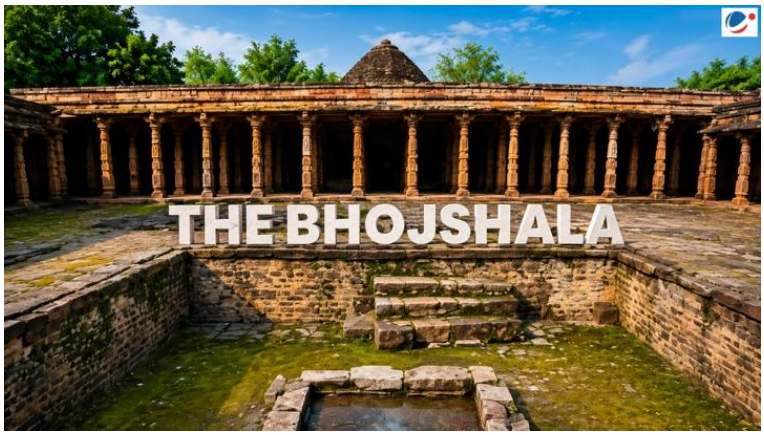
8.1. BHOJSHALA TEMPLE

Why in the News?

The Madhya Pradesh High Court has declared Bhojshala-Kamal Maula Mosque complex in Dhar as a protected monument under **Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958** with character of a Hindu temple.

More about the News

- The Court quashed **Archaeological Survey of India (ASI) order of 2003** that had restricted Hindu worship to specific days and permitted namaz for Muslim community on Friday.
  - The ASI will continue to exercise overall supervisory administration, conservation, and management of the property.
- The Court held, based on **ASI findings of 94 sculptures and 150+ Sanskrit inscriptions**, that site was built by Raja Bhoj in 1034 AD and later **converted into mosque**.
- The high court ruled that the Bhojshala case was a matter of **protecting the fundamental "right of worship" guaranteed under Articles 25 and 26 of the Constitution.**



About Bhojshala Temple

- **Origins:** Established by **Parmara King Bhoja** in 11th-century Dhar, Madhya Pradesh.
  - It was turned into the Kamal Maula Mosque by the subsequent Muslim rulers of Dhar.
- **Deity: Goddess Vagdevi Saraswati** or **Ambika**
  - The court has directed the government to make formal efforts to repatriate the ancient idol of Goddess Saraswati currently housed in the British Museum in London.
- **Key Features**:
  - Served as a premier college and centre of **Sanskrit learning** (Sarasvatisadana or Bharatibhavana).
  - Engraved slabs contain two odes to the **Kurmavtara or crocodile incarnation of Vishnu** written in Prakrit, classical poetry etc.
  - Inscription of **Karpuramanjari Drama** composed in poetry by Royal Tutor Madana, disciple of the famous Jain scholar Ashadhara.
    - The play refers to the **wars between the Paramaras and the Chalukyas** which were ended by matrimonial alliance.
  - Two **sarpabandha pillar** inscriptions detailing **Sanskrit grammar**.
  - **Two Sanskrit stanzas in Anustubh** metre were engraved, one praising Paramara king Udayaditya and Naravarman, successors of Raja Bhoja, and the other that inscription was installed by Udayaditya.

About King Bhoja (1000 to 1055 AD)

- **Contemporary of:** Rajendra I, Chola Dynasty, who built Brihadisvara Temple in Gangaikonda Cholapuram.
- **Conquests:** He defeated the Chalukyas of Lata (present-day Gujarat), Shilahara of Konkan, and Chahamanas of Shakambhari. He increased his power among the Dubkund Kachchhapaghatas and the Chandela feudatories. He adopted the **title of Parameshvara-Parama Bhattaraka.**
- **Contribution to Literature:**
  - **Samarängana Sutradhara**, an encyclopedic work on architecture. It deals with the planning of towns and villages, building of houses, halls and palaces as well as temples.

- **Sarasvatīkaṇṭhabharaṇa**, a treatise on Sanskrit grammar for poetic compositions; **Vyavaharamanjari**, a text on Dharmashastras or Hindu law and **Charucharya** a text on personal hygiene.
- **Contribution to Architecture**:
  - He founded the **city of Bhojpur** on the banks of the Betwa river, constructed the **Bhojeshwar Temple**, built three dams in the area, constructed **Upper Lake in Bhopal** by constructing an earthen dam across the Kolans River.
    - The lake was renamed Bhojtaal in 2011.

Bhumija Temple Architecture

- The term literally translates to "earth-born" or "country-born". It is an **evolved form of the Nagara** incorporating some Dravida influences in the temple body and shikhara.
- **Features** include a shikhara with miniature replica spires (kuta-stambhas), lata (corner bands), and a five-projection plan with five tiers of kuta-stambhas.

Panchayatana Type

- A **central, principal shrine** is surrounded by **four smaller subsidiary shrines,** creating a complex of exactly five shrines.

About Parmara Dynasty

- **Origin:** Believed to have originated from the **Agnivanshi Rajputs**, a warrior class claiming divine ancestry.
- **Founder:** It was founded in the early ninth century by **Upendra (Krishanaraja).** Siyaka II made it an independent kingdom. After defeating Rashtrakuta King Khotigga, Siyaka II succeeded the Rashtrakutas of Manykheta.
- **Extent of Kingdom:** The **Paramara Kingdom** had its main capitals at **Ujjain** and **Dhara (Dharanagari)**. At its peak, it extended from **Kota-Bundi (north)** to the **Godavari region and Khandesh (south)**, from **Bhilsa-Hoshangabad-Sagar (east)** to the **Mahi River (west)**, covering much of present-day **Malwa and adjoining regions**.
- **Temple Architecture**: **Bhumija style** of temple-architecture. Most of the Paramara temples are of the **Panchayatana type**.

