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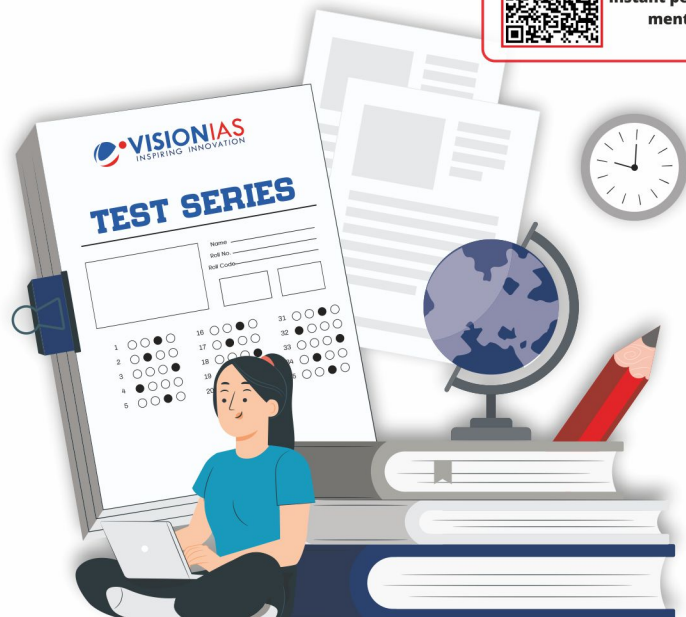
• **General Studies** (हिन्दी माध्यम में भी उपलब्ध)

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2027

**ENGLISH MEDIUM
5 JULY**

**हिन्दी माध्यम
5 जुलाई**

Table of Contents

1. POLITY AND GOVERNANCE	4	3.8. News in Short	36
1.1. Inter-States River Disputes	4	3.8.1. First Global Treaty to Set Binding Labour Standards for Gig Work	36
1.2. UK Parliamentary System Comparison with India	6	3.8.2. CAG releases State Finances 2024-25 Report	37
1.3. News in Shorts	7	3.8.3. Base Year Revision of the All India Index of Industrial Production (IIP)	38
1.3.1. National e-Governance Service Delivery Assessment (NeSDA)	7	3.8.4. Wholesale Price Index (WPI)	38
1.3.2. DISHA 2.0 (Designing Innovative Solutions for Holistic Access to Justice)	7	3.8.5. District Domestic Product (DDP)	39
1.3.3. Right to Trauma Care	8	3.8.6. Development Policy Financing (DPF)	39
1.3.4. Right To Be Forgotten	8	3.8.7. Global Economic Prospects 2026	39
1.3.5. Right to Walk	8	3.8.8. Global Unicorn Index 2026	39
1.3.6. Proof of Citizenship	9	3.8.9. SARTHAK-PDS	40
1.3.7. Foreign Contribution (Regulation) Act (FCRA), 2010	9	3.8.10. Smart Warehousing System	40
1.3.8. COSP19 UNCRPD	9	3.8.11. Mission Senehgori- Assam Muga Silk USP	41
2. INTERNATIONAL RELATIONS	11	3.8.12. Queen Pineapple Mission and Pineapple	41
2.1. Quadrilateral Security Dialogue (QUAD)	11	3.8.13. National Seed Reserve (NSR)	42
2.2. BRICS	13	3.8.14. Community Seed Banks	42
2.3. India-France Innovation Roadmap 2030	15	3.8.15. State of World Fisheries and Aquaculture (SOFIA) 2026 Report	42
2.4. News in Shorts	16	3.8.16. FCNR(B) Deposit	43
2.4.1. G7 Leaders' Summit	16	3.8.17. REITs and InvITs	43
2.4.2. India-US Sign Framework for Cooperation in Critical and Rare earths Minerals	17	3.8.18. Zero Coupon Zero Principal (ZCZP) Instrument	44
2.4.3. India-UK Critical Minerals Global Supply Chain Observatory	18	3.8.19. Trade Receivables Discounting System (TReDS)	44
2.4.4. India-Myanmar	18	3.8.20. CGSMFI-2.0	44
2.4.5. India-Oman Comprehensive Economic Partnership Agreement (CEPA)	18	3.8.21. Drunix	44
2.4.6. India-Venezuela	18	3.8.22. Blue Bonds	45
2.4.7. Future of India-Middle East-Europe Economic Corridor (IMEC) amid the Middle Eastern War	19	3.8.23. Price Stabilisation Fund	45
2.4.8. CPEC	20	4. SECURITY	46
2.4.9. Global Alliance for Human Rights	20	4.1. Multi-Layered Ballistic Missile Defence (BMD) And Anti-Ship Missile-Medium Range (NASM-MR)	46
2.4.10. Global Peace Index	21	4.2. Technology-Driven Warfare	47
2.4.11. Areas in News	21	4.3. Illegal imMIgration	49
3. ECONOMY	22	4.4. News in Shorts	51
3.1. India's Middle Class	22	4.4.1. Stockholm International Peace Research Institute (SIPRI) Yearbook 2026	51
3.2. Government Securities (G-Sec)	23	4.4.2. Shangri-La Dialogue	52
3.3. Insolvency and Bankruptcy Code (IBC), 2016	25	4.4.3. Netra Airborne Early Warning and Control (AEW&C) system	52
3.4. Asset Reconstruction Companies	27	4.4.4. Military Equipments in News	52
3.5. Shipping Sector in India	30	4.4.5. Exercises in News	53
3.6. Pradhan Mantri Kaushal Vikas Yojana (PMKVY)	32	5. ENVIRONMENT	54
3.7. A Decade of Tourism-Led Growth	34	5.1. Access and Benefit Sharing (ABS) Framework	54
		5.2. Global Chemicals Monitoring Programme (GCMP)	56

5.3. News in Shorts	58	6.5.5. Human Trafficking in India	75
5.3.1. New Climate Goals Announced	58	6.5.6. Global Trends Report: Forced Displacement in 2025	76
5.3.2. Joint Crediting Mechanism	58		
5.3.3. Global Annual to Decadal Climate Update (2024-2028)	59	7. SCIENCE AND TECHNOLOGY	78
5.3.4. Turquoise Nexus Initiative	59	7.1. Flex Fuel Vehicles	78
5.3.5. Energy Transition Index	59	7.2. Battery Energy Storage System (BESS)	80
5.3.6. Floating Solar Energy in India	60	7.3. Green Hydrogen	82
5.3.7. India's First Commercial-Scale Coal-to-Ammonium Nitrate Project	60	7.4. India's Semiconductor Ecosystem	84
5.3.8. Call to Action on Methane	60	7.5. News in Shorts	87
5.3.9. India's 100th Ramsar site	61	7.5.1. Emerging Power of Synthetic Biology	87
5.3.10. Species In News	62	7.5.2. IMI-Resistant Mustard Hybrids	87
5.3.11. Coral Translocation in Great Nicobar Island	62	7.5.3. Smart Seed Coating Technology	88
5.3.12. Potato Patch	63	7.5.4. SkyCast System	88
5.3.13. 3D-Printed Artificial Reefs	63	7.5.5. James Webb Space Telescope	89
5.3.14. Seismic Doublet	63	7.5.6. ANCHOR: Atlas of Neurochemical Characterization of the Human brainstem with 3D Reconstruction	89
5.3.15. Dam Projects in News	64	7.5.7. Fibre-Optic Drones	89
6. SOCIAL ISSUES	65	7.5.8. BGP hijacking	89
6.1. Decoding the Global Wave of Youth Protests	65	7.5.9. UNGA Political Declaration on HIV/AIDS	90
6.2. Universal Health Coverage through Digital Health	66	8. CULTURE	91
6.3. National Family Health Survey – 6	68	8.1. Harappan Artefacts	91
6.4. Pradhan Mantri Surakshit Matritva Abhiyan	71	8.2. Gyan Bharatam Mission	94
6.5. News in Shorts	73	8.3. News in Shorts	96
6.5.1. Interim Report of National Task Force (NTF) Concerning Student's Mental Health	73	8.3.1. GI tags	96
6.5.2. National Health Accounts (NHA) Estimates for India 2022-23	73	8.3.2. Xuanzang (Hiuen Tsang)	97
6.5.3. Parliamentary Standing Committee Report on "Teacher Education"	74	8.3.3. Udant Martand	97
6.5.4. Parliamentary Standing Committee on Education, Women, Children, Youth and Sports released its report on Higher Education	74	8.3.4. Sangeet Natak Akademi	97
		8.3.5. Gallantry Awards	98
		9. SCHEMES IN NEWS	99
		9.1. AB-PMJAY	99
		10. PLACES IN NEWS	101



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NOTE:

Dear Students,

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



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



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



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



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

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1. POLITY AND GOVERNANCE

1.1. INTER-STATES RIVER DISPUTES

Why in News?

Central Government has decided to constitute a **High-Level Committee** to resolve water sharing problems between 3 southern States- **Telangana, Andhra Pradesh and Karnataka across Tungabhadra River.**

About the Dispute over Tungabhadra River

- **Upper Bhadra Project (Karnataka):** Located on upstream of the **Tungabhadra Dam**, Karnataka, the project faces objections from Andhra and Telangana over water impoundment affecting supplies to downstream canals.
 - **Tungabhadra Board** under oversees project and regulates water supplies to these States in line with order of Krishna Water Disputes Tribunal.
- **Rajolibanda Diversion Scheme (RDS):** Telangana expressed concern over its inability to get the share of its allocated water under the scheme due to silt accumulation, structural impediments etc.
 - **RDS canal** is an interstate project of Karnataka and Telangana states in Raichur district, Karnataka
 - **Tummilla Lift Irrigation Scheme** and expansion of **Mallammakunta Reservoir** are devised by Telangana to offset water deficits under RDS.

About Tungabhadra River (Ancient name: Pampa)

- **Origin:** It is formed by the confluence of **Tunga**, and **Bhadra** at Shimoga, Karnataka both of which rise in the **Western Ghats**
- **Course:** Flows majorly in Karnataka, then forms boundary between Karnataka and Andhra Pradesh, before joining the Krishna as a right bank tributary at Sangamaleshwaram in Andhra Pradesh.
- **Major Sites:** Hampi (a UNESCO World Heritage Site), Hospet (Karnataka), Kurnool (Andhra), Shimoga, Harihareshwara temple at Harihara, Alampur, (Navabrahma and Jogulamba, Temple) etc.
- **Major tributaries:** Varada (left bank), Vedavathi (Right Bank).
- **Major Projects:** Tungabhadra dam, RDS Anicut, Sunkesula Anicut, Bhadra dam etc.

Inter-States River Disputes: Constitutional and legal provision

- **Distribution of power as per 7th schedule of constitution:** Power to legislate on **water supplies, irrigation, canals, drainage, embankments, water storage, and water** is under **state list**, but is subject to the Union's **power** to regulate and develop **interstate rivers** and river valleys, which lies under **Union List**
- **Article 262:** Empowers Parliament to adjudicate by law any dispute concerning of interstate waters and even to exclude the jurisdiction of the Supreme Court and all other courts.
- Exercising its power under the **Article 262** of the Constitution Parliament has enacted two laws-
 - **Inter-State River Water Disputes (ISRWD) Act, 1956:** For

MAJOR INTER-STATE RIVER DISPUTES

RIVER(S)	STATES
 Ravi and Beas	Punjab, Haryana, Rajasthan
 Narmada	Madhya Pradesh, Gujarat, Maharashtra, Rajasthan
 Krishna	Maharashtra, Andhra Pradesh, Karnataka, Telangana
 Vamsadhara	Andhra Pradesh & Odisha
 Cauvery	Kerala, Karnataka, Tamil Nadu and Puducherry
 Godavari	Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh, Odisha
 Mahanadi	Chhattisgarh, Odisha
 Mahadayi	Goa, Maharashtra, Karnataka
 Periyar	Tamil Nadu, Kerala

establishment of ad-hoc tribunals to resolve conflicts when they can't be resolved by negotiations or when state approaches.

- **2002 Amendment:** Mandated a 1-year limit for setting up tribunal and a 3-year for delivering award.
- **River Boards Act, 1956:** Allows Union to make boards for the integrated development of interstate basins.
 - However, no river board has ever been constituted under it.

Evolving Role of Judiciary in Interstate water disputes

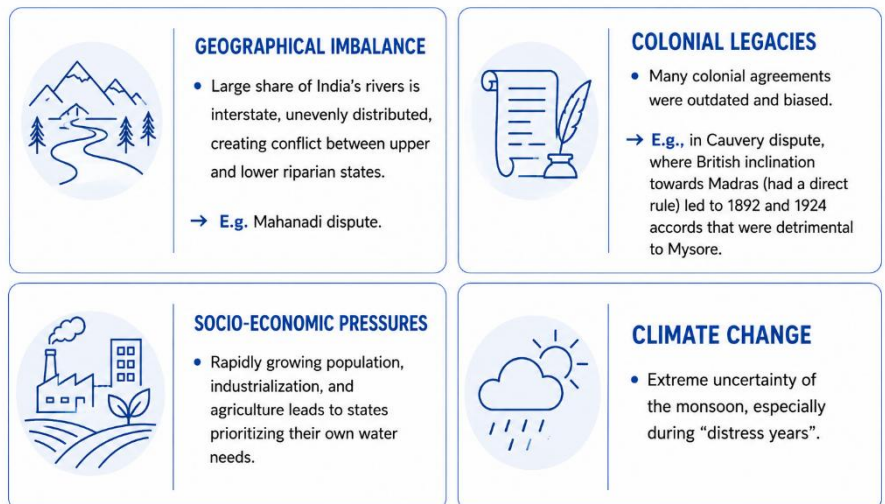
- **Supreme Court** has intervened when it sees procedural or constitutional issues, using **article 131** (original jurisdiction in disputes between states) and **article 136** (special leave Petitions)
 - E.g. It heard appeals and even reversed the order of river dispute tribunal in **Cauvery Dispute** (Kerala, Tamil Nadu, Pondicherry and Karnataka) using article 136.
- **Important cases:**
 - **State of Orissa v. Government of India:** Court ruled that the jurisdictional bar does not operate if the Central Government fails to constitute a tribunal within the stipulated period.
 - **Mullaperiyar Dam case:** Court clarified that disputes concerning the safety of a dam (e.g., raising water levels) are not strictly "water disputes" under the ISRWD Act.
 - **Mullaperiyar Dam** is on **Periyar river, Kerala** (concerned over safety) but operated by Tamil Nadu.
 - **State of Andhra Pradesh v. Karnataka:** while court cannot adjudicate a primary water dispute already before a tribunal, it has the power to interpret tribunal awards.
 - **State of Tamil Nadu vs. State of Karnataka (2018):** SC modified the award of the tribunal on the matter allocating of water, ending dispute between the four states, i.e., Karnataka, Tamil Nadu, Kerala and the union territory of Puducherry.
 - It also mandated the constitution of Cauvery River Management Board under the official gazette.

Challenges in resolution

Finite Resources: India holds ~ 18% of global population but only about 4% of the world's water resources.

- **Lack of Reliable Data:** Decisions are often hindered by a lack of universally agreed-upon water data, as states may be reluctant to share hydrological information for political reasons.
- **Delays:**
 - **Constitution of tribunals:** E.g. Initial requests in **Godavari water dispute** (Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh & Odisha) were made in 1962 and tribunal was constituted in 1969.
 - **Award Notifications:** Delays in publishing tribunal orders in the Official Gazette (e.g., Krishna: 3 years, Godavari: 1 year) lead to uncertainty in enforcement.
- **Ineffective Enforcement:** Tribunal awards are final and binding but lack contempt/enforcement powers and mechanism to review the ruling, prompting judicial intervention.
 - E.g. **Mahadayi dispute** (Goa, Maharashtra, Karnataka) where Goa challenged the tribunal's order (**article 136**) and then had to file contempt petition against Karnataka accusing it to continue with **Kalasa and Banduri Nalas** despite the case pending.

— FACTORS RESPONSIBLE FOR THE DISPUTES —



- **Non-Inclusive Approach:** E.g. In **Narmada dispute** (MP, Gujarat, Maharashtra and Rajasthan) tribunal delivered its award, allocating water while laying down the framework for Sardar Sarovar Dam without stakeholder consultation causing severe protests.

Way Forward

- **Implementation of the ISRWD (Amendment) Bill, 2019:** To replace individual ad-hoc tribunals with a Single Permanent Tribunal with multiple benches to expedite the process.
 - It also suggests the creation of a Dispute Resolution Committee (DRC) for time-bound, mediated agreements before adjudication
- **Strengthening Cooperative Federalism:** Utilizing the **Inter-State Council** under **Article 263** can provide a vital institutional space for defusing tensions and facilitating negotiation
- **Establishing a National Data Repository:** Creating a transparent national data bank and information system for each river basin is a key priority to ensure that decisions are based on robust scientific evidence
- **Adopting an Integrated Basin-Wide Approach:** It can help balance competing demands while considering ecological sustainability. For e.g. Australia's **Murray-Darling Basin Authority** and the **Tennessee Valley Authority**
- **Stakeholder Participation:** Future mechanisms must include civil society dialogue and stakeholder engagement to ensure that the voices of those directly dependent on the rivers are heard.
- **Legal Clarity:** There is a need to constitutionally validate the Supreme Court's power to hear appeals against tribunal awards to eliminate current institutional ambiguities.

Conclusion

Inter-state river water disputes test India's cooperative federalism by balancing state interests with national priorities. Timely dispute resolution, transparent data sharing, stronger institutional mechanisms, and an integrated river basin management approach are essential to ensure equitable, sustainable, and conflict-free utilization of shared water resources.

1.2. UK PARLIAMENTARY SYSTEM COMPARISON WITH INDIA

Why in the News?

British Prime Minister Keir Starmer, the seventh UK Prime Minister in a decade, resigned highlighting key features of the British parliamentary system, with useful comparisons to India's parliamentary democracy.

Similarities between India and the UK System

Basis	Similarity
Form of Government	Both follow the Westminster model of parliamentary democracy , where the executive is drawn from the legislature.
Executive Structure	Both have a nominal Head of State (Monarch/President) and a real executive headed by the Prime Minister .
Bicameral Legislature	Both have a two-house Parliament .
Collective Responsibility	The Council of Ministers is collectively responsible to the lower house and must retain its confidence.

Differences between India and the UK System

Basis	United Kingdom	India
Constitutional Principle	Based on Parliamentary Sovereignty , where Parliament is the supreme law-making authority.	Based on Constitutional Supremacy , where Parliament functions within constitutional limits.

Nature of Constitution	Unwritten , based on conventions, statutes, and judicial decisions.	Written Constitution that is the supreme law of the land.
Prime Minister	Traditionally a member of the House of Commons .	PM or Minister can continue for six months without being a Member of Parliament .
Anti-Defection Law	No anti-defection legislation.	Anti-Defection Law regulates party defections.
Judicial Review	Courts cannot invalidate Acts of Parliament on constitutional grounds.	Judiciary can strike down unconstitutional laws through judicial review.

1.3. NEWS IN SHORTS

1.3.1. NATIONAL E-GOVERNANCE SERVICE DELIVERY ASSESSMENT (NESDA)

Department of Administrative Reforms and Public Grievances (DARPG), Government of India, launched the Portal NeSDA, 2025.