8.2. PADMA AWARDS 2026

Why in the news?

The President of India presented **Padma Awards for the year 2026** at the Civil Investiture Ceremony-I held at **Rashtrapati Bhavan recently.**

About Padma Awards

- **Instituted:** In 1954, they are **one of the highest civilian Awards of country**.
  - Initially, Padma Vibhushan had **three classes** which were renamed as **Padma Vibhushan, Padma Bhushan, and Padma Shri in 1955.**
  - Padma Awards are **not titles under Article 18** and **cannot be used with names.**
  - The awards recognize distinguished **achievements and public service** across various fields such as **arts, science, literature, sports, medicine, social work, and public affairs**.
- **Conferred by**: President in three categories:
  - **Padma Vibhushan**: For exceptional and distinguished service.
  - **Padma Bhushan**: For distinguished service of high order.
  - **Padma Shri**: For distinguished service.
- **Eligibility**
  - Open to all persons **irrespective of race, occupation, position, or gender.**
  - Government servants including PSUs are **not eligible, except doctors and scientists.**
  - Normally **not conferred posthumously** however, in highly deserving cases, it is awarded posthumously.
- **Selection Process**
  - Nominations, **including self-nominations**, are open to the public.
- **Padma Awards Committee**: Constituted every year by the Prime Minister, it is headed by the **Cabinet Secretary and includes Home Secretary, Secretary to the President** and **four to six eminent persons** as members.
  - The recommendations of the committee are **submitted** to the **Prime Minister and the President of India for approval.**

Conclusion

The Padma Awards embody the nation's recognition of **excellence, selfless service, and extraordinary contributions** across diverse fields. By honouring individuals from all sections of society through a **transparent and inclusive process**, they strengthen the values of **merit, national unity, and public service**, inspiring future generations to contribute to nation-building.

8.3. NEWS IN SHORTS

8.3.1. 75TH ANNIVERSARY OF REOPENING OF SOMNATH TEMPLE

It also marks 1000 years since the first attack on the temple in 1026 A.D by Mahmud Ghazni.

About Somnath Temple

- **One of twelve Aadi Jyotirlingas**.
  - Jyotirlinga means **'column or pillar of light'.**
- **Location:** Prabhas Patan along the Saurashtra coast in Gujarat.
- **Literary Sources:** Dwadasha Jyotirlinga Stotram (Places Somnath first among the twelve Jyotirlingas), Skanda Purana, Prabhasa Khanda, Rig Veda and Bhagavat.
- **Mythology Associated:** Built by Chandra Dev, the Moon God, who worshipped Lord Shiva here to free himself from a curse. Som means Moon. Nath means Lord.
- **Religious Sects Associated:** Shaivism, Vaishnavism, Shaktism.
- **Foreign Travellers Associated:** Mentioned by the Arab traveler Al-Biruni.
- **Architecture: Chalukya style** also called **Kailash Mahameru Prasad Style.**
  - **Features:**
    - **Vesara Style:** Blends Nagara-style with Dravidian-style.
    - **Constituents: Shikhara, Garbhagriha, Sabha Mandap, Nritya Mandap, traditional carvings, a spacious clean courtyard, and Baan Stambh** pointing toward the South Pole.
    - **Material:** Built of sandstone.
- **Restoration:**
  - **12th century:** Kumarapala
  - **13th century:** King of Junagadh
  - **18th century:** Ahilyabai Holkar
  - **1951:** Pran Pratishtha (consecration) done by Dr. Rajendra Prasad.
    - It was initiated by Sardar Patel in 1947.

8.3.2. CHOLA COPPER PLATES

Netherlands returned 11th-Century Chola Copper Plates to India during Prime Minister's State Visit to Netherlands.