About NeSDA 2025

- It is a **biennial assessment framework by DARPG**.
- Based on** Online Service Index of the UN e-Government Survey.
- Objective:** To measure effectiveness of e-Governance service delivery mechanisms from the citizen's perspective.
- All Government Portals assessed under NeSDA** are classified into two categories, viz., (i) State, UT, City and Central Ministry Portals and (ii) State, UT, City and Central Ministry Service Portals.
- Parameters:** assesses multiple parameters across **availability, accessibility and maturity** of online service delivery across **States, Union Territories and Central Ministries/Departments**.
- Covers:** G2C and G2B services across key sectors.

1.3.2. DISHA 2.0 (DESIGNING INNOVATIVE SOLUTIONS FOR HOLISTIC ACCESS TO JUSTICE)

DISHA 2.0 seeks to expand access to justice by **integrating legal aid, legal awareness and pro bono services** with **digital and AI-enabled delivery systems**.

- DISHA 2.0 builds on the earlier DISHA scheme implemented between 2021 and 2026.
 - DISHA Scheme had achieved a cumulative outreach of over 2.37 crore beneficiaries. (May 2026)

About DISHA 2.0

- Type:** Central Sector Scheme
- Implementation Agency:** Department of Justice, Ministry of Law and Justice
- Duration:** 5 years (1st April 2026 to 31st March 2031)
- Components of DISHA 2.0**
 - Tele-Law:** Provides free pre-litigation legal advice through 2.5 lakh Common Service Centres (CSCs).
 - Nyaya Bandhu:** Promotes a **pro-bono culture** by connecting marginalised citizens eligible under the **Legal Services Authorities Act, 1987**.

Other Digital Initiatives taken to Promote Access to Justice



• E-Courts

Mission Mode Project: Aimed at leveraging Information and Communication Technology (ICT) for the modernization and development of the Indian Judiciary.



• National

Judicial Data Grid: Centralized online repository for judicial data in India.



- AI-assisted tools like **SUPACE** (Supreme Court Portal for Assistance in Court's Efficiency), **SUVAS** (Supreme Court Vidhik Anuvaad Software), etc.

- **Legal Literacy & Awareness (LLLAP):** Spreads legal awareness and literacy through partnerships with Ministries, Departments, Civil Society Organisations (CSOs), etc.
- **VIDHI (Vision for Integrated Delivery of Harmonized Legal Initiatives)-Sanjeevani:** A centralized digital platform introduced as a fourth component for end-to-end programme monitoring and data-driven decision-making.

1.3.3. RIGHT TO TRAUMA CARE

In **SaveLIFE Foundation v. Union of India case**, the Supreme Court recognized the **Right to Trauma Care** as an integral part of **right to life** under **Article 21**.

- SC also direction for improving trauma care such as integration of all emergency helplines into 112, operationalisation of the PM RAHAT cashless treatment scheme and establishment of Good Samaritan grievance redressal systems.
- **Article 21** guarantees the fundamental right to protection of life and personal liberty.
- **Judicial interpretations** have expanded it to include the right to privacy, clean environment, etc.

Why Trauma Care matters?

- India annually records nearly 4.67 lakh accidental deaths (NCRB).
- Nearly half of road-crash fatalities could be avoided with timely medical intervention (**The Law Commission's 201st report**).
- Delays in emergency care contribute to at least 30% of trauma-related deaths. (**NITI Aayog-AIIMS Emergency and Injury Care Report, 2021**).

1.3.4. RIGHT TO BE FORGOTTEN

Delhi High court in '**Laksh Vir Singh Yadav V. Union of India & Ors**' recognized an individual's '**Right To Be Forgotten**' as an integral facet of the **fundamental right to privacy** under **Article 21**.

- **Right to be forgotten:** Right to seek removal or restricted access to personal information from public accessibility that no longer serves legitimate purpose.

Key Highlights of Judgement

- Sets out detailed principles for when **names can be de-indexed or masked in court records**.
 - **De-indexing** (to be operated globally): Removes a person's **name as a searchable key** without deleting the record, limiting access through name-based searches.
 - **Application:** Cases ending in acquittal, discharge, etc.
 - **Exceptions:** It can't be applied in **cases against women, children or breach of public trust**.
 - **Masking:** Replaces names and personal identifiers in judicial records with neutral labels (e.g. XYZ).

1.3.5. RIGHT TO WALK

The Supreme Court in **Maniyar Iliyaz and Shaik Riyaz v. P. Ayyappan & Ors.** held that the **right to walk on safe, demarcated footpaths** is a Fundamental Right under **Part III of the Constitution**.

About the Judgement

- **The Court held that the Right to Walk flows from,**
 - **Article 19(1)(d): Freedom of Movement:** Right to **move freely throughout India**.
 - **Article 21: Right to life and personal liberty:** Guarantees protection of life and personal liberty, **ensuring a life with dignity, safety**.
- **It is also linked to:**
 - **Article 19(1)(a): Freedom of Speech and Expression**
 - **Article 19(1)(b): Freedom of Peaceful Assembly** and without arms
 - **Article 19(1)(c): Freedom to form Associations**, unions, co-operative societies.

1.3.6. PROOF OF CITIZENSHIP

Ministry of External Affairs (MEA) has stated that a passport is primarily a **"travel document"**, not a conclusive proof of citizenship.

- Under **Section 20 of Passports Act**, Centre may **issue passports to non-citizens** in public interest.

Proof of Citizenship

- No Single Document:** India has no universal document as definitive proof of citizenship.
- Aadhaar:** Identity document, **not** proof of citizenship.
- Electoral Roll:** Creates a **presumption of citizenship**, but is not conclusive proof; held in *Lal Babu Hussein v. Electoral Registration Officer (1995)*.
- Citizenship Certificate:** Issued mainly to those acquiring citizenship by **registration or naturalisation**.

1.3.7. FOREIGN CONTRIBUTION (REGULATION) ACT (FCRA), 2010

The Ministry of Home Affairs (MHA) has proposed stricter FCRA rules.

Key Changes in FCRA Rules

- Activity-Based Regulation:** Foreign funds restricted to approved activities under specified categories.
- Geography-Based Compliance:** NGOs can operate only in declared States/UTs.
- Enhanced Transparency:** Mandatory disclosure of social media accounts, websites, publications, and key functionaries.
- Religious activities:** allowed, but proselytisation (religious conversion-related activities) explicitly prohibited.
- Other:**
 - Expanded 'Key Functionary' Definition** (includes trustees, partners, governing body members, directors, etc.)
 - Foreign nationals as key functionaries** generally **ineligible for FCRA registration** (except by government exemption).

About Foreign Contribution (Regulation) Act (FCRA), 2010

- It **regulates the receipt and utilisation of foreign contributions** and hospitality by individuals, associations, and NGOs.
- It aims to ensure that foreign funding does not adversely affect **India's sovereignty, integrity, security, public interest, or democratic institutions**.
- FCRA (Amendment) Act, 2020** strengthened regulation of foreign funding by **banning sub-granting**, reducing the **administrative expense cap to 20%**, and mandating a **designated SBI account** for foreign contributions.

1.3.8. COSP19 UNCRPD

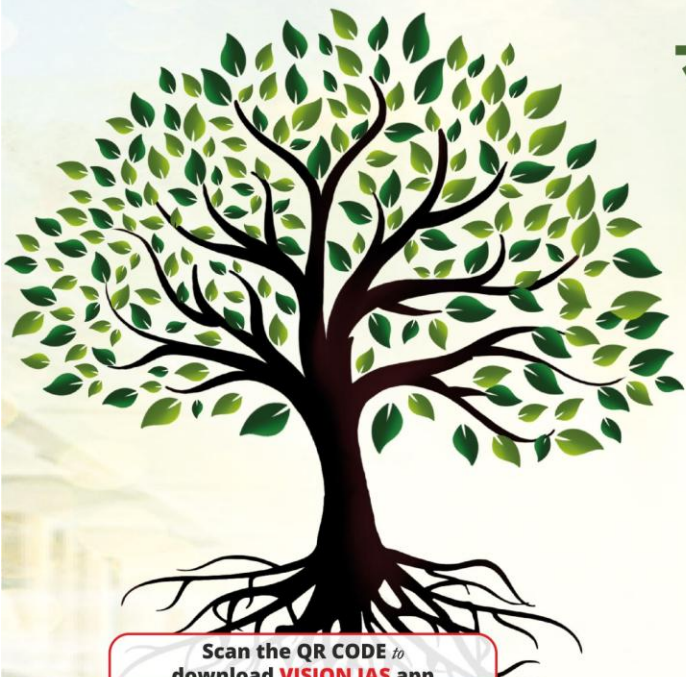
The 19th Session of the Conference of States Parties (COSP19) to the **UN Convention on the Rights of Persons with Disabilities (UNCRPD)** was held in New York.

Key Highlights of the COSP19

- Marked the **20th anniversary** of the UNCRPD, with the theme: **"CRPD at 20: Celebrating and consolidating achievements and shaping the next phase of implementation in a changing world."**
 - COSP** meets **annually** to review implementation of the Convention.
- Built on the outcomes of the Second World Summit for Social Development (Doha, 2025).**
 - A **UN summit** held in **Doha** to **review progress since the 1995 Copenhagen World Summit for Social Development** and adopt the **Doha Political Declaration**.

About UNCRPD (UN Convention on the Rights of Persons with Disabilities)

- **Adopted by the United Nations General Assembly (UNGA): Dec 2006 | In Force: 2008**
- **Nature:** Legally binding international human rights treaty on the rights of persons with disabilities.
- **Objective:** Promote, protect and ensure the **full and equal enjoyment of all human rights and fundamental freedoms** by persons with disabilities.
- **Ratifications/Accessions: 193** (192 States + the European Union)
 - **India ratified the UNCRPD in October 2007**
 - India implemented the UNCRPD through the **Rights of Persons with Disabilities (RPwD) Act, 2016**
 - Expanding recognized disabilities from **7 to 21** and promoting accessibility through the **Accessible India Campaign (Sugamya Bharat Abhiyan)**.
- **Approach:** Rights-based & social model of disability.
- **Core Principles:** Dignity, autonomy, non-discrimination, accessibility, equality & inclusion.
- **Rights Covered:** Civil, political, economic, social & cultural rights.
- **Monitoring Body:** Committee on the Rights of Persons with Disabilities (CRPD Committee).
- **Optional Protocol:** Establishes an **individual complaints mechanism** and inquiry procedure for grave or systematic violations.



फाउंडेशन कोर्स

सामान्य अध्ययन

प्रारंभिक एवं मुख्य परीक्षा 2027

इनोवेटिव क्लासरूम प्रोग्राम

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- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करेंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- प्री फाउंडेशन कक्षाएं
- सीसेट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसेट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

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

DELHI : प्रवेश प्रारंभ

JAIPUR : 10 जुलाई, 3:30 PM

2. INTERNATIONAL RELATIONS

2.1. QUADRILATERAL SECURITY DIALOGUE (QUAD)

Why in the news?

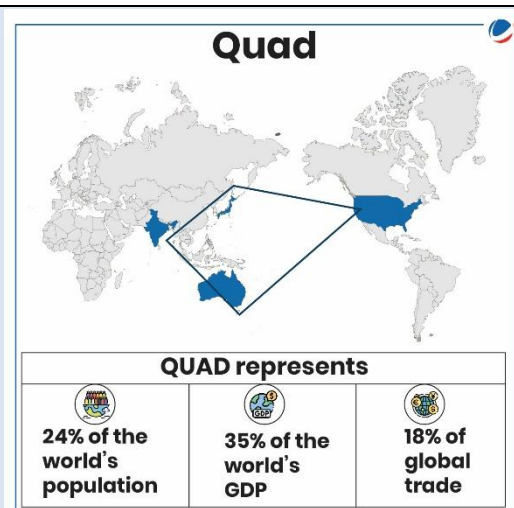
Recently, 11th Quadrilateral Security Dialogue (QUAD) Foreign Ministers' meeting was held in New Delhi.

Key Initiatives Announced

- **Indo-Pacific Initiatives**
 - **Indo-Pacific Connectivity:** Pledged to connect all Pacific Island Forum countries including Fiji via undersea cables by 2026 and committed to advance port infrastructure in Fiji under Quad Ports of Future Partnership.
 - **Indo-Pacific Maritime Surveillance Collaboration (IPMSC) Initiative:** Initially focused on Indian Ocean Region, it enhances real-time information sharing and maritime awareness using QUAD Members' combined surveillance capabilities.
 - **Quad Initiative on Indo-Pacific Energy Security:** Through this initiative, Quad partners will work to identify areas of cooperation in technology, management, policy, international market analysis, and emergency response exercises to ensure open, stable energy markets and diversified supply chains.
- **Quad Critical Minerals Initiative Framework:** It is a \$20 billion critical minerals initiative to coordinate investments in mining, processing, and recycling to strengthen global supply chains.
- **Other Outcomes**
 - **Coast guard led Quad-at-Sea Ship Observer Mission under Wilmington Declaration:** To be hosted by India, after success of 1st mission from Palau to Guam, to address unlawful maritime activities.
 - **Next-Gen Communication Standards collaboration:** Announced, specifically on 6G development.

About QUAD (Quadrilateral Security Dialogue)

- It is an **informal strategic grouping** comprising **India, US, Japan, and Australia**.
- **Origin:** It originated to coordinate **humanitarian assistance after 2004 Indian Ocean Tsunami**.
 - **2007:** Formally proposed as dialogue by then-Japanese PM Shinzo Abe, but went dormant.
 - **2017:** Revived over concerns about challenges to the rules-based order and Indo-Pacific assertiveness.
- **Objective:** Promote an **open, free, stable, inclusive, prosperous, and resilient Indo-Pacific region** based on a rules-based order and international law (including UNCLOS).
- **Working Mechanism:** 6 leader-level working groups on Climate, Critical and Emerging Technologies, Cyber, Health Security Partnership, Infrastructure, and Space.
- **Multilateral exercise:** Exercise Malabar (includes the navies of all four Quad countries, but it is not formally a Quad military exercise.)



Why Quad matters for India?

- **Securing Critical Minerals:** Quad cooperation on critical minerals helps India **reduce dependence on a single supplier** and **strengthens supply chain resilience** for EVs, batteries, semiconductors and clean energy.
- **Maritime Security:** E.g., IPMSC initiative can foster **maritime surveillance** in Indo-Pacific and can **improve India's ability to safeguard Indian Ocean Region** against piracy, illegal fishing etc.
 - E.g. **Maritime Exercise Malabar 2024** strengthens maritime security in Indo-Pacific region.
- **Infrastructure Development:** Quad's focus on ports and maritime infrastructure, including joint projects in the Indo-Pacific, **expands India's connectivity with island nations** and strengthens its MAHASAGAR vision.

- **Digital Connectivity:** Quad's focus on secure subsea cable infrastructure enhances India's digital connectivity, **strengthens digital trade, reduces cyber vulnerabilities**, etc.
- **Energy Security:** E.g., Quad Initiative on Indo-Pacific Energy Security can **strengthen regional energy resilience** through cooperation in clean energy technologies.
- **Humanitarian Assistance & Disaster Relief (HADR):** Quad has strengthened Indo-Pacific resilience by providing over \$50 million for public health capacity building, training healthcare professionals, and enhancing disaster response.
 - E.g. **2025 Honolulu tabletop exercise** and Strategic Working Group can improve coordinated responses to health emergencies and natural disasters.

Challenges faced by QUAD

- **Divergent Strategic Priorities:** Quad members have differing security, economic and diplomatic priorities, **limiting consensus on sensitive geopolitical issues**.
 - E.g. India emphasizes strategic autonomy, while the US focuses on strategic competition with China.
- **Declining focus on the Indo-Pacific:** E.g., US administration decision to restore the designation US Pacific Command (USPACOM), replacing the Indo-Pacific Command name adopted in 2018.
- **AUKUS vs. Quad:** AUKUS, a strategic defence alliance between Australia, UK and US, raises concerns towards the dilution of interest in India or the Quad and reliability of the U.S. as a partner for India due to differing approaches on tackling China.
- **Absence of Institutional Framework:** Quad remains an informal strategic grouping **without a permanent secretariat**, treaty obligations or dedicated funding mechanism, affecting implementation and continuity.
- **Limited On-Ground Impact:** Despite multiple initiatives, Quad's infrastructure footprint remains modest, as compared with China's Belt and Road Initiative (by 2023, Beijing had financed 20,000 projects).
 - E.g. results for Quad Partnership for Cable Connectivity and Resilience (QPCCR) have been intangible and negligible, limited to a subsea cable in Palau.
- **Financing Constraints:** Resource limitations, particularly in India and Australia, coupled with the **absence of a coordinated financing architecture**, constrain QUAD's ability to undertake large-scale infrastructure and connectivity projects.
- **Implementation Deficit:** Despite launching initiatives such as Infrastructure Working Group, QPCCR, and Quad Ports of the Future Partnership, **implementation has lagged, with financial commitments often failing** to translate into on-ground execution.

Way ahead

- **2+1 Development Cooperation:** Adopt a **2+1 model (two Quad members + one beneficiary country)** for faster, locally tailored and more effective infrastructure delivery.
- **Strengthen Strategic Connectivity Corridors:** Asia-Africa Growth Corridor (AAGC) should be revived to expand Asia-Africa connectivity paradigms, especially given the renewed interest among Quad partners in Africa's strategic and economic value.
 - Linking AAGC with Lobito Corridor or EU's Global Gateway could foster economic synergy and geopolitical coherence.
- **Regional Cooperation:** Quad should **strengthen collaboration with regional institutions** such as **ASEAN and Pacific Islands Forum** to develop infrastructure projects aligned while ensuring inclusivity, regional ownership, and broader stakeholder support.
- **Funding:** Quad Development Finance Corporations (DFCs) and policy banks should **streamline financing mechanisms, de-risk investments, and promote public-private partnerships (PPPs)** to mobilise capital and fast-track quality infrastructure projects in the Indo-Pacific.
- **Deliver Measurable Outcomes:** Establish clear timelines, performance indicators, and periodic reviews for Quad initiatives to ensure accountability and build confidence among Indo-Pacific partner countries.

Conclusion

Quad must evolve from a consultative platform into an action-oriented partnership by delivering tangible outcomes in security, connectivity, technology, and resilience while upholding a free, open, inclusive, and rules-based regional order.

2.2. BRICS

Why in the news?

Under India's BRICS Presidency (2026), the 16th BRICS Agriculture Ministers' Meeting was held at Indore recently, the first such meeting to include **Partner Countries alongside Members**.

Key Outcomes

Theme "Building for Resilience, Innovation, Cooperation and Sustainability".

- **BRICS Indore Declaration** was unanimously adopted to provide new direction to food security, farmer welfare, climate-resilient farming, agricultural trade and digital agriculture.
- **BRICS Indore Declaration-**

Priority Areas	Details
Food Security, Nutrition and Livelihoods	• Recognition of farmers as custodians of traditional knowledge, biodiversity and seed heritage. • Launch of Global Forum on Farmers' Rights in Seed Systems to protect seed rights and indigenous knowledge. ◦ Forum will function primarily through virtual modalities coordinated by the Protection of Plant Varieties and Farmers' Rights Authority constituted under PPV&FR Act, 2001.
Agriculture Trade and Cooperation	• Support for proposed BRICS Grain Exchange. • Launch of BRICS AGRIN (Agro-Inputs, Genetic Resources and Information Network) for cooperation in seeds, genetic resources and agricultural inputs. • Utilization of BRICS Basic Agricultural Information Exchange System (BAIES) as a cooperation platform. • Strengthening BRICS Agricultural Research Platform (BARP) as a 'Knowledge-to-Action' hub.
Regenerative Farming, Climate Resilient and Sustainable Agriculture	• Establishment of a BRICS Network of Centres of Excellence on Agroecology and Regenerative Agriculture for Climate Resilience & Productivity, as a collaborative, platform initially coordinated by ICAR–Indian Institute of Farming System Research (IIFSR), Modipuram. • Sustainable use of Globally Important Agricultural Heritage System (GIAHS) initiative in enhancing resilience of traditional agriculture and safeguarding farmers' livelihoods. ◦ GIAHS is an FAO designation (2002) for living agricultural systems. India has three: Kuttanad below-sea-level farming (Kerala), Koraput traditional agriculture (Odisha), Pampore saffron heritage (J&K).
Future-Ready Agriculture and Food System	• Expansion of Digital Public Infrastructure (DPI) in agriculture. • Establishment of a BRICS Network on Digital Agriculture (coordinated initially by IIT Delhi) to bring Artificial Intelligence and digital technology into farming.

About BRICS

- **Genesis:** British economist **Jim O' Neill** in 2001 **coined acronym 'BRIC'** representing the emerging economies of Brazil, Russia, India, and China. 1st BRIC Summit was held in Russia (2009).
- **Aim:** Reform global governance and provide alternatives to Western-dominated institutions (IMF, World Bank, UNSC).
- **Three pillars of Cooperation of BRICS:** Political and security; Economic and financial; and Cultural and people-to-people cooperation.
- **Represents:** Approximately 49.5 % of global population, around 40% of global GDP by PPP and around 26% of global trade, ~42% of global agricultural land and ~42% of world foodgrain production.

- **Fortaleza Declaration 2014 produced two instruments:** the **NDB** (HQ Shanghai; \$100 bn authorised capital; regional offices including one in India) and the **Contingent Reserve Arrangement (CRA)**, a \$100 bn currency-swap safety net.
- **New Development Bank (NDB):** Established during **6th BRICS Summit in Fortaleza, Brazil (2014)** with an initial authorized capital of USD 100 billion.
- **Members: Original 5-** Brazil, Russia, India, China, South Africa.
 - **New Members:** Egypt, Ethiopia, Iran, United Arab Emirates, and Indonesia.
 - **Indonesia** has become the **first Southeast Asian member** of BRICS.
 - **Saudi Arabia** has **not yet taken a formal decision** on membership.
- **BRICS Partner Countries:** Belarus, Bolivia, Kazakhstan, Cuba, Malaysia, Nigeria, Thailand, Uganda, Uzbekistan and Vietnam.
- **Secretariat: No permanent secretariat** or office.

Relevance of BRICS for India

- **Advancing Strategic Autonomy:** BRICS enables India to **pursue its multipolar foreign policy by strengthening leadership in Global South** while engaging with Western groupings like QUAD.
 - It reinforces India's multi-alignment strategy, enhances its role as a global bridge, and helps **balance relations among major powers** while preserving strategic autonomy.
- **Improving India-China Relations:** BRICS provides India a platform to **engage China diplomatically, manage border and trade differences, promote regional stability**, and explore cooperation in areas of mutual interest.
 - E.g. Modi–Xi meeting at the 2024 Kazan Summit after a five-year gap.
- **Connectivity:** Strategic partnerships with new BRICS members, like Iran adds a connectivity dimension — **Chabahar** and the **INSTC** — though the **withdrawal of the US sanctions waiver for Chabahar (2025)** shows how third-party sanctions constrain BRICS-mediated connectivity.
- **Global Economic Governance:** BRICS provides India a platform to advocate for **a fairer global economic order by opposing unilateral sanctions**, discriminatory trade measures (such as EU's Carbon Border Adjustment Mechanism), and excessive economic concentration.
- **Driving Technology & Innovation:** BRICS promotes **collaboration in Digital Public Infrastructure (DPI), AI, fintech, and space technologies**, enabling India to showcase and scale its digital governance models across Global South.
- **Strengthening Energy Security:** BRICS' expanded membership **enhances India's access to oil, gas, and critical minerals**, while fostering cooperation in renewable energy, supporting its energy transition and resilience goals.

Challenges for India within the BRICS

- **Anti-Western Image:** India seeks to ensure **BRICS remains a non-western, not anti-western platform** to avoid undermining its partnerships with the US, EU, and Quad.
 - E.g. Russia and China may attempt to frame BRICS as a counterbalance to western influence.
- **Divergent Strategic Priorities:** Differences among members on geopolitical and economic issues make consensus difficult, limiting BRICS' effectiveness as a cohesive grouping.
 - E.g. **India's neutral stance on the Russia–Ukraine conflict** differs from the positions of other BRICS members, reflecting varying geopolitical priorities.
- **China's Dominance:** China's expanding influence and agenda-setting capacity risk making BRICS China-centric can potentially side-line India's strategic and economic priorities.
 - E.g. **China's push for Pakistan's membership** could further tilt BRICS in Beijing's favour.
- **India–China Rivalry:** Persistent border disputes, competing regional ambitions, and China's expanding influence in trade, infrastructure, and the Global South continue to constrain India's interests and cooperation within BRICS.
- **Structural Contradictions:** BRICS **expansion has intensified internal divisions**, as regional rivals with conflicting geopolitical interests and threat perceptions (e.g., Iran–UAE) make **consensus-building increasingly difficult**.
 - BRICS deputy foreign ministers' meeting in April and Foreign Ministers' meeting in May 2026 failed to build consensus.

Way ahead

- **Reform Working Methods:** Rationalise BRICS agenda by **prioritising actionable issues, streamlining institutional mechanisms, and conducting periodic stocktaking.**
- **Strengthen Membership Framework:** Develop transparent modalities for the admission of new members and partner countries while ensuring their effective integration into the shared vision, principles, and institutional ethos.
- **Technology Cooperation:** Establish initiatives such as a **BRICS AI Centre, Innovation Bridge Strategy, Skill Development Centre, DPI platform,** and a **Cybersecurity Action Plan** to foster innovation, digital connectivity, and technological resilience.
- **Financial Integration:** Expand trade settlement in local currencies, develop central bank-regulated cross-border payment systems, **promote the use of Central Bank Digital Currencies (CBDCs) and blockchain-enabled transactions,** and establish an NDB presence in GIFT City to facilitate private-sector financing.
- **Strengthen Institutional Partnerships:** Expand BRICS' global engagement by **developing structured partnerships with institutions such as G7 and World Bank,** while institutionalising BRICS Outreach to strengthen cooperation with the broader Global South.

Conclusion

BRICS has evolved into a significant platform for advancing multipolarity, South-South cooperation, and reform of global governance. For India, it remains a valuable forum to promote strategic autonomy, strengthen economic and technological partnerships, and amplify the voice of the Global South. However, addressing internal divergences, ensuring balanced leadership, and making the grouping more action-oriented will be essential for BRICS to remain credible, cohesive, and effective in shaping the emerging global order.

2.3. INDIA-FRANCE INNOVATION ROADMAP 2030

Why in the News?

The **India-France Innovation Roadmap 2030** was formally adopted on June 14, 2026, during Indian Prime Minister's official visit to Nice, France.

More on the News

- The **2030 Roadmap** is a strategic framework guiding **India-France collaboration in science, technology, and emerging industries,** with innovation driving economic resilience, sustainable development, and technological sovereignty.
- The Roadmap aligns with the **'2026 India-France Year of Innovation' & 'Horizon 2047 Roadmap'** along with India's **Viksit Bharat 2047** and France's own **France 2030 strategy.**
- Against a U.S.-China technology duopoly, the Roadmap pools **India's software talent with France's industrial hardware** to secure **strategic autonomy** and shift from buyer-seller to **co-design, co-development, and co-production.**



Pillars of the India-France Innovation Roadmap 2030

Pillar I (Partnership for 'Trusted AI')	• AI Governance: Promotes safe, secure, and trustworthy AI systems aligned with democratic values, building on the February 2025 India-France Declaration on AI. • Child Safety Online: Mitigates digital and AI-related risks to children through safety-by-design architectures and privacy-preserving age assurance. • Secure Data Sharing: Integrates India's Data Empowerment and Protection Architecture (DEPA) with French trusted data spaces to enable secure, consent-based data flows.
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Pillar II (Enhanced Academic Mobility)	• Hosting Students: Supports France's national target to welcome 30,000 Indian students by 2030. • Expanding MRQ: Enhances the 2018 Mutual Recognition of Qualifications (MRQ) framework to cover emerging technology domains, facilitating dual degrees and joint doctoral supervision.
Pillar III (Technological Sovereignty and Industry-Academia Linkages)	• InnoXchange Bridge: Establishes a startup corridor providing reciprocal access to research laboratories, technology platforms, and investors. • IFIN Digital Tool: Uses the digital India-France Innovation Network (IFIN) to connect startup and incubator ecosystems. • Kanpur Aeronautics Campus: Establishes an aeronautical training campus in Kanpur in partnership with India's Ministry of Skill Development and Entrepreneurship (MSDE). • Space Ecosystem Collaboration: Anchors institutional and private space ties by coordinating major events like the Bengaluru Space Expo (BSX) and the International Space Summit.
Pillar IV (Building AI and Research-Based Solutions for Global Health Challenges)	• Health Data Sharing: Deploys pilot projects, such as the collaboration between the Indian Council of Medical Research (ICMR) and France's Health Data Hub, using consent-based architectures for secure health-data sharing.

Conclusion

The partnership continues to deepen with strong momentum, unlocking greater shared opportunities in defence, technology, and the Indo-Pacific while fully honouring each nation's strategic autonomy.

However, both sides need to work on **France's NATO alignments versus India's non-alignment** (especially on Russia and China) and **EU's regulatory barriers** as economic ties lag behind defence cooperation.



2.4. NEWS IN SHORTS

2.4.1. G7 LEADERS' SUMMIT

Indian Prime Minister attended 2026 G7 Leaders' Summit held in Évian, France.

- India was invited as a partner country. Indian PM emphasized that world faces a **"shortage of trust" rather than resources**, aggravated by the misuse of trade and technology.
- He opined that the world should move from **donor-recipient paradigm to partnerships based on solidarity and equality**.
- Reiterated that India's vision of international partnership is rooted in the philosophy of **'Vasudhaiva Kutumbakam'** and a **'humanity first' approach**.

Key Declarations adopted

- **Development Finance:** Called for reforms in global development finance and debt management, including strengthening the IMF–World Bank 3-Pillar Approach and mobilizing private capital.
 - **IMF–World Bank 3-Pillar Approach** helps vulnerable countries address liquidity challenges through structural reforms, external financial support, and reducing their debt servicing burdens.
- **Ebola Response:** Urged coordinated international action to contain the Bundibugyo Ebola outbreak in the DRC and Uganda.
- **Cancer Action:** Committed to advancing research on cancers, reducing lung cancer mortality, and improving global access to paediatric cancer data.



- **Geopolitics:** Welcomed the US-Iran nuclear agreement, promoted a free and open Indo-Pacific, and expressed concern over North Korea's nuclear programme etc.
- **Migrant Smuggling:** Pledged stronger action against human trafficking and migrant smuggling networks, including cooperation with online platforms.
- **Drug Trafficking:** Announced a **G7+ Ports Network** to combat maritime drug trafficking and disrupt related illicit financial flows.

ABOUT GROUP OF SEVEN (G7)

 GENESIS	1975 as an informal forum for economic and financial cooperation following 1973 energy crisis .
MEMBERS	Seven advanced democracies -  Canada,  France, Germany, Italy, Japan, the United Kingdom, and the United States, along with the European Union.  Expanded to G8 (1998–2014) with Russia's inclusion; Russia was suspended in 2014 following its annexation of Crimea.
 STRUCTURE	 No permanent secretariat; annual rotating presidency.
FOCUS AREAS	 Global economic governance, international security, energy policy, etc.

2.4.2. INDIA-US SIGN FRAMEWORK FOR COOPERATION IN CRITICAL AND RARE EARTHS MINERALS

The Framework on “Securing of Supply in the Mining and Processing of Critical Minerals and Rare Earths” builds on earlier India-US partnerships such as the U.S.-led Pax Silica and FORGE initiatives.

- It aims to **strengthen cooperation on supply chains of critical minerals and rare earths**, including **financing, recycling, and supply diversification**.

About Critical and Rare Earth Minerals

- **Critical Minerals:** Critical minerals are those that are **essential to countries' economies or development**, and **their classification varies from country to country**, depending on their level of access, usage, export value and national supply risks.
 - Most countries' critical mineral lists include **copper, lithium, nickel, cobalt, graphite and rare earth elements**.
 - **All rare earth minerals are critical minerals**, but not all critical minerals are rare earths.
- **Rare Earth Elements:** These are a **group of 17 elements**, comprising the elements **scandium, yttrium and the 15 lanthanides**, as defined by the International Union of Pure and Applied Chemistry.
- **Application: Both Critical and Rare Earth Minerals are** used in critical sectors such as the **Defence sector** (radars and others), **electronics, clean energy technologies** such as solar panels, AI, Robotics, Space exploration equipment etc.
- **China's dominance:** According to IEA, China has **49% of the world's rare earth reserves**, produces 69% of rare earth minerals, and **controls 90% of their processing and refining**.
 - In other critical minerals, China commands **99% of gallium refining, over 90% of graphite and manganese processing and 58% of global lithium refining**.

Measures to Reduce Strategic Vulnerability



1. National Critical Mineral Mission (NCMM)

Launched in 2025 to strengthen domestic exploration, recycling and supply-chain resilience.



2. Legislative Reforms

Mines and Minerals (Development and Regulation) Amendment Act, 2023 aims to strengthen exploration and extraction of critical minerals.



3. International Partnerships

E.g. QUAD Critical Minerals Initiative, Mineral Security Partnership and partnerships with Australia and South American countries (India-Argentina Agreement).



4. Others

- Overseas asset acquisition by KABIL
- Domestic Exploration
- Recycling and resource efficiency
- Technology collaboration and skill development



Read our previous coverage on India-US relations

How this New Framework Benefits India?

- **Supply Chain Security:** Helps India **reduce overdependence on China** for critical minerals and rare earth processing.
- **Boost to Clean Energy & Manufacturing:** Supports India's **EV, battery, semiconductor and renewable energy ambitions** through better access to critical minerals.

- **Technology & Investment Support:** It can bring **investment, advanced processing technology** and **cooperation** in mining, recycling and refining sectors.

2.4.3. INDIA-UK CRITICAL MINERALS GLOBAL SUPPLY CHAIN OBSERVATORY

The India-UK Critical Minerals Global Supply Chain Observatory (GSCO) was formally launched.

- It was announced during the **India-UK Prime Ministers' bilateral engagement** in 2025 and formalized through a Research Collaboration Agreement signed in March 2026.

About Critical Minerals GSCO

- It is a **joint initiative of TEXMin (TTRP, DST), IIT (ISM) Dhanbad, and the University of Cambridge.**
- **Aim:** To create a **data-driven platform** for monitoring and analysing global critical mineral supply chains.
- **Significance:** Identify supply risks and disruptions; generate market intelligence; support informed decision-making; and advance the goals of the National Critical Mineral Mission (NCMM).

2.4.4. INDIA-MYANMAR

The Prime Minister of India and the President of Myanmar reviewed **bilateral, regional and global issues of mutual interest** including AI and Space.

- Both nations also welcomed the steady growth of the **Rupee-Kyat settlement mechanism** (operationalized in 2024) to facilitate easier bilateral trade.

Significance of India-Myanmar Relations:

- **Geo-strategic:** Myanmar lies at the confluence of India's **Neighbourhood First, Act East and MAHASAGAR** policies.
- **Connectivity:** **India-Myanmar-Thailand Trilateral Highway** and the **Kaladan Multi-Modal Project** to boost regional economic integration.
- **Security:** to manage **ethnic cross-border insurgencies (along 1,643 km long border)**, check arms and narcotics smuggling (Golden Triangle) into northeastern states.
- **Cultural Soft Power:** Deep-rooted historical ties built around shared Theravada Buddhist heritage.

2.4.5. INDIA-OMAN COMPREHENSIVE ECONOMIC PARTNERSHIP AGREEMENT (CEPA)

India-Oman CEPA recently entered into force.

About India- Oman CEPA

- **Oman's offer:** **99.38%** of India's exports (by value) will receive immediate zero-duty access to Oman.
 - **100% FDI for Indian companies** in major **services sector** in Oman.
- **India's offer:** Tariff liberalisation on **77.79%** of tariff lines covering **94.81%** of imports from Oman, while protecting sensitive sectors like dairy, oilseeds and cereals.

About India-Oman Trade Relations

- Oman is **India's second-largest trading partner in Gulf** with **~\$11 bn bilateral trade.**
- Oman's logistics hubs at **Sohar, Duqm and Salalah** provide access to India to wider Gulf Cooperation Council and East African markets.



2.4.6. INDIA-VENEZUELA

Indian Prime Minister held talks with the Acting President of Venezuela in New Delhi and reviewed the full spectrum of bilateral relations and emphasizing cooperation within the **Global South.**

About India- Venezuela Relations

- **Bilateral trade: US\$ 678.94 million** (FY 2025-26) with Indian exports of US\$ 210 million
 - **India's exports:** Mineral fuels & oils, pharmaceuticals, cotton, and nuclear reactors/machinery.
 - **India's imports:** Crude oil, mineral waxes, iron & steel, aluminium, vegetables, copper, lead, and zinc.
- **Energy Partnership:** Venezuela possesses one of the **world's largest proven oil reserves**, and has **emerged as the 3rd largest oil supplier to India in May 2026**.
- **Cultural & People-to-People Ties:** Several spiritual organizations such as Sathya Sai Organization, Brahma Kumaris, and Radha Soami Satsang have established centres in Venezuela.

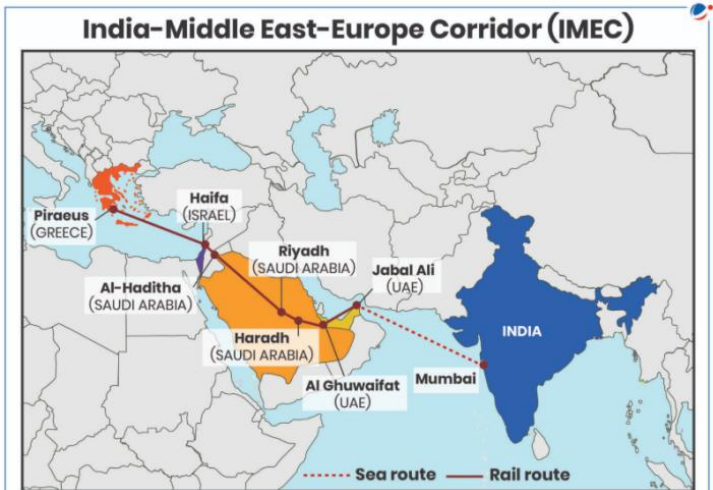


2.4.7. FUTURE OF INDIA-MIDDLE EAST-EUROPE ECONOMIC CORRIDOR (IMEC) AMID THE MIDDLE EASTERN WAR

The Iran conflict strengthens the case for the IMEC while simultaneously complicating its execution.