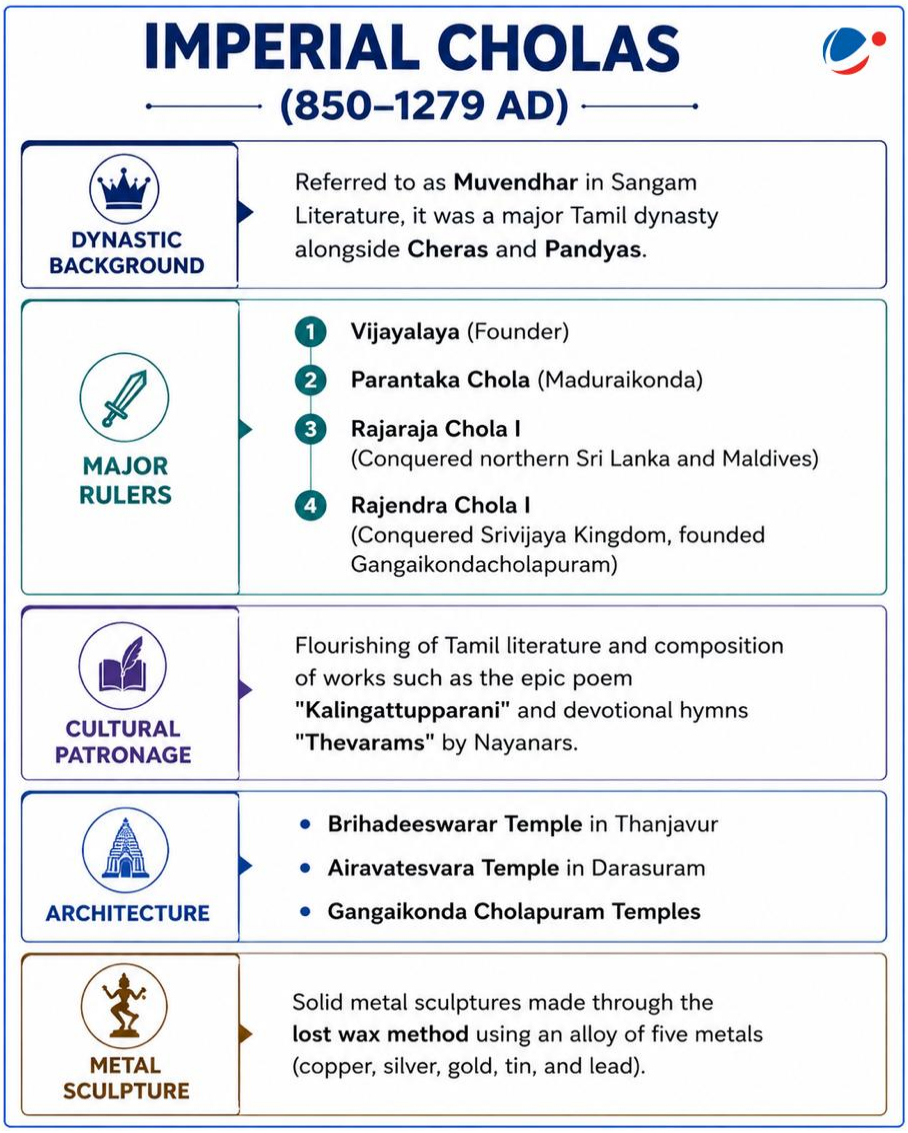
- The artefacts have been in possession of Leiden University and are popularly known as **Leiden copper plates**.
- During the visit, two countries also elevated their relations to **Strategic Partnership**.

About Leiden Copper Plates

- Consists of 21 large and 3 small copper plates fastened with a bronze ring bearing the seal of **Chola king Rajendra Chola I** and another set carrying the seal of **Kulottunga Chola I**.
- **Language**: Tamil and Sanskrit.
- These plates were brought to Netherlands in **1712 from Nagapattinam** by Florentius Camper, a Dutch missionary, associated with **Dutch East Indies Company**.
- **Significance**: Provide insights into Chola Empire's administration, taxation, land reforms, irrigation systems, and trade practices.
  - Records **grant of Anaimangalam village to Buddhist vihara** built by Srivijaya rulers of Southeast Asia, signifying religious harmony and links with Southeast Asia.

About Copper Plate Inscriptions

- Official records **engraved on copper sheets** and usually tied together with a ring bearing the royal seal.
- They usually **recorded grants of land**, lists of royal lineages carrying royal seal, religious grants, donations etc.
- Earliest known copperplate inscription is **Sogaura Copperplate of Mauryan Era** mentioning hunger relief efforts (praktrit language and Brahmi script).
- Majority of the copper plate inscriptions are concentrated in the southern states.



8.3.3. KOREAN WAR

Indian War Memorial inaugurated at Imjingak Park, Seoul (South Korea), in the backdrop of the 75th anniversary of the Korean War.

- It honours the sacrifice and service of the **60 Para Field Ambulance** and **Custodian Force of India.**

About the Korean War

- After World War II, Korea was divided along the 38th Parallel:
  - North Korea (backed by Soviet Union and China)
  - South Korea (supported by USA)
- North Korea invaded the South in 1950, igniting a Cold War proxy conflict.
- A **1953** armistice divided the peninsula at the **38th parallel,** roughly aligning with the Demilitarised Zone.

8.3.4. INTERNATIONAL BOOKER PRIZE

Yang Shuang-zi, Taiwanese writer and author **of 'Taiwan Travelogue'** and translator Lin King win **International Booker Prize 2026**.

About International Booker Prize

- It is awarded annually for a single book, **translated into English** and published in the UK or Ireland.
- It was established in **2005** as the Man Booker International Prize.
- **Indian Winners of International Booker Prize:**
  - **Geetanjali Shree-Tomb of Sand (2022),** translated by Daisy Rockwell. It was the first Hindi work to win this prize.
  - **Banu Mushtaq- Heart Lamp (2025),** translated by Deepa Bhasthi which was the first Kannada work to win this prize.

Note: International Booker Prize is different from Booker Prize which rewards work written in English.

9. ETHICS

9.1. THE ETHICS OF WAGES

Introduction

Massive protests by industrial and garment workers in Noida demanding wage parity with neighboring states have highlighted regional wage asymmetries. It has hastened the government's search for a unified National Floor Wage Rate. The Noida unrest is not an isolated breakdown of public order; it is a moral indictment of a system that treats wages as a cost to minimize rather than a dignity to uphold.

Why Wages Are an Ethical Issue, Not Just an Economic One?