About India-Middle East-Europe Economic Corridor (IMEC)

- **IMEC is a multi-modal connectivity project** aimed at developing infrastructure of ports, railways, roads, sea lines and pipelines to enhance trade **between India, the Arabian Peninsula, the Mediterranean region and Europe**.
- **Announcement:** During the G20 Summit 2023, held under the presidency of India.
- **Signatories:** India, the United States, Saudi Arabia, the United Arab Emirates, France, Germany, Italy, and the European Union.
- **Two Key Corridors:**
 - The **East Corridor** connects India to the Arabian Gulf (linking South Asia and the Middle East).
 - The **North Corridor** extends from the Gulf to European markets.
- **Significance for India:** Estimated to **reduce transportation time by 40% and logistics costs by 30%**, providing an **alternative to congested routes (such as the Suez Canal)**.



Current Vulnerabilities in IMEC:

- **Escalation of Iran- Israel War:** have intensified into a broader regional war, threatening IMEC's proposed transport corridors.
- **Trade Route Disruption:** Strategic chokepoints (**Strait of Hormuz**) have triggered spikes in oil prices and shipping risks, **undermining IMEC's economic feasibility**.
- **Breakdown of Regional Cooperation:** Strained critical diplomatic ties between Israel and Arab nations, stalling coordinated infrastructure development.
- **Execution Challenges:** Diverse stakeholder interests (between UAE and Saudi Arabia) further complicate the funding and timely execution of IMEC projects.

Way Forward

- **Strengthen West Asian Diplomacy:** Promote regional dialogue and cooperation to ensure the stability required for smooth project execution.

- **Phased Development:** Prioritize key infrastructure segments first to build momentum and show early results.
- **Deepen Partnerships:** Enhance economic and trade ties with key partners like the European Union and Gulf nations.

2.4.8. CPEC

China and Pakistan recently agreed to accelerate the development of the upgraded phase of the China-Pakistan Economic Corridor (CPEC 2.0) and develop Pakistan's port of Gwadar.

About CPEC

- It is the **flagship project** of the **Belt and Road Initiative (BRI)** launched in **2015**.
 - **Gwadar Port** was officially inaugurated in 2016 as part of the larger **CPEC**.
- It connects Pakistan's Gwadar Port to **Kashgar City** in northwestern **China's Xinjiang Uyghur Autonomous Region (XUAR)**.
- **India opposes CPEC** as it passes through parts of Jammu & Kashmir illegally occupied Pakistan, violating India's sovereignty and territorial integrity.



2.4.9. GLOBAL ALLIANCE FOR HUMAN RIGHTS

The UN human rights office (OHCHR) has launched Global Alliance for Human Rights. It is designed as a **long-term effort leading up to the 80th anniversary of the Universal Declaration of Human Rights (UDHR) in 2028**.

- UDHR is a landmark UN declaration adopted in 1948 that sets out the **fundamental rights and freedoms to which every person is entitled, regardless of nationality, race, gender, religion, or any other status**.

About GHRA

- **Goal:** A future where governments are accountable, societies are inclusive, and economies are fair; where innovation puts people first, and respect shapes our relationships with each other and with the planet.
- **Aim: Placing the human right issue at the heart of decision-making.** (See initiatives to be launched in the box)
- **Core principles**
 - **Purpose-driven:** A sustained global endeavour with a three-year milestone at the 80th anniversary of the Universal Declaration of Human Rights (10 December 2028).
 - **Inclusive:** Engaging governments and non-state actors across regions and sectors, with a firm commitment to gender equality and participation from all ages, backgrounds, and identities.
 - **Action-oriented:** Delivering measurable change through collaborative, creative activities.
 - **Ecosystem-building:** Strengthening and connecting human rights mechanisms, institutions, and networks.
 - **Narrative-shifting:** Using accessible language, reaching new audiences, and embracing innovative approaches and partnerships.

PATHWAY 1 RIGHTS AT HOME	Human Rights Cities & Local Governments Movement Amplifying the Human Rights Cities movement and sharing practical approaches to rights-based public services and participatory governance.
PATHWAY 2 RIGHTS IN ACTION	A Global Helpdesk on Business and Human Rights Expanding practical advisory support for companies and stakeholders to accelerate implementation of the Guiding Principles on Business and Human Rights.
PATHWAY 3 RIGHTS IN MIND	Research for Rights Platform Connecting academic and research institutions to advance multidisciplinary human rights research. ReachOut Generating narratives and outreach strategies to make human rights more personal and relevant. 21st Century Philosophers' Circle Bringing together thought leaders to deepen public discussion on values, human dignity, and the social foundations of rights.
PATHWAY 4 RIGHTS FOR THE FUTURE	RightsX Summit Bringing together stakeholders to advance digital innovation that respects human rights. Human Rights-based Environmental Action Providing a platform for knowledge-sharing to integrate human rights in environmental and climate action. Human Rights in Every Classroom Accelerating inclusion of human rights education in schools and higher education institutions.

- **Three guiding principles:**
 - **Imagine:** envision a better future.
 - **Dialogue:** foster inclusive discussions.
 - **Act:** translate commitments into action.

2.4.10. GLOBAL PEACE INDEX

India is ranked **127th among 163 countries** in the 2026 **Global Peace Index (GPI)**.

About Global Peace Index (GPI) 2026

- **Published By:** The **Institute for Economics & Peace**, an independent and non-partisan think tank.
- **Purpose:** Measures global peacefulness and its economic impact.
- **Top Performers:** **Iceland** ranked first for the 19th consecutive year, followed by New Zealand, Switzerland, Slovenia, and Ireland.
- **Bottom Performers:** **Russia** ranked last, followed by Sudan, the Democratic Republic of the Congo, Ukraine, and Israel.
- **Methodology:** Based on **23 indicators** across three domains—**Societal Safety & Security, Ongoing Domestic & International Conflict, and Militarization**.

2.4.11. AREAS IN NEWS

- **Padma Barrage:** Bangladesh approved construction of Padma barrage before the 1996 Ganga Water Sharing Treaty with India approaches expiry in December 2026.
 - Proposed on the **Padma River** (the Bangladesh stretch of the Ganga) in Rajbari District, Bangladesh.
- **Lipulekh Pass:** India-China border trade via **Lipulekh Pass in Uttarakhand** to resume after 6 years.
 - A high-altitude mountain pass located in **Uttarakhand**, near the **trijunction of India, Nepal, and China**.
 - Vital link between India and Tibet (China) and is a significant part of the trade and pilgrimage route (**Kailash Mansarovar Yatra**).
 - **Other trade passes between India and China:** Shipki La Pass (Himachal Pradesh) and Nathu La Pass (Sikkim)

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2026

ENGLISH MEDIUM
5 JULY

हिन्दी माध्यम
5 जुलाई

2027

ENGLISH MEDIUM
5 JULY

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3. ECONOMY

3.1. INDIA'S MIDDLE CLASS

Why in the News?

India's middle class is growing rapidly driven by rising incomes, urbanization, and economic growth.

About Middle Class

- **Definition of middle class** varies across countries, shaped by factors like purchasing power, education levels, social services, perceptions of wealth.
- **World Bank** classifies countries/economies annually, based on Gross National Income (GNI) per capita, the value of primary incomes for all sectors (See Infographics).
 - World Bank classifications provide a broad framework to situate income groups, including the middle segment, within the global economy.

Contribution of Middle class in Indian Economy

- **Driving Consumption:** World Economic Forum (WEF) opines that **by 2036**, India's middle class (and affluent consumers) will account for **93% of all spending**. This would be a rise from **80%** in 2026.
- **Supports Tax Revenue:** Salaried **middle-class** households are major contributors to direct and indirect taxes through consumption.
- **Boosts GDP Growth:** Rising disposable incomes increase **private final consumption expenditure (PFCE)** which is projected to grow by **7%**, accounting for **61.5 %** of GDP, the highest level since **FY12**.
- **Supports Regional Economic Growth:** Rather than being concentrated in traditional metropolises, **93%** of urban consumer growth is expected outside the top five cities (New Delhi, Kolkata, Mumbai, Bengaluru, and Chennai).
- **Boosting Productivity:** By prioritizing education, the middle class continuously builds **human capital**.

Challenges associated with India's middle class

- **Lower middle-income trap:** At present, India's gross national income (GNI), per capita is roughly \$2,600. To move into the World Bank's **upper-middle-income** category, India must cross a threshold of about \$4,500.
- **Debt Burden:** India's household debt rose to **45.5 %** of gross domestic product (GDP) by March 2026, driven largely by an increase in non-housing retail loans (RBI).
- **Income Inequality:** The richest 10% in India hold about 65% of the total national wealth, while the top 1% alone control roughly 40% (World Inequality Report 2026).
- **Technology Threat:** By 2031, India's technology sector could lose **1.5 million jobs** due to Artificial intelligence (NITI Ayog).
- **Social Constraint:** Patriarchy restricts the participation of women in the workforce, limiting the earning potential of middleclass households.
- **Other:** health and education cost inflation running above headline CPI; **out-of-pocket health expenditure** still ~39–40% of health spending; private schooling and coaching costs; and a social-security architecture (**Code on Social Security 2020, EPFO, NPS, APY, Ayushman**) that covers the organised bottom and the salaried top while thinning in the middle.

COUNTRY INCOME CLASSIFICATIONS (FY26)

IN US DOLLARS		
	LOW INCOME Countries with the lowest levels of income.	≤ \$1,135
	LOWER-MIDDLE INCOME Countries with lower-middle levels of income.	\$1,136 – \$4,495
	UPPER-MIDDLE INCOME Countries with upper-middle levels of income.	\$4,496 – \$13,935
	HIGH INCOME Countries with the highest levels of income.	> \$13,935



Read our previous
coverage on
Middle-Class

Reforms Measures taken by India to empower Middle Class

- **Simplified taxation:** Union Budget 2025-26 raised the zero-tax threshold to ₹12 lakh (₹12.75 lakh for salaried taxpayers) under the new tax regime, increasing disposable income and consumption.
- **Enhanced Retirement Security:** Unified Pension Scheme (UPS), effective since **2025**, UPS strengthens retirement security for central government employees in India- a significant **segment of middle class**.
- **Entrepreneurial Credit:** Under the **Pradhan Mantri MUDRA Yojana (PMMY)**, the government has disbursed over 57 crore loans totaling **₹40.07 lakh** crore by March 2026.
 - **For the middle class**, PMMY enables small business creation, supports self-employment, and reduces dependence on informal credit, improving financial stability.
- **Affordable housing:** E.g., SWAMIH (Special Window for Affordable and Mid-Income Housing) fund is specifically designed for the middle class and lower-middle-class, aimed at completing stalled residential projects.
 - Since its launch in 2019, **over 58,000 homes** have been completed across **146 projects**.
- **Affordable Healthcare:** E.g., Under Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana, over **86.51 lakh** senior citizens aged **70** and above have been provided with **Ayushman Vay Vandana Cards** for cashless hospital treatments.

Way forward to further empower India's Middle class

- **Escape the Lower Middle-Income Trap:** Strengthen initiatives like PLI Scheme, Make in India and National Manufacturing Mission.
- **Future-Proof the Workforce:** E.g., India AI Mission seeks to develop AI talent, computing infrastructure and innovation ecosystems.
- **Reduce Household Debt Burden:** E.g., RBI's regulatory framework on digital lending enhances consumer protection and responsible borrowing.
- **Increase Women's Labor Force Participation:** Expand affordable childcare, safe public transport, flexible work arrangements and equal employment opportunities to unlock household earning potential.
- **Maintain Price Stability:** Keep food and fuel inflation under control through supply-chain reforms, improved agricultural logistics, buffer stocks and prudent monetary policy.

Conclusion

India is set to touch **\$4000 per capita in another 4 years** in 2030 to transition to an Upper Middle-Income country and join China and Indonesia. By promoting **accessibility**, the government has built greater confidence among middle-income families. This sustained approach has improved lives and creates a strong foundation for future progress.

3.2. GOVERNMENT SECURITIES (G-SEC)

Why in the News?

Ministry of Finance has introduced a series of reforms to increase Foreign Portfolio Investor (FPI) participation in Government Securities (G-Secs).

More on the News

- Key measures include **tax exemptions on interest income, long-term capital gains (LTCG) and short-term capital gains (STCG), expansion of specified securities under the Fully Accessible Route (FAR)**, and streamlined investment norms.
 - **FAR** is an open-access channel where **foreign investors** can invest in select G-Secs without restrictions that apply under the General Route.
- Additionally, **Overall investment limit** in equity instruments of listed Indian companies for all individual **Persons Resident Outside India (PROIs)** increased to **24%** (from the current 10%).

About Foreign Portfolio Investor (FPI) and Foreign Direct Investment (FDI)

- **FPI** refers to investments made by **foreign individuals, institutional investors, or funds in financial instruments such as stocks, bonds, mutual funds, and government securities.**
 - They **do not participate** in the **management or decision-making** of the companies in which they invest and are generally considered passive investors.
 - This is why the nature of FPI is **short term**.
- **FDI** refers to the investment made by foreign investors to obtain a substantial interest in an enterprise located in a different country.
 - They **directly participate in the management or decision making** of the companies they invest.
 - This is why nature of FDI is **long term**.

Note: In 2014, for ease of compliance, **SEBI merged Foreign Institutional Investor and Qualified Foreign Investors (FII and QFI are similar to FPI) categories into FPI itself.**

About G-Securities

- **Definition:** It is a **tradeable instrument** issued by the Central Government or State Governments. It acknowledges the Government's debt obligation.
- **Issued by:** **G-Secs** are issued through RBI-conducted auctions on the **E-Kuber platform**, RBI's Core Banking Solution (CBS).
 - **G-Secs** carry practically no risk of default and, hence, are called **risk-free gilt-edged instruments**.
 - In India, **Central Government** issues **both**, treasury bills and bonds or **dated securities** while the State Governments issue **only bonds or dated securities**, which are called the State Development Loans (SDLs).
- **Types of Government Securities:**
 - **Treasury Bills (T-bills):** Short-term debt instruments (original maturities of less than one year) issued by the **Central Government** in **91-day, 182-day, and 364-day tenors**.
 - These are **zero-coupon securities**, meaning they **pay no interest** but are issued at a discount and redeemed at face value.
 - **Cash Management Bills (CMBs):** Introduced in **2010**, CMBs are short-term, **discounted instruments** but are issued for maturities of **less than 91 days** to meet temporary cash flow mismatches of the Government.
 - **Dated Government Securities** These are securities which carry a fixed or floating coupon (interest rate) which is paid on the **face value**, on half-yearly basis.
 - **Generally**, the tenor of dated securities ranges from more than **1 year to 40 years**.
 - **State Development Loans (SDLs):** SDLs are market borrowings by **State Governments**, issued as dated securities through auctions similar to Central Government securities.
 - They have a **maturity time of more than 1 year**.



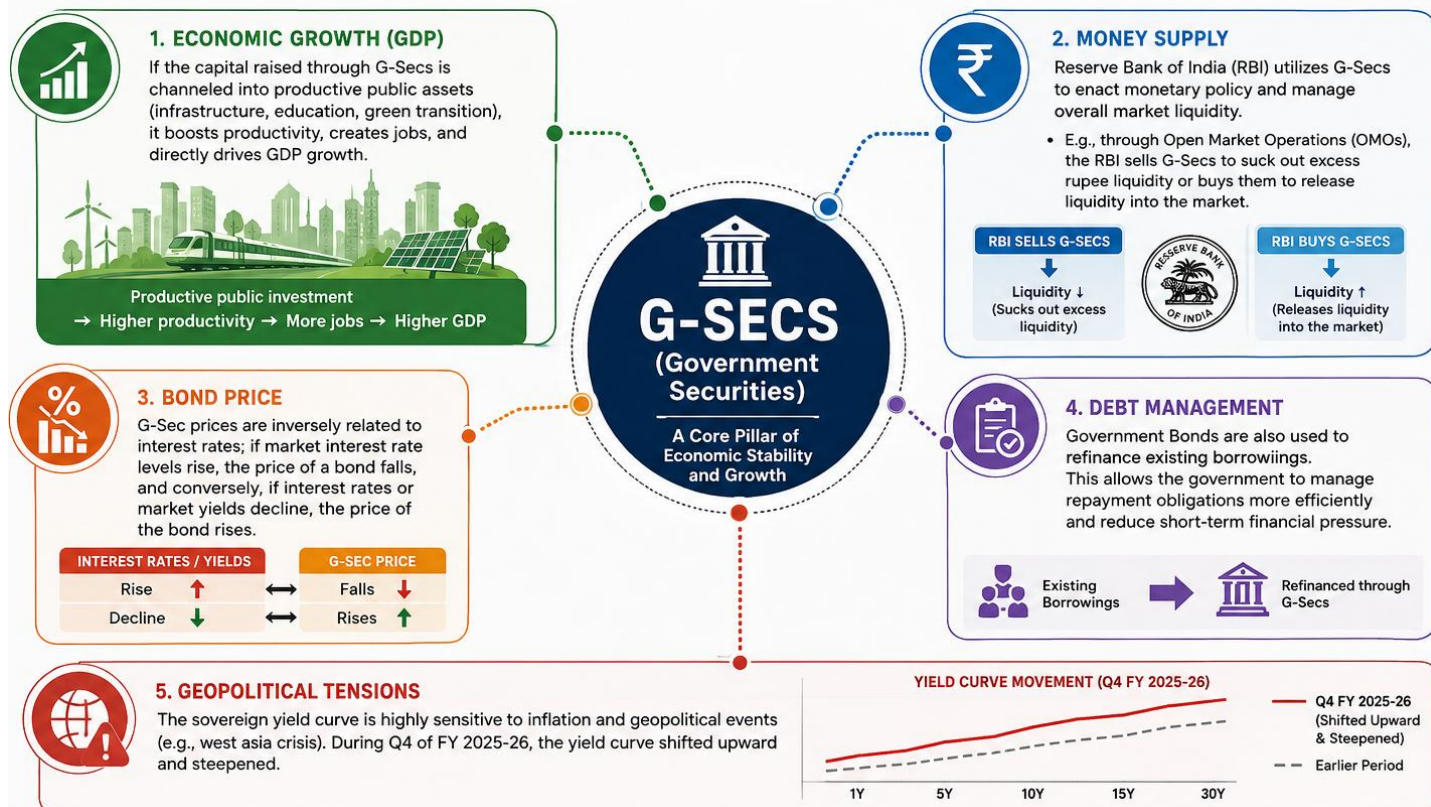
Major risks associated with holding G-Secs

- **Market Risk:** Arises when interest rate changes cause **G-Sec prices** to fluctuate, leading to mark-to-market or capital losses if sold before maturity.
- **Reinvestment Risk:** Coupon payments and maturity proceeds **may have** to be reinvested at lower interest rates, reducing the investor's overall yield.

- **Liquidity Risk:** Refers to the difficulty of selling a **G-Sec** quickly at a fair price due to **low trading activity** or lack of buyers, which may force a distressed sale and result in losses. **Highly liquid** G-Secs have active **buy-sell quotes** with narrow bid-ask spreads.

G-SECS RELATIONSHIP WITH KEY-ECONOMIC FACTORS

G-Secs are not just instruments of borrowing; they are levers that influence growth, liquidity, interest rates, debt sustainability and market sentiment.



Conclusion

The reforms will attract long-term institutional investors, boost stable capital and forex inflows, simplify market access, support greater inclusion of Indian bonds in global indices, deepen debt and equity market participation, and strengthen the resilience and global integration of India's financial system.

3.3. INSOLVENCY AND BANKRUPTCY CODE (IBC), 2016

Why in the News?