Multi-Dimensional Ethical Analysis		
Ethical Dimension	**Issue at Stake**	**Principle Violated**
Dignity of Labour	12-hour, 7-day shifts for ₹11,000/month reduce workers to instruments of production, not human beings with inherent worth	Kantian ethics by treating human capital as mere means; Art. 21 right to dignified life
Distributive Justice	Workers create value but receive a disproportionately small share; corporate profits vs worker wages gap widening	Rawlsian justice by lack of **objectivity and fairness** in wealth distribution (difference principle); Art. 39(d)
Corporate Ethics	Employers denying PF/ESIC, unpaid overtime, no appointment letters violating both legal and moral duties of care to employees	Stakeholder ethics; CSR norms; fiduciary duty to workforce. Under **Gandhi's Trusteeship principle** they are to prioritize workforce welfare
State Ethics	Government's failure to enforce existing labour laws reflects abdication of its constitutional duty as welfare state guardian	Art. 41, 43 DPSPs; duty of care of the state. **Utilitarian** perspective (Bentham/Mill), ignoring systemic exploitation minimizes aggregate societal welfare,
Ethics of Migration	Migrant workers face double vulnerability — far from social networks, unorganised, unable to unionize; exploitable due to desperation	Ethics of care; special obligations to the vulnerable

Different Stakeholders and associated ethical concerns

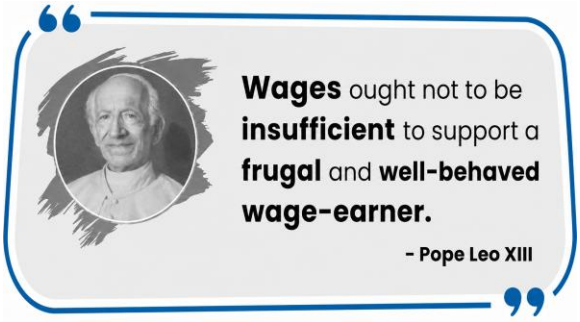
Stakeholder with Interest	Concerns
Workers / Migrant Labourers Seek living wages, dignity, agency, and statutory benefits.	Face exhaustive shifts, starvation wages, marginalization, and exclusion from collective bargaining.
Corporations / Employers Profit generation and workforce management.	Prioritize profit over welfare; commit systemic wage theft; contradict CSR efforts by denying fair wages.
The State / Government Enforce labor laws and uphold the Social Contract.	Severe enforcement gaps, reactive governance, diluting laws for investment, and delayed National Floor Wage implementation.
Trade Unions Facilitate collective bargaining and wage negotiation.	Declining density, high recognition thresholds, and lack of whistleblower protection.
Gig Platforms	Exploit regulatory "grey zones" to bypass traditional wage regulations.

Engage flexible workers outside traditional employment.	
Civil Servants / District Administration Monitor grievances and facilitate employer-worker dialogue.	Reactive rather than proactive; often intervene only after conflicts erupt.
Society / Public Benefit from economic growth and societal welfare.	Ignore worker exploitation during economic growth, creating a moral and ethical crisis.

Challenges in Ensuring Wage Justice

- **Enforcement gap:** India has fewer than 10,000 labour inspectors for 50 crore+ workforce; inspections of informal establishments are rare.
- **Informalisation:** 90% of India's workforce is informal; contractualisation allows employers to sidestep labour protections.
- **Union decline:** Trade union density has fallen sharply; non-unionised migrant workers have no collective voice.
- **Information asymmetry:** Workers often unaware of legal entitlements (PF, ESIC, overtime norms); lack of grievance redressal that is accessible, cheap, and fast.
- **Statutory Evasion**: Denying mandated benefits (PF, ESIC) is severe stakeholder exploitation, not just a regulatory breach.
- **State competition trap:** States in race to attract FDI may informally signal "flexible labour enforcement"; creating a race-to-the-bottom dynamic in worker protections.
- **Gig economy grey zone:** Platform workers fall outside traditional wage regulation; new ethical frontier for the state.
- **The CSR Paradox:** Fulfilling public CSR quotas while denying workers living wages weaponizes philanthropy as a smokescreen for internal exploitation.
- **Empathy Failures:** Low Emotional Intelligence (EI) in governance misses early distress signals, turning manageable labor grievances into violent crises.

Way Forward



- **Constitutional Morality:** Evolving from a minimum wage to a 'living wage' honors the spirit of Article 43 (DPSP), ensuring national economic growth serves holistic human flourishing and true Sarvodaya.
- **Ethics of Care (Gilligan):** The State must transcend rigid legalism, providing active, relational support to unrepresented, marginalized migrant workers.
- **Universal Duty of Care:** Extending portable social security to all employment types (gig, casual, formal) fulfills the welfare state's **ethical obligation** to protect marginalized laborers.
- **Civil Service Probity:** State apathy reveals a deficit in **administrative compassion**. District administrators must act as empathetic mediators, using tripartite forums to balance corporate-labor power asymmetries before conflicts escalate.
- **Corporate Moral Responsibility:** Integrating worker welfare into supply-chain audits and ESG disclosures shifts corporate behavior from basic legal compliance to genuine **ethical stewardship**.
- **Economic Justice:** Delaying a National Floor Wage violates the **social contract**. Implementing a regionally-adjusted, inflation-indexed wage is a categorical **moral imperative** to prevent the commodification of human labor.
- **Worker Agency:** Protecting whistleblowers and unions upholds the freedom of association. Workers are democratic **stakeholders** requiring a voice against systemic exploitation.

Conclusion

The recent workers' unrest holds up a moral mirror to India. True Sarvodaya demands we recognize that fair wages are a civilizational test, not just a line item on a balance sheet. As philosophers from Kant to Gandhi have argued, underpaying workers is a moral failure. India's vision of becoming a developed nation by 2047 will remain hollow if the people building our future cannot afford to live with dignity.

Test Your Learning

You are the District Magistrate (DM) of a rapidly expanding industrial and garment manufacturing hub. For the past week, the district has been paralyzed by massive, unorganized protests by thousands of migrant laborers. They have blocked a major national highway, demanding wage parity with neighboring states and the immediate release of statutory benefits like Provident Fund (PF) and Employee State Insurance (ESIC) which have been systematically denied to them.

The unrest presents a complex web of ethical, administrative, and economic conflicts:

- The primary employers, a consortium of multinational garment manufacturers, argue that operating on thin margins requires strict cost-control to remain globally competitive. They point to their extensive Corporate Social Responsibility (CSR) initiatives as a proof of their ethical standing.
- The State Government has recently issued an unofficial directive to district administrations to adopt a "flexible approach" to labor inspections. With fewer than a dozen labor inspectors for the entire district, inspections are practically non-existent. The state's priority is to attract Foreign Direct Investment (FDI) and outcompete neighboring states, viewing stringent labor compliance as a deterrent to ease of doing business.
- The workers are living in squalid makeshift slums. They endure exhaustive 12-hour shifts for starvation wages. Without recognized trade unions to voice their grievances, their desperation has boiled over into a severe public order crisis. Civil society organizations argue that the state's apathy is a complete betrayal of the workers' dignity and Constitutional Morality.

You are facing immense pressure to use force to clear the highway immediately to reassure foreign investors, while labor rights activists are threatening a nationwide hunger strike if the workers are suppressed.

Based on the scenario above, answer the following questions:

Questions

1. Identify the key stakeholders in this conflict and objectively outline their competing ethical interests.
2. Analyze the CSR Paradox and the commodification of labor in this scenario through the lenses of Kantian Deontology and Rawls's theory of Distributive Justice.
3. Evaluate the ethical implications of the State Competition Trap. How does the state's implicit policy of flexible labor enforcement conflict with the Social Contract?
4. As the District Magistrate, what immediate and long-term actions would you take to resolve this crisis? Justify your approach.

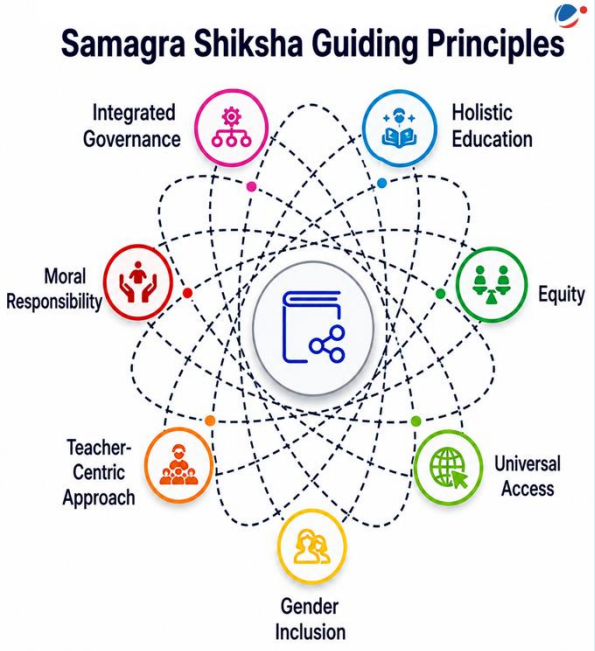
10. SCHEMES IN NEWS

10.1. SAMAGRA SHIKSHA SCHEME

Why in the News?

The Union Government extended the **Samagra Shiksha**, **Integrated Scheme for School Education**, whose term ended on March 31, 2026, till Sept 30 or the date of approval of the scheme for the 16th Finance Commission cycle by the competent authority, whichever is earlier.

Core Objective	Salient Features of the Scheme

• Support implementation of **National Education Policy 2020** recommendations.
• Facilitate implementation of the **RTE Act, 2009**.
• Strengthen **Early Childhood Care and Education** (ECCE).
• Promote **Foundational Literacy and Numeracy** (FLN).
• Foster holistic, inclusive, activity-based learning and 21st-century skills.
• Improve quality of education and learning outcomes.
• Bridge **social and gender gaps** in school education.
• Ensure **equity and inclusion** at all levels.
• Strengthen State Councils for Educational Research and Training (SCERTs)/State Institutes of Education and District Institutes for Education and Training (DIET).
• Provide a safe, secure, and conducive learning environment.
• Promote **vocational education and skill development**.
	About Samagra Shiksha Scheme
	• **Launch Year:** 2018.
	• **Ministry:** Ministry of Education
	• **Aim:** To universalize access to school education; to promote equity through the inclusion of disadvantaged groups and weaker sections, and to improve the quality of education across all levels of school education from pre-primary to class XII.
	• **Type:** Centrally Sponsored Scheme.
	• **Implementing agency:**
	  ○ **State Level**: State Implementation Society (SIS) at the State/UT level.
	  ○ **National Level**: Governing Council (GC) headed by Minister of Education and a Project Approval Board (PAB) headed by Secretary, Department of School Education and Literacy.
	• **Fund Sharing Pattern:**
	  ○ **NE & Himalayan States**: 90:10 sharing between Centre and States.
	  ○ **Union Territories without a legislature**: 100% Central assistance.
	  ○ **All Other States**: 60:40 sharing between Centre and States.
	• It subsumed the erstwhile Sarva Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan, and Teacher Education Scheme.
	  ○ **Sarva Shiksha Abhiyan**: Universalizes elementary education with infrastructure support per RTE Act, 2009.
	  ○ **Rashtriya Madhyamik Shiksha Abhiyan (RMSA)**: Enhances access and quality of secondary education.
	  ○ **Teacher Education Scheme**: Develops infrastructure for teacher training and academic support for elementary and secondary schools.
	• **Coverage:** The scheme covers 11 lakh 60 thousand schools, more than 15 crore 56 lakh students and 57 lakh teachers from government and government-aided schools.
	 