Insolvency and Bankruptcy Code (IBC) completes 10 Years of implementation.

More on the News

- The Ministry of Corporate Affairs recently notified the IBC Amendment Act, 2026.

About Insolvency and Bankruptcy Code, 2016

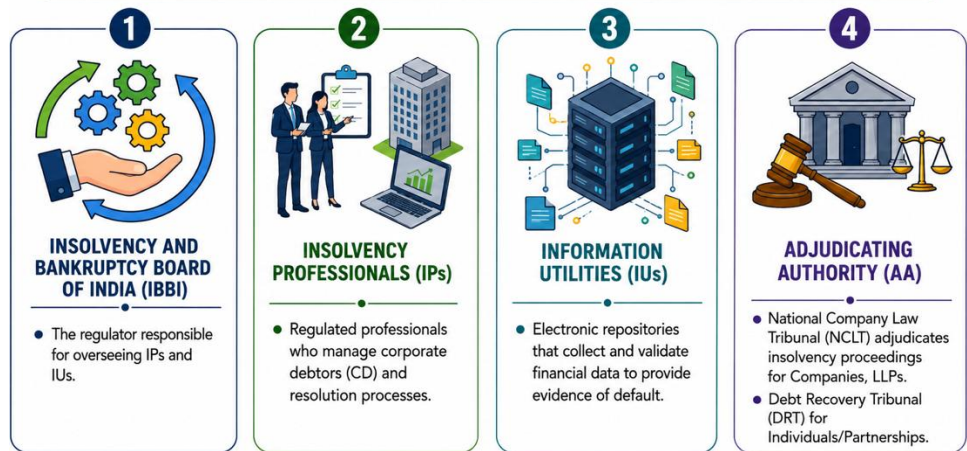
- **Genesis:** Enacted on the recommendations of the **Bankruptcy Law Reforms Committee (BLRC)**, chaired by **Dr. T.K. Viswanathan**.
- **Objective:** To establish a **unified framework** for **resolving insolvency** across companies, partnership firms and individuals.
- **Key Features:** It consolidated multiple insolvency laws into a **single structure**.
 - Earlier, following dealt with the Insolvency- Companies Act, the Sick Industrial Companies Act (SICA), debt recovery mechanisms and secured creditor frameworks including SARFAESI.



Read our previous
coverage IBC
(Amendment) Act,
2026

- It shifted the **credit paradigm** from a fragmented, debtor-friendly **debtor-in-possession** era to a unified, time-bound **creditor-in-control** model.
- **Resolution Mechanism: Corporate Insolvency Resolution Process (CIRP)**, which provides a structured mechanism for resolving corporate insolvency.
 - The **Committee of Creditors (CoC)**, comprising financial creditors, evaluates resolution plans.
 - They then make important commercial decisions regarding the future of the stressed entity.
- **Pre-Packaged Insolvency (PPIRP):** A faster, hybrid framework designed specifically for MSMEs, requiring completion within 120 days.
- **Key Successful resolution case study of IBC: Essar Steel Resolution** (creditors recovered decent claims), **Bhushan Steel and Power** (successful turnaround of distressed assets), etc.

FOUR PILLARS OF THE INSOLVENCY AND BANKRUPTCY CODE (IBC)



Insolvency and Bankruptcy Board of India

- Statutory body under the Insolvency and Bankruptcy Code, 2016.
- Regulates both Insolvency profession as well as processes.
- Regulatory oversight over IPs, Insolvency Professional Agencies, IPEs and Information Utilities.
- Composition: Chairperson, 3 ex-officio members of Central Government, 1 ex-officio member of RBI, and 5 other members (at least 3 full-time) nominated by centre.

Achievements of IBC

- **Decline in NPAs:** Bank Gross Non-Performing Asset (GNPA) levels fell sharply from 11.5% in FY18 to 2.3% in FY26.
- **Improved Recoveries:** Creditors have successfully realized over ₹4 lakh crore. These resolved cases have yielded an average of 170% of their estimated liquidation value.
- **Deterrence Effect:** Because promoters fear losing their companies under the creditor-in-control model, more than **30,000 cases** with outstanding defaults estimated at nearly **₹14 lakh crore** (₹13.78 lakh crore) were settled and withdrawn at the pre-admission stage.
- **Credit Discipline:** An **IIM Bangalore** study noted that the average transition time for corporate accounts to move from overdue back to normal categories dropped sharply from 248–344 days to just **30–87 days**.

Existing Challenges

- **Delays in Resolution:** Reaching 744 days as of March 2026, against the mandated time limit of 330 days.
- **Haircuts and Value Erosion:** High haircuts (reduction in the loan amount a bank agrees to recover during a debt settlement) in certain cases have raised concerns regarding valuation methodologies and market participation.
 - Liquidation value has reportedly fallen by about 30 %.
- **Capacity Constraints:** The increasing caseload has strained the capacity of NCLTs and NCLAT, and highlighted the need for institutional strengthening.
- **Litigation and Judicial Intervention:** Frequent challenges to resolution processes have impacted timelines.
- **Implementation:** Insolvency and Bankruptcy Fund provided for in the original Code remains unoperationalised.
- **Technological Deficit:** Although e-Courts have been introduced, limited digital capacity among judicial officers and the lack of a dedicated IT cadre impede the effective digital functioning of the NCLT.

- **Conflict with PMLA:** The Enforcement Directorate's authority to attach assets under the Prevention of Money Laundering Act (PMLA) often conflicts with the IBC's "clean slate" principle, deterring potential bidders.
 - The principle aims to ensure that the successful resolution applicant can operate the business of the corporate debtor free from past claims and liabilities.

Way Forward

- **Strengthening Institutional Capacity:** Expansion of NCLT/NCLAT Benches and establishment of special fast-track courts.
- **Operationalize individual insolvency:** To address defaults in partnerships and proprietorships, which form the backbone of Indian entrepreneurship.
- **Improving Asset Valuation:** Shift from liquidation value to enterprise value to better reflect a company's potential and reduce the haircuts taken by creditors.
- **Dedicated Tribunals:** Establishment of a dedicated NCLT and appellate tribunal to handle IBC matters exclusively.
- **Technological Integration:** The Ministry of Corporate Affairs should accelerate the Integrated Technology Platform (iPIE) for centralized case management and train judges to improve technological fluency.
- **Enhancing Accountability:** Introduce Resolution Professional (RP) monitoring mechanisms and specialized training. Empower the CoC in RP appointment/removal. Enable time-bound forensic audits with inter-agency coordination.

Key Provisions of the IBC Amendment Act 2026

- **New Creditor-Initiated Insolvency Resolution Process (CIIRP):** This is a new, hybrid out-of-court resolution mechanism that allows notified classes of financial creditors to initiate early-stage resolution against eligible corporate debtors.
- **Strict timelines: Application Admission:** The National Company Law Tribunal must admit insolvency applications within 14 days of a default.
 - **Liquidation Process:** Must be completed within 180 days (extendable by a maximum of 90 days).
- **Cross-Border and Group Insolvency:** The Act provides an enabling framework for managing cross-border and group insolvency cases.
- **Advancing the Role of Creditors:** Extends the role of creditors into the liquidation stage. They are empowered to supervise the conduct of liquidation and even replace the liquidator where necessary.
- **Reinforcement of the Clean-Slate Principle:** It establishes that once a resolution plan is approved, prior claims against the corporate debtor are extinguished unless otherwise specified.

Conclusion

The IBC has fundamentally transformed India's insolvency framework by fostering credit discipline, improving recoveries, and strengthening financial stability. Addressing persistent challenges through institutional capacity building, technological integration, and effective implementation of the **IBC (Amendment) Act, 2026** will be crucial to making the insolvency regime faster, more predictable, and globally competitive.

3.4. ASSET RECONSTRUCTION COMPANIES

Why in the News?

The Supreme Court expressed concern over the alleged nexus between banks, asset reconstruction companies (ARCs), and borrowers, stating that public money given as loans cannot be allowed to go unrecovered due to weak recovery efforts.

Key observations by the Supreme Court

- **Erroneous practices by Banks:** By adopting an "over-clever device" by selling loan liabilities to ARCs at steep discounts and allowing borrowers to ultimately settle the dues by paying only a small percentage of the outstanding amount.

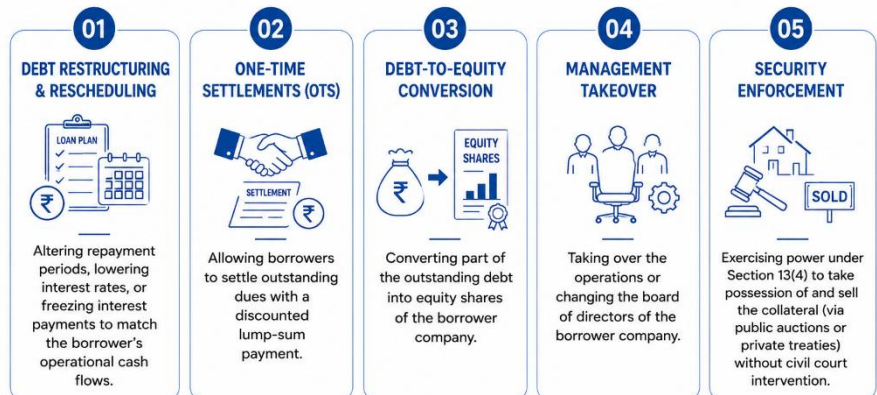
- **Need of statutory changes:** Issues relating to the **statutory framework governing ARCs** may require **reconsideration**, particularly where public money is involved.
- **Rejection of "Commercial Wisdom" Excuse:** While court acknowledged its **limitations in reviewing the commercial wisdom of banks**, it stated banks cannot use it as excuse to justify recklessly waiving loans using taxpayers' money.

About ARCs

- **Definition:** Specialized financial institutions set up to acquire and manage the non-performing assets of banks and financial institutions.
 - Under the current **RBI (Asset Reconstruction Companies) Directions, 2025**, an asset held in an ARC's own books is ordinarily classified as NPA when principal/interest remains overdue for **180 days or more**, subject to specified conditions.
- **Genesis: Narsimham Committee II (1998)** proposed the concept of **ARCs** in India to help banks clean up their balance sheets by taking over non-performing assets (NPAs or bad loans) and recovering dues.
- **Legal framework:** Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002, under its Section 3, provides for registration of an ARC in India to the Reserve Bank of India.
- **Presence:** There are **27 ARCs** registered with **RBI (2026)**.
 - **ARCIL** (Asset Reconstruction Company India Limited) was incorporated in 2002 as India's very first ARC.
- **Mandate:** Required to **resolve the assets ordinarily within 5 years of acquisition** of financial assets and redeem the **Security Receipts (SRs)** representing the assets.
 - This is extendable by the Board to a maximum of **8 years**.
- **Types:** Based on ownership, ARCs could be **public, private or public-private partnership**.
- **National Asset Reconstruction Company Limited (NARCL):** Announced in 2021-22 Budget, it was set up to take over large, complex, consortium-funded NPAs from public sector banks.
 - NARCL is a government entity, registered with the RBI as an ARC under SARFAESI Act, with majority stake held by **Public Sector Banks** and balance by private banks with **Canara Bank** being the sponsor bank.

RECONSTRUCTION AND RECOVERY TECHNIQUES

Under Section 9 of the **SARFAESI Act**, ARCs have a robust statutory toolkit to resolve distressed debts:



Read our previous coverage on SARAFESI Act, 2002

Regulatory provisions for ARCs under Reserve Bank of India (Asset Reconstruction Companies) Directions, 2025

- **Capital requirements:** Minimum **Net Owned Fund (NOF)** of ₹300 crore.
- **Maintenance of Capital Adequacy Ratio (CAR):** 15% of risk-weighted assets.
 - **Capital Adequacy Ratio (CAR)** is a regulatory standard that assesses a financial organization's financial strength such as bank by comparing its capital to risk-weighted assets, ensuring it can withstand potential losses.
- **Reporting to Indian Banks' Association (IBA):** Details of chartered accountants, advocates and valuers (who have committed serious irregularities in the course of rendering their professional services) for including in the IBA database of third-party entities involved in fraud.
- **Prohibitions:**
 - **Raising money by way of deposit.**

- **Invest in land or building**, except for its own use (up to 10% percent of its owned funds) or to carry ordinary course of its business of asset reconstruction in accordance with the SARFAESI Act.
- **Conditions for MD/CEO or Whole-time Director** of ARCs:
 - **Age limit:** 70
 - **Tenure:** 5 years at a time eligible for re- appointment, with a **maximum tenure of 15 years** continuously.
 - **Cooling period:** An individual is eligible for re-appointment in the same ARC after a minimum gap of 3 years.
- **Permitted to act Resolution Applicants:** ARC has been permitted to certain activities as Resolution Applicants under Insolvency and Bankruptcy Code (IBC), 2016 subject to the following conditions like minimum NOF of ₹1,000 crore etc.

Working of ARCs

- **Asset Acquisition:** ARCs buy stressed/NPA loans from banks/FIs on own books or via a trust for securitisation/reconstruction.
- **Security Receipts (SRs):** Since deals aren't all-cash, ARCs issue SRs to the bank redeemable only when the ARC recovers the loan. (Bank's recovery is contingent, not guaranteed)
- **Management Fee:** ARCs charge sellers 1.5–2% of asset value annually for managing recovery.

Challenges in functioning of ARCs in India

- **Poor Book Value Recovery:** Lenders and investors historically recovered **only about 15–20 % of acquisition value**, whereas ARCs recover about 30- 40% in developed distressed-asset markets.
- **Overlapping Responsibilities:** An ARC under the Insolvency and Bankruptcy Code and SARFAESI framework often acts as a **fiduciary manager of the SR trust, a secured creditor, and a bidding resolution applicant** simultaneously.
 - It creates conflict between maximizing trust recoveries and acquiring the debtor's business at lowest possible cost.
- **Focus on Recovery over Revival:** Approximately **80% of the recoveries made by ARCs have come through debt enforcement or liquidation measures** that do not lead to the actual operational revival of the business.
- **Locked Capital:** Regulatory requirements mandate that ARCs must maintain "skin in the game" by **holding a minimum of 15% of issued Security Receipts (SRs)**, which ties up their limited capital.
- **Prolonged Litigation:** Defaulting borrowers frequently drag ARCs into **protracted litigation before Debt Recovery Tribunals (DRTs) and High Courts**, delaying collateral enforcement.
- **Limited Operational Turnaround Expertise:** ARCs are primarily staffed by financial professionals, who lack sector-specific operational restructuring skills (e.g., steel, or manufacturing) required to physically run a failing enterprise.
- **Regulatory gap:** IBC bars defaulting promoters from reacquiring their own businesses through insolvency proceedings, but no such safeguard under SARFAESI; enabling **"backdoor" promoter buybacks** of their own bad assets at a discount.

Way Forward

- **Sudarshan Sen Committee (2021):** Recommended ARCs should be permitted to **sponsor SEBI-registered Alternative Investment Funds (AIFs)** as secondary vehicles to raise capital from high-net-worth individuals (HNIs), pension funds etc.
- **Regulatory Disincentives:** For delay by lenders in internally resolving NPA assets to ensure disposal of NPAs in time.
- **Acquiring Special Mention Accounts:** Capturing distress early by permitting and encouraging ARCs to **acquire Special Mention Accounts (SMA-0, SMA-1, and SMA-2)**.
- **Broaden scope of ARCs:** Consider permitting ARCs to **acquire financial assets from all regulated entities**, including FPIs, and all NBFCs irrespective of asset size and from retail investors.
- **List of NPAs:** This should be prepared by **all regulated lenders and disclosed to ARCs** after entering into a confidentiality agreement for **increasing predictability of stressed assets**.
- **Asset Acquisition from Foreign:** For debt aggregation, ARCs may be allowed to acquire stressed loans to domestic borrowers from **regulated overseas banks and FIs**.

Conclusion

Adhering to robust new regulatory reforms ARCs can play a transformative role, serving as essential pillars for India's corporate revival and sustainable economic recovery acting as impartial alternative financial mobilization tool.

3.5. SHIPPING SECTOR IN INDIA

Why in the News?

The Ministry of Ports, Shipping and Waterways launched the **Logistics Port Performance Index (LPPI)** for FY 2024-25 along with **four major digital initiatives**.

More on news

- **Logistics Port Performance Index:** Developed under the **Sagar Aankalan framework**, it is a national benchmarking mechanism to assess and improve the operational performance of Indian ports.
 - **Objective:** Strengthen India's position in global logistics and maritime trade in alignment with the **PM Gati Shakti National Master Plan, Maritime India Vision 2030** and **Maritime Amrit Kaal Vision 2047**.
 - **Segments:** Evaluates ports across **three cargo segments** - dry bulk, liquid bulk and container cargo.
 - For this, it uses operational indicators such as cargo handled, vessel turnaround time, berth idle time, pre-berthing waiting time, container dwell time and ship-berth day output.
 - **Top performers:** Paradip Port Authority (dry bulk), Sikka Port and Terminals (liquid bulk) and Mundra Port (container cargo, private) topped their respective categories.
- **Four Digital Initiatives:** Developed by the **Directorate General of Shipping (DGS)** to improve service delivery, transparency and accountability for seafarers and maritime stakeholders.

Initiative	Purpose / Key Features
e-Navik Platform	A 24×7 Maritime Grievance Redressal System that allows seafarers to file grievances through the portal, toll-free helpline, WhatsApp and email. It reinforces India's commitment to the Maritime Labour Convention, 2006 , which provides for decent working conditions and rights of seafarers.
Digital Ship Registration Module on e-Samudra Platform	Simplifies vessel registration and flagging procedures .
Medical Practitioner Module	Streamlines the registration and monitoring of doctors authorised to certify seafarers , helping reduce fraudulent certification.
Unified Ship Recycling Portal for Ship Recycling Credit Scheme	The initiative is part of the Government's ~₹70,000 crore maritime development package (2025) . • Ship owners recycling vessels at Hong Kong International Convention (HKC)-compliant Indian yards can receive a credit note equivalent to 40% of the vessel's scrap value, redeemable against new shipbuilding projects in India.

Status of Shipping Sector in India

- **Coastline & Ports:** 11,099 km coastline, 12 major ports and 200+ minor ports handling 95% of trade volume and 70% of trade value.
- **Logistics Performance:** India's ranking in the World Bank's Logistics Performance Index, 2023 **improved from 44th to 22nd position** in the International Shipments category while **seven Indian ports featured among the world's top 100 ports** in the World Bank's Container Port Performance Index 2024.
- **Shipbuilding:** ~18th globally, ~0.06% market share (China–Korea–Japan hold more than 90%). Indian-owned ships accounted for just 4.11% of overseas trade by tonnage (2023-24).

- **Ship Recycling:** World's largest ship recycling nation with share up from 30.1% (2024) to 35.4% (2025), beating the MIV 2030 target.
 - **Alang-Sosiya yard (Gujarat)** alone accounts for nearly 98% of India's ship recycling and about a third of the global volume.
- **Seafarers:** 2nd-largest supplier globally at 12.16% of the workforce (BIMCO-ICS Report 2026).