	Key Interventions:
	• **Universalising access to quality education:** By provision for new/ upgradation of schools from pre-primary to senior secondary level.
	• **Focus on Girl Education**: Upgradation of Kasturba Gandhi Balika Vidyalayas (KGBVs).
	• **Inclusive Education**: Supporting Children with Special Needs (CWSN) in schools at all levels Classes-I to XII.
	• **Nipun Bharat (National Mission on Foundational Literacy and Numeracy)** has been launched under the scheme.
	• **Strengthening of Teacher Education and Training:**
	  ○ Specific training modules **under NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement) scheme** of National Council of Educational Research and Training (NCERT) for training secondary teachers and primary teachers.
	• **Innovation:**
	  ○ Support for the activities of **National Assessment Centre, PARAKH** (Performance, Assessment, Review and Analysis of Knowledge for Holistic Development).
	  ○ Provision for **qualitative and innovative interventions** such as Holistic Progress Card (HPC), sports grant, library grant etc.
	  ○ **Appointment of language teachers** has been added to the scheme.
	• **Digital Initiatives**: Information Communication and Training (ICT) laboratory, smart classrooms with digital boards, virtual classrooms etc.

10.2. PRADHAN MANTRI POSHAN SHAKTI NIRMAN (PM POSHAN) SCHEME

Why in the News?

The Union Government extended the **PM POSHAN** Scheme, whose term ended on March 31, 2026, till Sept 30 or the date of approval of the scheme for the 16th Finance Commission cycle by the competent authority, whichever is earlier.

Core Objective	Salient Features of the Scheme

• Improving **the nutritional status** of eligible children in Government and Government aided schools.
• Encouraging the poor children, coming from the disadvantaged sections, to **attend school** more regularly and help them concentrate on classroom activities.
• Providing **nutritional support** to the children of elementary stage in drought-affected during summers as
	About PM POSHAN (Formerly Mid-Day Meal Scheme)
	• One of the **world's largest school nutrition programs**.
	• **Launch year:** 2021.
	• **Genesis:**
	  ○ National Programme of Nutritional Support to Primary Education (1995).
	  ○ Transformed into Mid-Day Meal Scheme (2004).
	• **Type:** Centrally Sponsored Scheme (Central state sharing 60:40)
	• **Ministry**: Ministry of Education
	• **Budget Estimate**: Rs. 12,500 crore FY26.
	• **Aim**: Provide one hot cooked meal in Government and Government-aided schools.
	• **Features under PM POSHAN Scheme**
	  ○ **Inclusion of Balvatika:** Hot cooked meals extended to Balvatika (pre-Class I) children along with students of Classes I–VIII in Government and Government-aided schools.
	  ○ **Tithi Bhojan:** Community participation through provision of special meals on festivals and significant occasions.
	  ○ **School Nutrition Gardens:** Promotion of school gardens to improve nutrition awareness and practical learning.

well as disaster affected areas. • Providing an important source of **employment for women.** • Helps to **undermine caste prejudice**, by teaching children to sit together and share a common meal. • Reducing gender gap in school participation.	○ **Social Audit:** Mandatory social audits in all districts to ensure transparency, equity and accountability. ○ **Vocal for Local:** Encourages locally suitable menus and procurement from FPOs and Women SHGs. ○ **Special Focus:** Supplementary nutrition for aspirational, tribal and high-malnutrition districts. ○ **Disaster Management:** Provision of hot cooked meals or Food Security Allowance during disaster-induced school closures. • **Coverage:** The scheme benefits approximately more than 11.80 crore children across 11.20 lakh schools throughout India. ○ It is one of the many schemes under the umbrella scheme **"Integrated Child Development Services Scheme (ICDS)" which includes:** > Anganwadi Services Scheme > Pradhan Mantri Matru Vandana Yojana > Scheme for Adolescent Girls • **Nutrition Norms:** ○ Primary (Class 1-5): > Calories: 450 kcal > Protein: 12 grams ○ Upper Primary (Class 6-8): > Calories: 700 kcal > Protein: 20 grams • **Food Composition:** ○ Primary: > Food grains: 100 g > Pulses: 20 g > Vegetables: 50 g > Oil & fat: 5 g ○ Upper Primary: > Food grains: 150 g > Pulses: 30 g > Vegetables: 75 g > Oil & fat: 7.5 g

10.3. RASHTRIYA BAL SWASTHYA KARYAKRAM

Why in the News?

The Ministry of Health and Family Welfare recently released the **Rashtriya Bal Swasthya Karyakram (RBSK) 2.0 Guidelines**.

Objectives of the Scheme	Salient Features of the Scheme
• **Early Identification & Intervention:** Early detection and treatment of the 4Ds—Defects at birth, Diseases, Deficiencies, and	• **Origin:** Launched in **February 2013** • **Ministry:** Ministry of Health and Family Welfare (MoHFW) • **Rashtriya Bal Swasthya Karyakram (RBSK)** is a program for early identification of selected health conditions and linking them for medical and surgical management, thereby providing comprehensive care for children in the community. ○ RBSK 2.0 covers **38 common health conditions for early detection**, free treatment, and necessary interventions, including surgeries at tertiary levels. • **Implementing Agency:** National Health Mission (NHM) • **Target group:** Children from **birth to 18 years of age** • **Key Highlights of RBSK 2.0 Guidelines**

Developmental Delays (including disabilities)

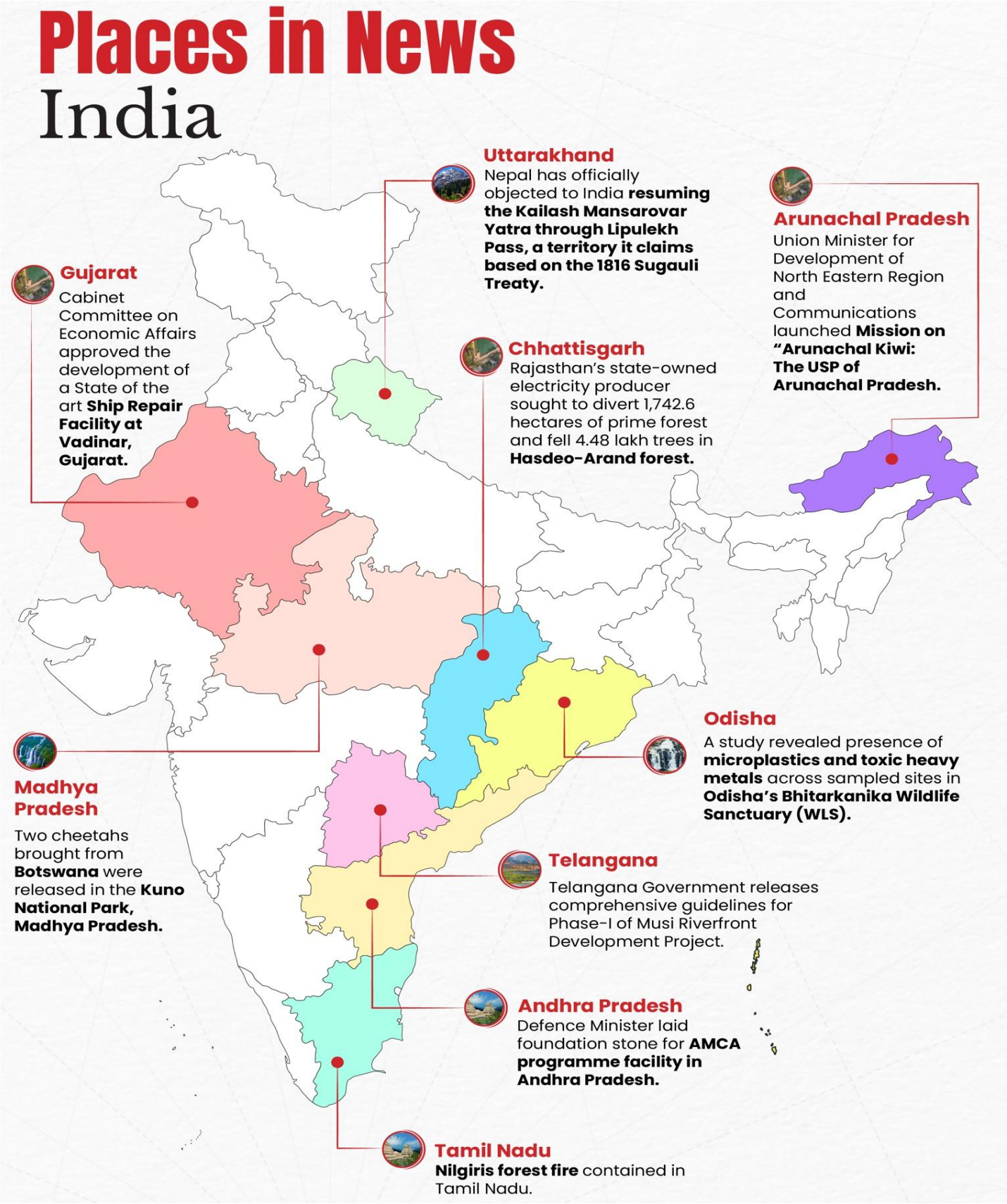
- **Comprehensive Care:** Provides preventive, promotive, and curative healthcare for children
- **Holistic Development:** Ensures child survival, growth, development, and improved quality of life
- **Economic Relief:** Reduces out-of-pocket expenditure through timely intervention and disease prevention.