Initiatives Taken for Shipping Sector

- **Sagarmala Programme:** Launched in 2015, this is a 20-year initiative aimed at promoting port-led development and harnessing the potential of India's long coastline and extensive inland waterways.
- **Legal, Policy and Process Reforms:**
 - **New Legislations:** the Merchant Shipping Act, 2025; the Coastal Shipping Act, 2025; the Indian Ports Act, 2025; the Bills of Lading Act, 2025; the Carriage of Goods by Sea Act, 2025 etc.
 - **Maritime India Vision (MIV) 2030 and Maritime Amrit Kaal Vision (MAKV) 2047:** Objectives include –
 - Achieve a **5 percent share of the global shipbuilding market** by 2030 to be among the top ten, and rank in the top five by 2047;
 - Scale **domestic shipbuilding capacity to 3 million Gross Tonnage (GT)** annually by 2047;
 - **Infrastructure status** to Indian-flagged commercial vessels with a Gross Tonnage (GT) of 10,000 or above and to vessels of size 1,500 GT or above for vessels constructed in India.
 - **Right of First Refusal** for Indian-built vessels, and long-term chartering frameworks.
- **Coastal Cargo Promotion Scheme:** Introduced in the Union Budget 2026-27 to raise the modal share of coastal shipping and inland waterways from 6% to 12% by 2047.
- **Harit Sagar Green Port Guidelines (2023):** Dictates target CO2 reductions of over 30% by 2030 and over 70% by 2047.
 - The **2023 IMO GHG Strategy** envisages a reduction in carbon intensity of international shipping, as an average across international shipping, **by at least 40% by 2030**.
- **Shipbuilding Financial Assistance Scheme (SBFAS):** It is an extension of Shipbuilding Financial Assistance Policy (SBFAP), with outlay of ₹ 24,736 crore to address cost disadvantages of Indian shipyards vis-a-vis global shipyards.
- **Maritime Development Fund (MDF):** Its corpus of ₹ 25,000 crore for providing long term financing support to shipbuilding and maritime sector comprising a Maritime Investment Fund (MIF) of ₹ 20,000 crore and Interest Incentivisation Fund (IIF) of ₹ 5,000 crore.
- **Shipbuilding Development Scheme (SbDS):** ₹19,989 crore outlay to expand Indian shipbuilding output capacity to 4.5 million Gross Tonnage annually by setting up greenfield shipbuilding clusters and capacity expansion of the existing shipyards.
 - Government has accorded in-principle approval for the development of **three greenfield shipbuilding clusters at Andhra Pradesh, Gujarat and Tamil Nadu**.
 - Under SbDS, the **India Ship Technology Centre (ISTC)** being established for enhancing capabilities in **ship design, research and development (R&D), skill development, software**, etc.

Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC)

- HKC is a global treaty **adopted under the auspices of the International Maritime Organization (IMO)** to ensure that ships, when recycled after reaching the end of their operational life, do not pose unnecessary risks to human health, safety or the environment.
- The Convention **establishes a binding international framework** governing ship recycling by regulating both:
 - Ships, throughout their lifecycle, and
 - Ship recycling facilities, where dismantling operations are carried out.
- The Convention entered into force on 26 June 2025, making compliance mandatory for Parties.
 - Indian is a party.

Challenges to India's Shipping Sector

- **Low Global Shipbuilding Share:** India's shipbuilding capacity (~0.07 million GT) is dwarfed by China (39 million GT), South Korea (20 million GT) and Japan (9 million GT).
 - Also, long construction timelines and inconsistent quality standards reduce competitiveness of Indian-built ships.

- **High Cost of Capital:** Shipbuilding needs long-tenure, low-cost financing, but Indian yards face high domestic borrowing rate compare to those available to global competitors.
- **Import Dependence:** Heavy reliance on imported spares, engines, propulsion systems and other high-technology components increases costs and creates supply-chain vulnerability.
- **Foreign-Flag Dependence:** The country depends on foreign carriers for the bulk of its overseas trade, resulting in an estimated **USD 75-80 billion annual foreign exchange outgo** on freight.
- **Underutilised Coastal Shipping Potential:** Despite a long coastline, coastal shipping's share in the modal mix remains low compared to other large maritime economies, partly due to legacy licensing complexities now sought to be addressed by the Coastal Shipping Act, 2025.
- **Infrastructure and Logistics Bottlenecks:** Hinterland connectivity, dredging requirements for deeper drafts, and last-mile multimodal linkages remain works in progress at several ports.
- **Transshipment:** Currently, nearly 75% of India's Transshipment cargo is handled at ports outside India.
 - India recently built semi-automated transshipment port in Vizhinjam, Kerala.

Way Forward

- **Partnerships:** Strategic collaborations with advanced shipyards can help India quickly absorb technology, train its workforce, and strengthen domestic research and development.
- **Digital Technologies:** Modernising the sector through energy-efficient designs, shore power, utilising green fuels, blockchain, Internet of Things (IoT), artificial intelligence (AI), and automation.
 - This would improve India's global competitiveness in terms of operational efficiency, last-mile connectivity, higher productivity, and enhanced supply chain management.
- **Capability Development:** India must focus on building a pipeline of skilled workforce in handling container logistics, vessel traffic and integrating advanced technologies.
- **Financing:** Operationalise the MDF at scale, extend infrastructure-status benefits to enable easier bank lending.
- **Global Recognition for Recycling Yards:** Pursue inclusion of more Alang yards under the EU Ship Recycling Regulation to access high-value European tonnage and sustain India's recycling leadership.
- **Skill and Technology Upgradation:** Scale up ITI-shipyard partnerships and the India Ship Technology Centre to build a pipeline of specialised welders, designers and marine engineers, while incentivising indigenous R&D in engines, automation and green propulsion.

3.6. PRADHAN MANTRI KAUSHAL VIKAS YOJANA (PMKVY)

Why in the News?

The Parliament's **Public Accounts Committee (PAC)** expressed concerns over **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** for its performance to ensure skill development.

About PMKVY

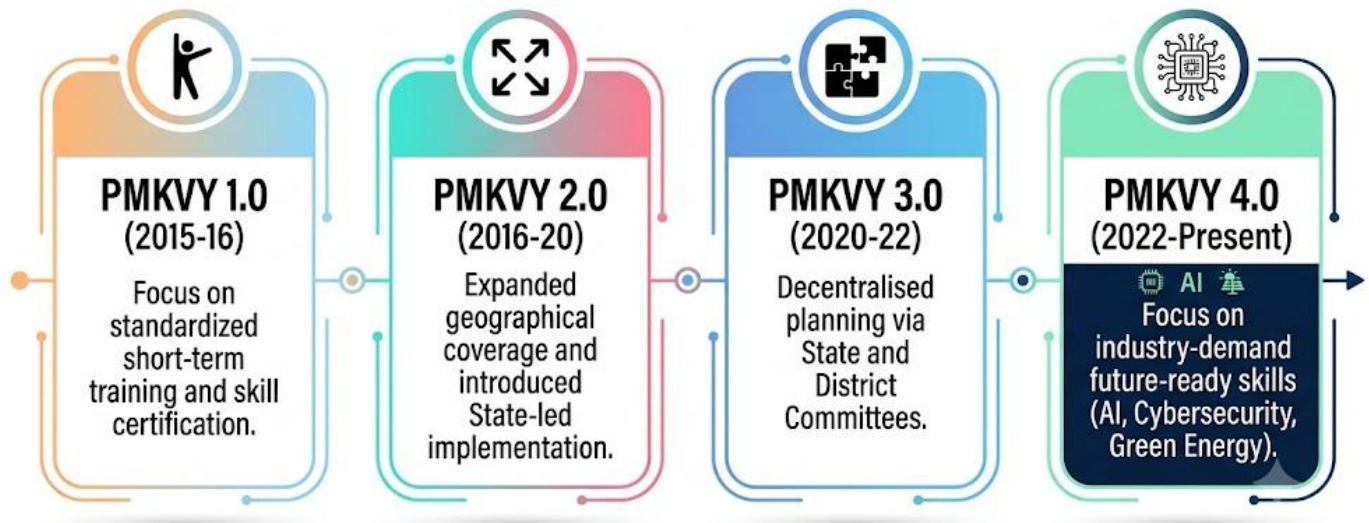
- **Launched:** 2015 by Ministry of Skill Development and Entrepreneurship (MSDE).
- **Implementing Agency:** National Skill Development Corporation (NSDC).
- **Aim:** To encourage and promote skill development in India.
- **Objectives:** To enable Indian youth to take up industry-relevant skill training to secure better livelihoods and to recognize informally acquired skills through certification.
- **Funding Mechanism:** The scheme is managed through Central and State components by earmarking 75 and 25 per cent of physical targets and financial allocations to NSDC and State Skill Development Missions, respectively.

About NSDC

- **Established:** In 2008, as a not-for-profit public limited company Companies Act, 1956.
- **Objective:** To catalyze the skilling ecosystem for private sector participation and be knowledge partner to Skill India Mission to build efficient vocational training initiatives, empowering India's youth.
- **Ministry:** It operates as a unique Public Private Partnership (PPP) model under the Ministry of Skill Development & Entrepreneurship (MSDE).
 - It has 49% of the share capital held by the government and 51% by the private sector.

PHASES OF PMKVY

AIM: To boost skill development, foster a skilled workforce, and drive economic growth in India.



Modernising India's Skill Ecosystem

Key Concerns Regarding Pradhan Mantri Kaushal Vikas Yojana

- **Demand-Training Mismatch:** Disproportionately focused on sectors with lower employment demand, such as apparel, electronics, and retail.
- **Certification Gap:** Only 1.10 crore candidates were certified against a set target of training and certifying 1.32 crore candidates.
- **Planning:** Absence of micro-level skill-gap information, long-term implementation strategy, and National Skill Development Plan.
- **Implementation:** Enrollment was done in the scheme by ignoring their age, education, work experience and lack of mechanism for verification of targeted beneficiaries.
- **Financial Mismanagement:** There were delays in release of funds under the state component. E.g. Non release of funds by NSDC to District Skill Councils.
 - Against total scheme outlay of ₹14,449 crore during three phases of PMKVY ₹10,194 crore was released of which only ₹9,261 crore was utilized.
- **Documentation Gap:** The documents produced by the implementing agencies in support of training undertaken and monitoring done by NSDC were unreliable.
- **Data Integrity and Validation Gaps:** Of 95.90 lakh participants analysed, 90.66 lakh had invalid or missing bank details, while over 12,000 bank accounts were reused for more than 52,000 candidates.
- **Infrastructure and Monitoring:** Aadhaar Enabled Biometric Attendance System (AEBAS) was not implemented under the RPL component of PMKVY, with biometric devices missing or non-functional in several training centres.
- **Weak Outcome:** Only 41% of trainees were placed highlighting weak employment outcomes.

Recommendations for PMKVY:

- **Align Skill Training with Market Demand:** Align skill training with sector- and state-specific skill gaps based on labour market demand.
- **Strengthen Strategic Planning:** Expedite preparation of the National Skill Development Plan (NSDP) and adopt a long-term skilling strategy.
- **Ensure Convergence of Skill Initiatives:** Map all Central and State skill programmes and develop a roadmap for convergence and data integration.

- **Enhance IT Governance:** Enforce IT controls under PMKVY 4.0 and implement a robust data retention policy.
- **Improve Beneficiary Identification:** Integrate UDISE data with PMKVY registration and ensure beneficiary enrolment as per eligibility norms.
- **Strengthen Assessment Mechanism:** Improve internal controls in post-training assessments to ensure transparency and quality.
- **Enhance Monitoring and Oversight:** Strengthen oversight mechanisms and enforce system validation checks for effective monitoring.
- **Improve Financial Management:** Ensure timely fund transfer, proper accounting, and avoid disruption in expenditure across PMKVY phases.
- **Institutionalise Monitoring and Feedback:** Ensure regular monitoring, evaluation, and feedback mechanisms for continuous course correction.

Conclusion

PMKVY has played a pivotal role in expanding India's **skill development ecosystem** and improving workforce employability. However, addressing gaps in **planning, governance, monitoring, and placement outcomes** is essential to enhance its effectiveness. A **demand-driven, industry-aligned, and technology-enabled** implementation will be critical to achieving the objectives of **Viksit Bharat 2047**.

3.7. A DECADE OF TOURISM-LED GROWTH

Why in the News?

The Ministry of Tourism and NITI Aayog recently launched a comprehensive report titled 'Unlocking Growth in Tourism and Hospitality Sector' (2026) to simplify regulations and attract investments.

Status of Tourism in India

- **Global Ranking:** India ranked **39th** among 119 countries in the **WEF Travel & Tourism Development Index (2024)**
- **Economy Size:** **8th largest** tourism economy (US\$231.6 billion); projected to become **4th globally** over the next decade (WTTC).
- **GDP & Employment:** Contributed **₹15.73 lakh crore (5.22% of GDP, 2023-24)** and supported **13.34% of employment (84+ million jobs)** in 2023-24.
- **Inbound Recovery:** By **August 2025**, India recorded **56 lakh** Foreign Tourist Arrivals (FTAs) and **303.59 crore** Domestic Tourist Visits.
- **2047 Potential:** India aims to move towards **100 million** inbound tourists and a **US\$3 trillion** tourism economy by 2047, requiring a major expansion in tourism investment and supply.

Significance of a strong Tourism Sector

Tourism is significant for developing economies due to three reasons:

- **Highly employment intensive:** Generates jobs across the skill spectrum – from entry-level roles in hospitality and transport to specialised roles in management, experience design, and digital services – making it a powerful driver of inclusive growth.

TYPES OF TOURISM

	Spiritual/Pilgrimage Tourism Sacred destinations like Vaishno Devi, Golden Temple, and Buddhist Circuits.	
	Medical & Wellness Tourism Affordable healthcare, Yoga/Ayurveda.	
	Adventure Tourism Himalayan trekking, skiing, rafting; 120+ new mountain peaks opened.	
	Heritage & Cultural Tourism Historical sites, architecture, and festivals (e.g., Taj Mahal, Mahabalipuram, Pushkar Fair).	
	Eco & Wildlife Tourism Sustainable tourism through Amrit Dharohar sites and wildlife sanctuaries.	
	MICE Tourism Meetings, Incentives, Conferences & Exhibitions; venues like Bharat Mandapam and Yashobhoimi.	
	Niche Segments Wedding Tourism ("Wed in India") and Cruise Tourism (National Waterways).	

- **Enables geographically distributed development:** by creating economic activity at the location of natural and cultural assets, including heritage towns, coastal regions, and pilgrimage circuits, thereby linking remote regions to income generation.
- **Serves as an efficient source of foreign exchange**

It also empowers local communities, tribal groups (Tribal Home Stays), and women (Paryatan Didi/ Mitra' initiative) and strengthens global engagement (G20 Presidency) and leadership (first Global Big Cat Summit, 2026 held in New Delhi).

Challenges in India's Tourism Sector

Despite strong fundamentals, India's tourism outcomes remain below potential. India accounts for less than 1.5% of global international tourist arrivals, significantly lower than leading economies.

On the **demand side**, visa rules and cumbersome entry processes restrict conversion of international interest into actual tourist arrivals. On the **supply side**, inadequate accommodation, transport, F&B services and tourism experiences constrain the capacity to absorb visitors

- **Regulatory fragmentation:** Tourism businesses deal with multiple Union, State and local authorities, often through sequential and overlapping approval processes. Hotels may require **~50 approvals**, while F&B establishments may need **~30 licences**.
- **Slow creation of tourism infrastructure:** A typical hotel project takes **36–48 months** to become operational compared with **12–18 months in competing ASEAN destinations**, raising financing costs and discouraging investment.
- **Restrictive and outdated regulations:** Building norms relating to FAR, parking, minimum plot size, road width and high-rise thresholds can unnecessarily increase hotel construction costs and restrict development, particularly in urban areas.
- **Restrictive visa regime:** Limited Visa-on-Arrival access, multiple e-Visa categories, prior-approval requirements and application friction weaken India's competitiveness, especially for spontaneous, short-haul and repeat tourists.
 - India's **Visa Openness Index score is 38.14**, below the global average of 40 and Asia-Pacific average of 46.
- **Socio-Economic Factors:** Currency devaluation and safety concerns, especially for women.
- **Sustainability Pressures:** Overtourism can cause **waste and water stress, ecological degradation, pressure on Himalayan and coastal ecosystems, and disruption of local cultures**, necessitating destination-level carrying-capacity management.

The constraint, lies not in tourism assets or underlying demand, but in the enabling conditions required to translate these into consistent, competitive, and highvalue tourism outcomes.

Government Initiatives

- **Swadesh Darshan (2014) & SD 2.0 (2022):** Shift from project-based to **thematic circuits**; SD 2.0 now focuses on **sustainable and experience-based destination development**
- **PRASHAD (Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive) Scheme (2014):** Upgrades pilgrimage sites; **54 projects worth ₹1,168 crore**.
- **Special Assistance to States for Capital Investment (SASCI, 2024–25):** **₹3,295.76 crore** (100% Central funding) to develop **40 iconic tourist centres** to a global scale.
- **Dekho Apna Desh (2020):** Promotes domestic tourism through webinars, pledges, and **People's Choice** poll.
- **"Incredible India" Campaign (2002):** Global branding campaign showcasing India's heritage, wildlife, and wellness to reposition it as a premier tourist destination.
- **Cruise Bharat Mission (2024–29):** Aims to make India a global cruise hub through 51 new cruise circuits and modernized cruise terminals and marinas.
- **Vibrant Villages Programme (VVP):** Promotes tourism, cultural heritage, and livelihoods in border villages.
- **Digital Integration:** e-Tourist Visa, NIDHI portals, and **Incredible India Content Hub (2024)**.

Way Forward

- **Visa Reforms:** Gradually move towards a **90-day, multiple-entry Tourist Visa-on-Arrival** for selected countries; simplify visa categories; use digital authorisation and biometric verification; improve international payment infrastructure and encourage repeat visits.
- **Streamlining Regulations:** Self-declaration for hotel classification, simpler compliance, and Entity Locker for document verification.
- **Human Capital Enhancement:** Establishing a National Institute of Hospitality (Budget 2026-27) and upskilling 10,000 tourist guides.
- **Environmental Clearances:** Dedicated State-level appraisal mechanisms for hotels; granular mapping for CRZ areas; high-resolution forest maps integrated with revenue records to reduce uncertainty in forest clearances.
- **Embracing Sustainability:** Expand Travel for LiFE and promote green destination models like Mamallapuram.
- **Data-Driven Governance:** Creating a National Destination Digital Knowledge Grid for policy, heritage management, and destination visibility.

Conclusion

Tourism has evolved into a key driver of socio-economic growth and regional development. With infrastructure expansion, niche tourism, sustainability, and human capital reforms, it can become a cornerstone of Viksit Bharat@2047.

3.8. NEWS IN SHORT

3.8.1. FIRST GLOBAL TREATY TO SET BINDING LABOUR STANDARDS FOR GIG WORK

The **ILO Convention No. 193 'Concerning Decent Work in the Platform Economy'** was adopted at the 114th session of International Labour Organization (ILO) in Geneva.

- **Enforcement:** The convention will take effect 12 months **after at least two member states ratify it, requiring governments to establish effective dispute resolution and enforcement mechanisms.**

Key Features of the Convention

- **Comprehensive Coverage:** The protections **apply to all formal and informal platform workers** (both **online** or **location-based** such as delivery, taxi).
- **Worker Classification & Fair Pay:** Governments must ensure gig workers are **correctly classified based on how their work is performed**, preventing misclassification.
 - Workers must receive **timely pay** and, if **considered employees**, at least the minimum wage.
- **Fundamental Rights & Safety:** Guarantees core rights such as **freedom of association**, **non-discrimination**, and



Read our previous coverage on Gig Workers

GIG WORKERS IN INDIA

1. MARKET GROWTH



India's gig workforce is projected to grow from **77 lakh** (2020–21) to **2.35 crore** (2029–30); currently comprising 47% medium-skilled, 31% low-skilled, and 22% high-skilled workers.