- **Expanded Scope Beyond 4Ds:** Incorporating **new-age health challenges**, including **mental health conditions, behavioural concerns,** and risk factors for **non-communicable diseases (NCDs)** like diabetes and hypertension alongside the traditional 4Ds.
- **Screening Platforms** Screening is conducted continuously across a child's development at specific locations:
  - **Delivery Points:** Newborns from birth to 6 weeks.
  - **Anganwadi Centres:** Preschool children from 6 weeks to 6 years.
  - **Government & Government-Aided Schools:** Students from 6 to 18 years.
- **Strengthened referral linkages**: Emphasize strengthened referral linkages and continuity of care, with clearly defined pathways from community-level screening to facility-based diagnosis and treatment.
  - **District Early Intervention Centers (DEIC):** Comprehensive management under one roof
  - **Tertiary Care:** Including surgical management, Cochlear implants provided under RBSK by NHM.
- **Expanded Scope of Secondary & Tertiary Care:** It is envisioned with a structured hub-and-spoke model to enable specialist services reach children at all levels.
- **Digitalization & Tracking:** Introduces digital health cards, real-time monitoring, and referral tracking systems.
- **Health card concept:** Introduction of longitudinal "Health Card" linked with child tracking (report card concept)
- **Multi-Sectoral Convergence:** Integrates health, education, and women & child development systems through schools and Anganwadi Centres.
- **Others**
  - Social and Behaviour Change Communication (SBCC) with Participatory Care
  - Early education and concept building among children regarding healthy and unhealthy practices.
  - Promotes active involvement of children, families, schools, and communities in the continuum of care and adoption of healthy practices at home.

RBSK 2.0

Component	Description
Community & Family Participation	Engaged shared responsibility
Adoption of 4D Approach (Expanded Scope)	Expanded condition tracking
Strengthened Human Resources & Flexible Service Delivery	Enhanced staffing and reach
Screening, Referral & Financial Protection	Affordable access
Digital Tracking, Monitoring & Accountability	Real-time data systems
Whole-of-Government Convergence	Multi-sector collaboration
Behaviour Change & IEC Strengthening	Health ownership messages
Addressing Social & Lifestyle Determinants	Healthy habits focus
Early Health Education & Concept Building	Teaching foundational concepts

11. PLACES IN NEWS



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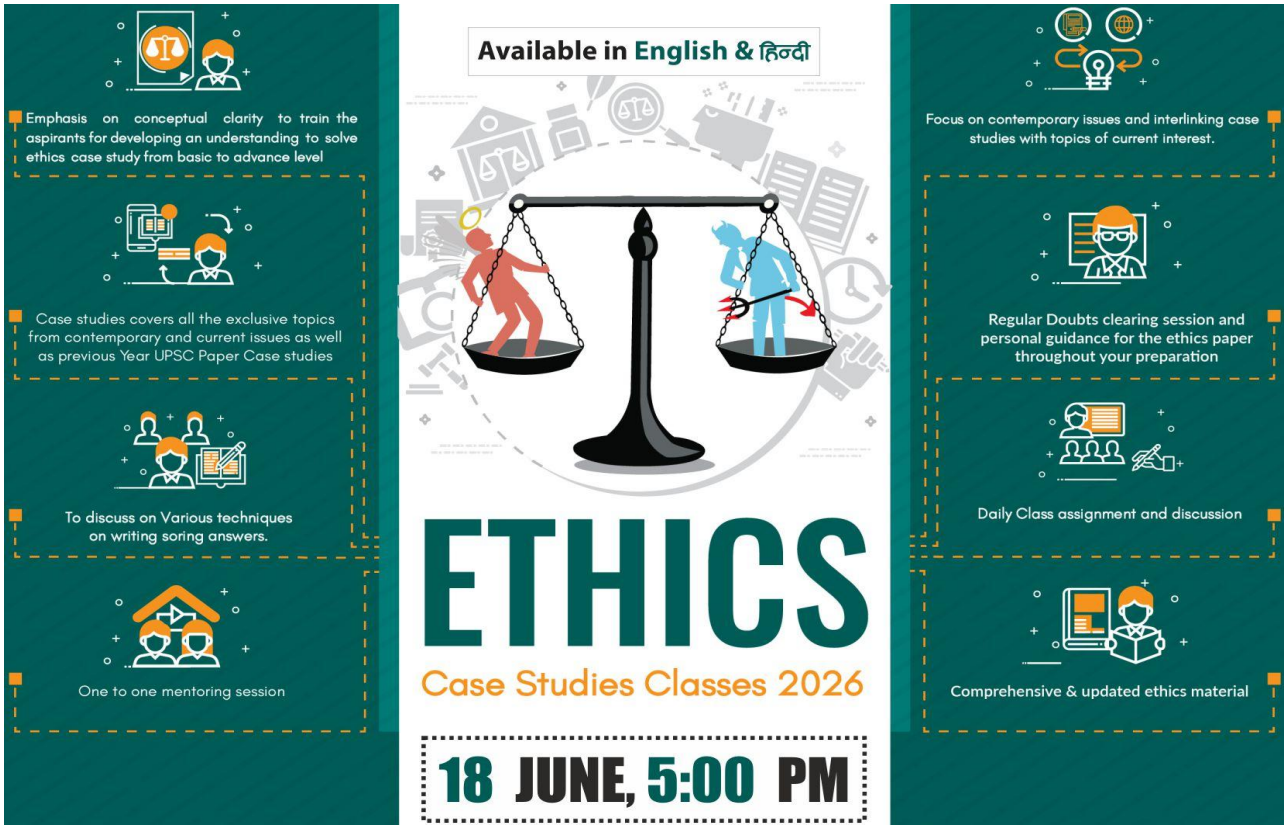

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