47%

Medium-skilled

31%

Low-skilled

22%

High-skilled



CODE ON SOCIAL SECURITY, 2020

2. LEGAL RECOGNITION

Under the Code on Social Security, 2020.

Definition of Gig Worker:

A gig worker is a person who performs work or participates in a work arrangement and earns from such activities outside of a traditional employer–employee relationship.



1–2%

3. SOCIAL SECURITY FUND

Aggregators must contribute 1–2% of annual turnover to fund benefits such as insurance, disability cover, health, and maternity benefits.

Insurance

Disability cover

Health benefits

Maternity benefits



4. PORTABILITY & GRIEVANCE REDRESSAL

Helplines

Facilitation Centres

Workers can register on the e-Shram portal for portable benefits, while the government may establish helplines and facilitation centres for grievance resolution.

access to social security. It also ensures a **safe working environment**, allowing workers to refuse dangerous tasks without penalty.

- **Algorithmic Transparency:** Platforms must be transparent **about automated systems used to monitor workers.**
 - Workers have the **right to request a human review** of significant automated decisions, such as account deactivations or withheld pay.
- **Data & Vulnerable Groups:** The treaty mandates **strict safeguards for personal data privacy** and includes **specific measures to protect migrant and refugee platform workers** from recruitment and employment abuses.

About ILO

- **Establishment:** In **1919 under Treaty of Versailles**; became the **first specialized agency of the UN in 1946.**
- **Members:** 187; **India is a founding Member** and has been a permanent member of the ILO Governing Body since 1922.
- **Mandate:** Promotes **social justice, decent work, and internationally recognized labour rights**, based on the principle that lasting peace rests on social justice.
- **Global Recognition:** Awarded the **1969 Nobel Peace Prize** for advancing workers' rights, social justice, and international cooperation.
- **Key Reports:** **World Employment and Social Outlook (WESO), Global Wage Report, World Social Protection Report**, etc.
- **ILO Conventions:** India has **ratified six out of the eight** core/fundamental ILO Conventions, **except -**
 - **Freedom of Association and Protection of the Right to Organise Convention, 1948** (No. 87).
 - **Right to Organise and Collective Bargaining Convention, 1949** (No. 98).

3.8.2. CAG RELEASES STATE FINANCES 2024-25 REPORT

Report provides a consolidated fiscal overview of all 28 States, enabling an inter-State and intertemporal analysis over 10 years from 2015-16 to 2024-25.

Key Highlights of the Report

- **Public Debt and Total Liabilities:** Outstanding combined **public debt stood at ₹75.52 lakh crore (23.27% of GSDP)**, while total liabilities reached **27.89% of GSDP.**
 - **Public debt** receipts constituted over 99% of total capital receipts, indicating heavy dependence on borrowings for financing expenditure.
 - **Public debt** includes Internal Debt and Loans and Advances from the Union government.
- **Fiscal Deficit:** As against the **Fifteenth Finance Commission's benchmark of 3% of GSDP, 18 States recorded fiscal deficits above the prescribed threshold** in FY 2024-25.
 - Fiscal responsibility indicators for the period 2015-16 to 2024-25 reveal that all States together remained in revenue and fiscal deficit.
- **Low Capital Expenditure:** Revenue expenditure constituted **83.41% of total expenditure**, while capital expenditure accounted for **16.59%** in FY 2024-25.
- **Share in Union Taxes and Duties:** Share of the States in devolution of taxes and duties, as percentage of the total combined revenue receipts, increased from 27.73 % in FY 2015-16 to 31.76 %.
- **Subsidies:** During the period **2015-16 to 2024-25**, subsidy expenditure remained largely in the range of **8-10% of the total revenue expenditure** of all States combined.
 - Subsidies are mainly directed toward energy utilities and the agriculture related activities.

Constraints on States' Fiscal Capacity



- **Limited Fiscal Autonomy:** Subsuming of major State taxes under GST has reduced States' fiscal autonomy and flexibility in tax rate determination.



- **Subsidy Burden:** High subsidy expenditure constrains fiscal space available for capital formation and developmental expenditure.



- **High Committed Expenditure:** E.g., Salaries, pensions, interest payments, etc.

The report highlights the need for **prudent debt management** and **fiscal discipline** to ensure sustainable State finances.

3.8.3. BASE YEAR REVISION OF THE ALL INDIA INDEX OF INDUSTRIAL PRODUCTION (IIP)

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.

- This is the **10th revision** of base year of All India IIP. The first IIP was prepared with base year 1937.

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).
- 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, Printing machinery, Sewing machines.
- 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.
- Need of Change in Base Year:** To capture **emerging sectors, changing production patterns and evolving consumption trends**, to align IIP methodology with **UN best practices** and **Include New Products & Industries** etc.

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

3.8.4. WHOLESALE PRICE INDEX (WPI)

The Ministry of Commerce and Industry released the **new series of the Wholesale Price Index (WPI) with an updated base year of 2022-23**.

- It has also **released the first editions of Output Producer Price Index (OPPI), Input Producer Price Index (IPPI), and Service Producer Price Index (Service PPI) of seven services-** Banking, Securities Transaction, Insurance, Management of Pension Funds, Railways, Passenger Air, and Telecom.
- Producer Price Index (PPI) will replace the WPI in five years.**

About WPI

- It is a **measure of the average change of prices of a fixed set of goods at the first point of bulk sale** in a commercial transaction in the domestic market over a given period of time.
- The **new series also includes new and renewable energy under electricity**.
- Composition of Basket:** Comprises 957 items categorized into **three major groups**:
 - Primary Articles
 - Fuel and Power
 - Manufactured Products (highest weight).

3.8.5. DISTRICT DOMESTIC PRODUCT (DDP)

National Statistics Office (NSO) released Guideline for Compilation of Estimates of District Domestic Product (DDP) with Base Year 2022-23.

About District Domestic Product (DDP)

- District Domestic Product (DDP) measures the **total value of goods and services produced within a district** during a given period.
 - It is the district-level counterpart of **Gross State Domestic Product (GSDP)** and **Gross Domestic Product (GDP)**.
- **Significance:** Useful for comparing economic performance between districts, identifying backward regions, planning local development programs, and assessing regional human development for computing Human Development Index.
- **Components:** Includes estimates of **Gross District Domestic Product (GDDP)**, **Net District Domestic Product (NDDP)** and **Per Capita Income**.
- **Approaches:** Income originating and Income accruing.

3.8.6. DEVELOPMENT POLICY FINANCING (DPF)

World Bank approved a \$1.5 billion financing package for India under its **DPF operation** to boost growth and jobs.

About DPF

- **Objective:** Rapidly disbursing financing to help a borrower **address actual or anticipated development financing requirements**.
 - Supports borrowers in achieving **poverty reduction, climate-friendly sustainable and inclusive growth** through program of policy and institutional actions.
 - DPF can be extended as **loans, credits/grants, or guarantees**.
- **Funds are made available based on:**
 - Maintenance of **adequate macroeconomic policy framework**.
 - Satisfactory implementation of **overall reform program**.
 - Completion of a set of **critical policy and institutional actions**.
 - Alignment with the **Goals of Paris Agreement**.

3.8.7. GLOBAL ECONOMIC PROSPECTS 2026

US-Israel war in Iran may cut global growth in 2026 as projected by **World Bank's Global Economic Prospects 2026**.

Key Findings

- **Global Growth Slowdown:** Global growth is projected to decline from **2.9% (2025)** to **2.5% (2026)**, the weakest pace since the COVID-19 pandemic.
- **Drivers of Slowdown:** US-Israel-Iran conflict and Strait of Hormuz disruptions, raising energy prices, fuelling inflation and keeping global borrowing costs elevated.
- **South Asia:** Remains the fastest-growing region, though growth may moderate from **7.0% to 6.3%** in 2026.

3.8.8. GLOBAL UNICORN INDEX 2026

India with **61 unicorns**, slipped one place to **4th position** in the **Hurun Global Unicorn Index 2026**.

About Global Unicorn Index 2026

- Artificial Intelligence (AI) **has become the primary driver of global startup growth**, pushing the number of unicorns to a **record 1,603**. (combined valuation of \$8 trillion)
- **AI unicorns** now account for **36 per cent** of the total value of all unicorns worldwide.
- **India: most valuable unicorns** are Zerodha, Zepto, Razorpay.
 - Bengaluru remained **India's unicorn capital with 25 unicorns**, followed by **Mumbai with 13**.
 - **Diaspora:** Indians co-founded 156 unicorns outside India.

3.8.9. SARTHAK-PDS

The Scheme for Assistance in Ration Transport and Handling-Income with Automation in PDS (SARTHAK-PDS) integrates two schemes:

- **Assistance to State Agencies for intra-State movement of foodgrains and FPS dealers' margin under NFSA"**
- **Scheme for Modernization and Reforms through Technology in PDS (SMART PDS).**

About SARTHAK-PDS

- **Aim:** Provides financial support for intra-state transport, handling, and FPS margins, while creating a unified, citizen-centric and interoperable PDS to improve last-mile delivery and reduce leakages.
- **Duration:** Up to 31 March 2031 (16th Finance Commission cycle).
- **Outlay:** ₹25,530 crore over five years.
- **Coverage:** Around 81.35 crore NFSA beneficiaries.
- **Key Features:**
 - Unified **national databases**, AI-enabled **analytics dashboards**, automated **grievance redressal systems**, etc to monitor distribution networks in real time.
 - **Standardised digital processes and ISO-certified protocols** to improve transparency.

PDS Issues Impact Food Security

 **PDS Issues**
Problems with food distribution like failure of PoS machines.

 **Targeting Errors**
Incorrect beneficiary identification.

 **Leakages & Diversion**
Foodgrains diverted to markets.

 **Rising Subsidy**
Increased financial burden on govt.

 **Irregular Supply**
Inconsistent food availability and quality.



About Public Distribution System (PDS)

- **Eligibility under National Food Security Act, 2013 (NFSA):** Antyodaya Anna Yojana (AAY) households are eligible to receive 35 kg of foodgrains per family per month, whereas the Priority Households (PHH) beneficiaries are eligible to receive 5 kg of foodgrains per person per month.
- **Ministry:** Ministry of Consumer Affairs, Food and Public Distribution.
- **Operated Jointly:**
 - **Centre (through Food Corporation of India):** Procurement, storage, transportation and bulk allocation of food grains.
 - **States:** Operational responsibility including allocation within State, identification of eligible families, issuing of Ration Cards and supervision of Fair Price Shops.

3.8.10. SMART WAREHOUSING SYSTEM

Launched by the Ministry of Consumer Affairs, Food and Public Distribution, the system represents the world's largest deployment of Artificial Intelligence (AI) and Internet of Things (IoT) based technologies in public sector foodgrain warehousing.

About Smart Warehousing System

- **Technologies:**
 - **Advanced gate automation using FASTag and ANPR** (Automatic Number Plate Recognition) and intelligent access control through geo-tagged smart locks;
 - **AI-enabled bag counting**, face recognition systems, object detection;
 - **IoT-based monitoring of environmental parameters**, and AI-powered surveillance for fire, smoke and rodent detection.
- **Implementation:** Implemented across 215 bag-based foodgrain warehouses of the Central Warehousing Corporation (CWC), while the Food Corporation of India (FCI) is deploying the system in an additional 150 warehouses.

Key Government Schemes for Storage Infrastructure

- 
Agriculture Infrastructure Fund (AIF):
Supports the development of warehouses, cold storage facilities, etc.
- 
Agricultural Marketing Infrastructure (AMI):
Provides financial assistance for the construction of warehouses and godowns in rural areas.
- 
World's Largest Grain Storage Plan in Cooperative Sector: Aims to develop storage and other agri-infrastructure at the PACS level.
- 
Capacity Augmentation Schemes:
Includes the construction of modernized steel silos, Asset Monetization of vacant FCI lands to build new godowns, etc.

- **Significance:** Expected to improve operational efficiency by reducing vehicle turnaround time (TAT), strengthening compliance monitoring, improving manpower productivity, enabling early hazard detection and providing real-time visibility of warehouse operations.

Food Grain Storage Systems in India

- **Centralized Storage:** Primarily handled by the Food Corporation of India (FCI), which procures grains directly or via State Government Agencies at the Minimum Support Price (MSP).
- **Decentralized Storage:** Carried out through rural godowns, Primary Agricultural Credit Societies (PACS), and on farm storage by farmers.
 - Around 60-70%, of food grain produced is stored at household level using various indigenous traditional storage structures.

3.8.11. MISSION SENEHJORI- ASSAM MUGA SILK USP

Ministry for Development of North Eastern Region launched “Mission Senehjori- Assam Muga Silk USP”.

- Mission seeks to strengthen the entire Muga silk value chain through Cluster-based Coverage under Ministry of Development of North-East Region (MDoNER) in collaboration with the Government of Assam, the Central Silk Board and other stakeholders.

About Mission Senehjori

- **Objective:** Transforming Assam's unique Muga silk sector into high-value **luxury textile ecosystem** from host-plant cultivation and silkworm seed production to reeling, weaving, branding, export promotion, digital traceability and tourism.
- **Targets by 2028:** Establishment of **5 modern Muga reeling units** and a **Muga Spun Mill**, creation of **30 FPOs**, etc.

About Muga Silk

- It is one of the 5 major natural varieties of silk. (India produces all the five).
 - Silk is a natural protein fibre produced by silkworms, primarily from the Bombyx mori species.
- **Unique Identity:** Muga silk is the **world's only naturally golden silk** and India's **first GI-tagged silk (2007)**.
- **Production:** Assam accounts for **90 percent of the world's Muga silk** production.
- **Silkworm:** It is obtained from **semi-domesticated** multivoltine silkworm, **Antheraea assamensis**.
 - It feeds on the aromatic leaves of **Som and Soalu plants** and are reared on trees similar to that of **tasar**.

TYPES OF SILK IN INDIA

MULBERRY SILK

~92% of India's silk production.
Produced mainly in **Karnataka, Tamil Nadu, Andhra Pradesh**, etc.

TROPICAL TUSSAR (KOSA)

It is tropical variety; It is **copperish colour, coarse silk**, generated by the silkworm, *Antheraea mylitta* which mainly thrive on the food plants **Asan** and **Arjun**.

TROPICAL TUSSAR (OAK TASAR)

Temperate or **Oak tasar** practiced in its sub-Himalayan belt extending from **Kashmir** to **Manipur**.

ERI SILK

Also known as **Endi** or **Errandi Silk**, it is produced from the domesticated silkworm *Philosamia ricini*, that feeds mainly on **castor leaves**.

→ The North Eastern Handicrafts and Handlooms Development Corporation Ltd. (**NEHDC**) obtained **Oeko-Tex certification** for eri silk; from Germany which will enhance the **marketability** and **export** of eri silk.



↓
Oeko-Tex is a worldwide certification for textiles **tests for harmful substances** in textile products ensuring that the final product is **safe for human use**.

3.8.12. QUEEN PINEAPPLE MISSION AND PINEAPPLE

Mission Queen Pineapple launched for promoting **GI-tagged Queen Pineapple**.

- Pineapple declared **State Fruit of Tripura**.

Mission Queen Pineapple

- **Ministry:** Ministry of Development of North Eastern Region (MDoNER) with Tripura Government.
- **Timeline:** Three-year roadmap (Q2 FY2026 to Q4 FY2028)
- **Objective:** To integrate farmers across the entire pineapple value chain from production to exports.

Pineapple (*Ananas comosus*)

- **Origin:** Native to **tropical and subtropical America**.
- **Distribution:** Introduced globally by Portuguese during the 16th century.
- **Major producers:** Costa Rica, Brazil, China, India and Thailand.
- **Fruit Type:** Botanically classified as a **Multiple Fruit (Composite Fruit)**.

3.8.13. NATIONAL SEED RESERVE (NSR)

Union Agriculture Minister announced the establishment of **National Seed Reserve** of 1 lakh 74 thousand quintals.

About National Seed Reserve (NSR)

- An intervention under **National Food Security and Nutritional Mission (NFSNM)** under **Krishionnnati Yojana (KY)**.
- **Aim:** Ensuring availability of **high quality certified and foundation seeds** for farmers, especially **during times of crisis or natural calamities**.
- **Implementing Agencies:** **National Seeds Corporation, State Seeds Corporations** and Department of Agriculture of State Governments/UTs (where State Seeds Corporations are not there).
- Seed kept in NSR shall be produced through **SATHI (Seed Traceability, Authentication and Holistic Inventory) Portal**.



Read our previous
coverage on Seed
Management

3.8.14. COMMUNITY SEED BANKS

The Bureau of Indian Standards (BIS) has released **IS 20201:2026**, a **voluntary** standard providing guidelines for the establishment and management of **Community Seed Banks (CSBs)**.

- BIS is India's **national standards body** responsible for **formulating standards, certifying quality, accrediting laboratories, and promoting consumer protection**.

About Community Seed Banks

- They are **community-managed repositories** that **conserve, regenerate, and distribute local seed varieties**.
- Act as an **in-situ conservation mechanism for agrobiodiversity**.
- Improve **climate resilience and support sustainable agriculture**.

Significance

- Helps conserve **indigenous and traditional crop varieties**.
- Enhances **resilience against climate change** impacts such as **droughts, heat stress, and erratic rainfall**.

3.8.15. STATE OF WORLD FISHERIES AND AQUACULTURE (SOFIA) 2026 REPORT

The Food and Agriculture Organization (FAO) released the report under the theme **"Blue Transformation: Turning Vision into Impact"**.

- **FAO Blue Transformation Vision (2021)** aims to transform aquatic food systems through Sustainable aquaculture expansion, Effective fisheries management, and Efficient, inclusive and Sustainable value chains.

Key Findings of the report

- **Global**
 - **Record Production: 235 million tonnes (2024)**.
 - **Aquaculture as Growth Driver:** Contributed **53% of all aquatic animal production**.
 - **Key Concern: Sustainable fish stocks declined** from 64.5% (2021) to 62.4% (2023).
- **India**
 - India produced **9% of global aquatic animal production in 2024** and ranked **2nd globally, after China**.
 - Ranked **first in inland capture fisheries; 5% of global marine capture fisheries**.

- **Second-largest aquaculture producer**, contributing **12%** of global aquaculture output.
- India is among **top five** countries (with China, Indonesia, Vietnam and Bangladesh) producing **~82% of global aquaculture output**.

Indian Initiatives

- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** Flagship scheme for sustainable fisheries development.
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF):** Concessional finance for developing fisheries infrastructure.
- **Technological interventions:** Fish Market Price Information System, digital fisheries database, Recirculatory Aquaculture Systems (RAS) and Bio-floc technology
- **Others:** Blue Revolution Scheme, National Policy on Marine Fisheries (2017), Kisan Credit Card (KCC) for Fisheries, Integrated Aqua Parks, Marine Fisheries Census 2025 etc.,

3.8.16. FCNR(B) DEPOSIT

RBI allows banks to lend against FCNR(B) (Foreign Currency Non-Resident (Bank) deposits).

About FCNR(B) Deposit

- **FCNR(B) (Foreign Currency Non-Resident (Bank) Deposit)** is a **term deposit account** to maintain deposits in **designated foreign currencies** with Indian banks, insulating them from exchange rate risk.
- **Eligibility:** Can be opened by **NRIs/OCIs** with authorised Indian banks.
- **Tenure:** Term deposits with maturity ranging from **1 to 5 years**.
- **Repatriability:** Both **principal and interest are fully repatriable**.
- **Regulator:** Governed by the **Reserve Bank of India (RBI)**.

3.8.17. REITS AND INVITS

The Reserve Bank of India allowed banks to lend directly to REITs and InvITs.

About REITs (Real Estate Investment Trusts)

- **Definition:** Companies that own, operate, or finance income-generating real estate and raise capital by issuing shares to investors.
- **Purpose:** Enable investors to earn from real estate without directly buying or managing properties.
- **Types:** Equity REITs (rental income from owned properties), Mortgage REITs (interest income from mortgages/securities), and Hybrid REITs (combination).

About Infrastructure Investment Trusts (InvITs)

- **Definition:** Collective investment vehicles that finance, own, operate and maintain infrastructure assets while pooling capital from investors.
- **Purpose:** Enable investors to earn income from infrastructure projects without directly owning or managing assets.
- **Investment Areas:** Roads, highways, telecom towers, airports, etc.



3.8.18. ZERO COUPON ZERO PRINCIPAL (ZCZP) INSTRUMENT

“The Ministry of Corporate Affairs has **enabled companies to fulfill their Corporate Social Responsibility (CSR) obligations through the ZCZP Instrument** by expanding the scope of Schedule VII of the Companies Act, 2013.”

About ZCZP Instrument

- It is a **SEBI-regulated fundraising instrument** issued by not-for-profit organizations listed on the **Social Stock Exchange** for eligible social projects.
- Unlike stocks or bonds, **it offers neither interest nor repayment of principal.**
 - Investors contribute funds to generate **measurable social impact** rather than financial returns.
- 10% Limit:** A company's expenditure on subscribing to ZCZP instruments cannot exceed **10% of its total Corporate Social Responsibility expenditure** for that specific financial year.



- Legal Provision:** CSR is a mandatory requirement for certain companies under **Section 135** of the **Companies Act, 2013**, compelling them to undertake activities that contribute to the social, environmental, and economic development of the country.



- Fund Allocation:** Companies are obligated to allocate at least **2%** of their average net profit of the preceding three years to CSR activities.



- Schedule VII** of the Act enumerates the activities that can be undertaken as CSR.

3.8.19. TRADE RECEIVABLES DISCOUNTING SYSTEM (TREDS)

RBI revises process to onboard MSMEs on Trade Receivables Discounting System (TReDS) platforms.

About TReDS

- It is an **electronic platform designed to facilitate the financing of trade receivables of Micro, Small, and Medium Enterprises (MSMEs).**
- It enables **MSME sellers to receive early payment for their invoices by getting them discounted** through multiple financiers such as banks and NBFCs.
- The **Government e-Marketplace (GeM)** has integrated **TReDS** as an additional payment mechanism to address delays in payments to MSME vendors.

3.8.20. CGSMFI-2.0

The Government of India has approved extension in validity of the **Credit Guarantee Scheme for Microfinance Institutions-2.0 (CGSMFI-2.0).**

About CGSMFI-2.0:

- Sponsored by:** Department of Financial Services, Ministry of Finance.
- Objective:** To provide guarantee coverage to eligible Member Lending Institutions (MLIs) for financial assistance extended by them to Non-Banking Financial Company-Microfinance Institutions (NBFC-MFI) and MFIs for on-lending to small borrowers.
- Eligible borrowers:** Existing or new small borrowers within the regulatory definition of micro finance as prescribed by RBI from time to time.
- Guarantee coverage:** 80% of amount in default for small, 75% for medium and 70% for large NBFC-MFIs/ MFIs.



Read our previous coverage on Microfinance

3.8.21. DRUNIX

Drunix marks **NPCI's (National Payments Corporation of India) second major open-source contribution in blockchain and tokenisation space**, following **Falcon**, which focused on production-grade blockchain network management and orchestration

- Open source software/platform** is **source code** developed and maintained through **open collaboration** that anyone can use, examine, alter and redistribute at no cost.

About Drunix

- An **enterprise-grade distributed ledger** technology designed to **help organizations build and scale tokenization platforms**, digital asset ecosystems, and multi-organization networks.
- It is a **custom-built private blockchain framework** designed and developed by **re-engineering Hyperledger Fabric**.
 - Hyperledger Fabric is an **open-source enterprise blockchain framework** developed under the **umbrella of Linux Foundation**.

About Blockchain Technology

- **Meaning: Advanced database mechanism** that allows **transparent information sharing** within a business network.
 - Stores data in **blocks that are linked together in a chain**, are chronologically consistent as one cannot delete or modify the chain **without consensus from the network**.
- **Significance:** Creates an **unalterable or immutable ledger** for tracking orders, payments, accounts; prevents unauthorised transaction entries, etc.

About Tokenisation

- **Meaning:** Process that **converts ownership rights of real-world assets** (like real estate, commodities, artworks, financial instruments) into **digital tokens secured on blockchain networks**.
- **Significance: Democratising access** to investment opportunities; new possibilities for fractional ownership, enhanced liquidity, and streamlined transaction processes.

About NPCI

- Umbrella organisation for **operating retail payments and settlement systems in India**.
- **Initiative of:** Reserve Bank of India (RBI) and Indian Banks' Association (IBA) under **Payment and Settlement Systems Act, 2007**.
- **Nature:** **"Not for Profit" Company** under Companies Act 2013.
- **Key Products of NPCI:** RuPay; Immediate Payment Service (IMPS); Aadhaar enabled Payment System (AePS); Unified Payments Interface (UPI); etc.

3.8.22. BLUE BONDS

Sagarmala Finance Corporation, India's first maritime-focused state-owned non-banking financial company (NBFC), is set to launch India's **first blue bonds** this fiscal year.

About Blue Bonds:

- They are innovative **financing instruments** that earmark funds **exclusively for ocean-friendly projects** and **critical clean water resources protection**.
- The **Republic of Seychelles** launched the **world's first sovereign blue bond in 2018**.

3.8.23. PRICE STABILISATION FUND

Cabinet approved Price Stabilisation Fund for Scheduled Indian Airlines towards ATF pricing.

About the Fund

- **Corpus:** Up to ₹10,000 crore.
- **Purpose:** Stabilise Aviation Turbine Fuel (ATF) prices amid global fuel price volatility.
- **Support Mechanism:** Interest-free advance to Oil Marketing Companies (OMCs) to compensate from losses from elevated global prices.
- **Other: Fixed ATF Price Arrangement** for domestic and international operations, **Exclusive rights of ATF supply to OMCs**.
- **Duration: 36 months** (subject to annual review).
- **ATF Significance:** Accounts for nearly **40% of airline operating costs**.

4. SECURITY

4.1. MULTI-LAYERED BALLISTIC MISSILE DEFENCE (BMD) AND ANTI-SHIP MISSILE-MEDIUM RANGE (NASM-MR)

Why in the News?

Defence Research and Development Organisation (DRDO) has successfully demonstrated multi-layered defence against long range ballistic missiles and anti-ship capability at medium range.

About Ballistic Missile Defence System (BMD)

- **Definition:** A BMD system is an advanced network of radars, command centres, and interceptor missiles designed to detect, track, and destroy incoming ballistic missiles.
- **Flight Trajectory:** Ballistic missiles are weapons initially powered by rockets that then follow an unpowered, free-falling trajectory toward their targets.
- **Core Elements:** Every ballistic missile is composed of three essential elements: a propulsion system, a precise guidance system, and a payload.
 - The payload of these missiles can be armed with conventional explosives, biological, chemical, or nuclear warheads.
- **Notable Examples:** Israel's Iron Dome, US THAAD, Russia's S-400.



India's Ballistic Missile Defence Programme

- **Programme Inception:** Initiated by the DRDO in 1999.
- **Phase-I Deployment:** Successfully established a shield against threats up to a 2,000 km range using the exo-atmospheric Prithvi Defence Vehicle (PDV) and the endo-atmospheric Advanced Air Defence (AAD) interceptor systems.
- **Phase-II Success:** In June 2026, India successfully completed Phase-II testing with its AD-1 and AD-2 interceptors, achieving the elite capability to neutralize 5,000 km-class intermediate-range and intercontinental ballistic missiles.

- **Phase-III Interceptors (AD-AH and AD-AM):**

- **Purpose:** Developing **Phase-III AD-Anti Hypersonic and AD-Anti Missile interceptors** to counter next-generation aerial threats beyond the capability of existing BMD systems.
- **Key Targets:** Hypersonic Glide Vehicles (HGVs) with unpredictable flight paths and Multiple Independently Targetable Re-entry Vehicles (MIRVs).
- **Strategic Significance:** Closes a critical gap in India's missile defence against advanced and highly manoeuvrable missile arsenals, particularly those of **China**.

Classification of India's Ballistic Missiles by Range:

- Short-range (under 1,000 km). **Example: Prithvi-II** (Range: ~350 km).
- Medium-range (1,000-3,000 km). **Example: Agni-II** (Range: ~2,000 km).
- Intermediate-range (3,000-5,500 km). **Example: Agni-IV** (Range: ~4,000 km)
- Intercontinental ballistic missiles (ICBMs) capable of traveling over 5,500 km. **Example: Agni-V** (Range: ~5,500–8,000 km)

Naval Anti-Ship Missile-Medium Range (NASM-MR)

- **Developed by:** DRDO. Indigenous, all-weather, over-the-horizon cruise missile.
- **Flight Profile:** The missile demonstrated low-level sea-skimming flight capabilities during its testing.
- **Navigation and Accuracy:** It is equipped with pinpoint navigation systems and exhibits high terminal accuracy against maritime targets.

Significance of BMD

- **Strategic Shield:** A BMD system is strategically critical because it provides a layered defensive shield that severely complicates an adversary's strike planning.
- **Asset Protection:** It protects a nation's high-value military assets, strategic command centres, and civilian populations from incoming ballistic attacks.
- **Second-Strike Survivability:** By defending strategic infrastructure, the system ensures that a nation can preserve its second-strike retaliatory capabilities after an initial attack.
- **Decision-Making Time:** The system affords political leadership vital time for crisis decision-making during high-intensity escalations.
- **Deterrence Against Adversaries:** Strengthens India's defence against advanced ballistic missile arsenals of adversaries such as **China** (DF-21, DF-26, DF-41) and **Pakistan** (Nasr, Shaheen, Ghauri).

Conclusion

India's evolving multi-layered Ballistic Missile Defence architecture, complemented by advanced systems like the NASM-MR, marks a decisive shift towards integrated multi-domain warfare capabilities. By strengthening deterrence, these indigenous technologies reinforce India's strategic autonomy and enhance its ability to maintain credible defence in an increasingly contested security environment.

4.2. TECHNOLOGY-DRIVEN WARFARE

Why in the News?

Union Science and Technology Minister Dr Jitendra Singh said that technology-driven warfare is redefining national security.

More on the News

- Experts believe that the future of national security will be **shaped by the convergence of Artificial Intelligence (AI), Quantum Technologies, Biotechnology and Space capabilities**.



ROLE OF DIFFERENT TECHNOLOGIES IN THE MILITARY DOMAIN



1 ARTIFICIAL INTELLIGENCE (AI)

Enhances ISR, target detection, decision support, autonomous systems, predictive maintenance and logistics optimization.

2 QUANTUM TECHNOLOGY

Enables secure communication, advanced computing, precise navigation without GPS and stealth detection.

3 CYBER TECHNOLOGY

Protects military networks, enables offensive cyber operations and secures command-and-control systems.

4 SPACE TECHNOLOGY

Provides satellite communication, ISR, precision navigation, missile warning and space-domain awareness.

5 UNMANNED SYSTEMS

Offers surveillance, precision strikes, swarm attacks and logistics support with reduced human risk.

6 ROBOTICS & AUTONOMOUS SYSTEMS

Support EOD, combat operations in hazardous areas, autonomous patrols and logistics, minimizing soldier exposure.

7 BIG DATA & CLOUD COMPUTING

Integrates data from multiple sources, enables real-time analytics and faster command decisions.

8 INTERNET OF THINGS (IoT)

Connects sensors and platforms for smart operations, health monitoring and predictive maintenance.

9 ELECTRONIC WARFARE (EW)

Jams enemy systems, intercepts signals, gathers intelligence and ensures spectrum dominance in operations.

10 HYPERSONIC TECHNOLOGIES

Delivers high-speed precision strikes, reduces enemy response time and enhances strategic deterrence.

11 BIOTECHNOLOGY

Enhances soldier performance, provides rapid diagnostics, bio defence and bio-surveillance against biological threats.

12 ADVANCED MATERIALS & NANOTECHNOLOGY

Develops lightweight armour, stealth materials, stronger platforms and advanced sensors.

13 ADDITIVE MANUFACTURING (3D PRINTING)

Enables rapid production of spare parts, on-site manufacturing and faster repair with reduced logistics burden.

14 DIRECTED ENERGY WEAPONS

Counters drones and missiles, provides precision engagement at low cost and protects critical assets.

15 5G & ADVANCED COMMUNICATIONS

Ensures secure high-speed connectivity, real-time data sharing and supports multi-domain network-centric operations.

India's Initiatives for technology integration in defence

- **Innovations for Defence Excellence (iDEX):** Promotes indigenous defence innovation through startups, MSMEs and academia in AI, drones, cyber and autonomous technologies.
 - **ADITI:** ₹750 crore (2023–26) iDEX scheme providing grants up to ₹25 crore for critical technologies like AI, quantum, semiconductors and autonomous systems.
- **National Quantum Mission (NQM):** Develops quantum communication, computing and sensing for secure military communications and future defence applications.
- **Military Quantum Mission Policy Framework (2026):** Roadmap for integrating quantum technologies across the Tri-Services.
- **Technology Roadmap for Unmanned Aerial Systems (UAS):** Guides indigenous development of drones, loitering munitions and autonomous aerial platforms.
- **Defence AI Council (DAIC) & Defence AI Project Agency (DAIPA):** Lead AI research, development and deployment across the armed forces.
- **Defence Space Agency (DSA):** Coordinates military space operations, satellite communications and ISR.
- **Defence Cyber Agency (DCA):** Leads cyber defence and offensive cyber operations to secure military networks.

Challenges in Technology Adoption

- **Skill Shortage:** Shortage of AI, data science and cyber warfare specialists in the Armed Forces.
- **Training Gaps:** Limited expertise to operate, adapt and deploy advanced AI and cyber systems.
- **Cyber Law Limitations:** Existing laws do not adequately address cyber warfare or state-sponsored cyber-attacks.
- **Intellectual Property Roadblocks:** Inadequate AI-specific IP laws hinder defence innovation and research.



Read our previous
coverage on Quantum
Technologies in
Armed Forces

- **Lack of Design Sovereignty:** Dependence on foreign platforms limits integration of advanced indigenous technologies.
- **Malware Risks:** Imported defence systems increase the risk of embedded malware and cyber vulnerabilities.
- **Project Discontinuations:** High costs have led to cancellation of key modernisation projects such as the Battlefield Management System (BMS).
- **Gestation Periods:** Weak civil-military collaboration delays defence R&D and technology induction.
- **AI "Black Box" Issues:** Opaque AI decision-making reduces explainability and reliability.

Conclusion

As warfare rapidly evolves from platform-centric to technology-centric, India's security will increasingly depend on its ability to integrate AI, quantum technologies, cyber capabilities, space assets, and autonomous systems into a cohesive defence ecosystem. Strengthening indigenous innovation, fostering civil-military collaboration, and ensuring ethical, secure, and resilient adoption of emerging technologies will be crucial to achieving strategic autonomy and maintaining a credible deterrence in the future battlespace.

4.3. ILLEGAL IMMIGRATION

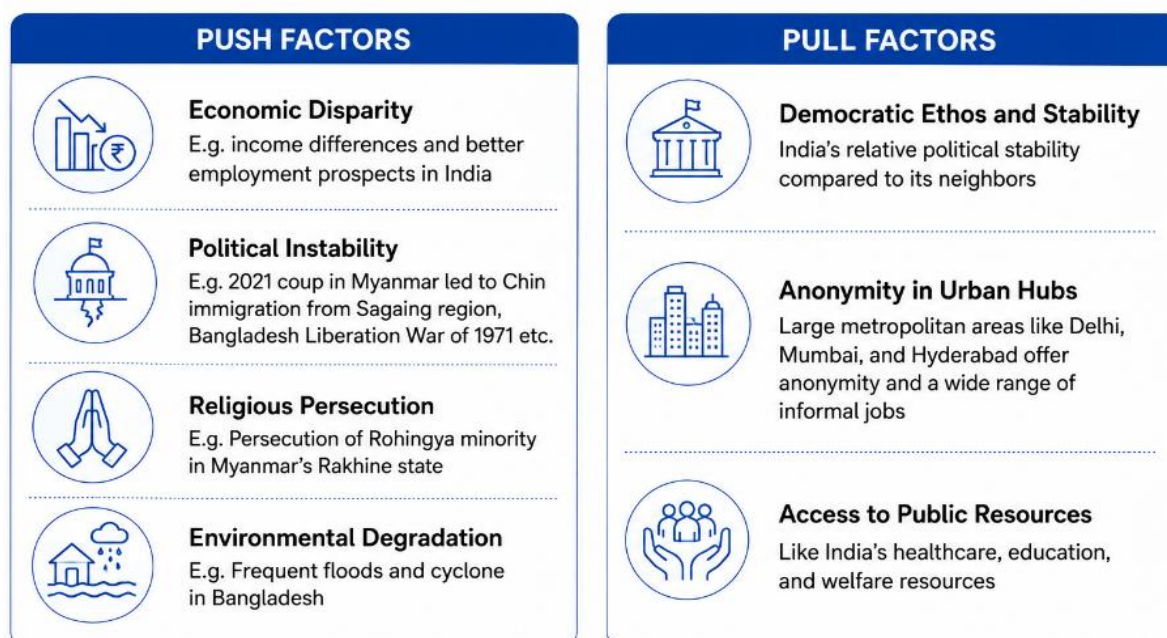
Why in News?

Government of India constituted '**High-Level Committee on Demographic Change**' to study the Unnatural Demographic Change in India due to Illegal immigration and other reasons.

More on News

- **Composition:** Justice P. P. Navlekar (Chairman), Census Commissioner, and 3 other members.
- **Terms of reference for committee-**
 - **Study demographic** change its causes and challenges e.g. religious or social changes.
 - **Recommend a time-bound mechanism** for identification, detention, and deportation of **illegal immigrants**.
 - **Suggest institutional mechanisms** to strengthen border management, population stabilisation, identification systems, and continuous monitoring of demographic trends.
 - **Propose a comprehensive policy framework** for Centre-State coordination and other measures to address challenges arising from demographic changes and **illegal immigration**.

Causes of Illegal Immigration to India



About Illegal immigration in India

- **Citizenship Act, 1955** defines an illegal migrant as, a foreigner who enters India
 - without a valid passport/prescribed travel documents, or
 - with a passport/prescribed travel documents but remains in India beyond the permitted time.
- **Citizenship amendment act 2019:** Created an exemption for Hindu, Sikh, Buddhist, Jain, Parsi and Christian immigrants from Pakistan, Afghanistan and Bangladesh who entered India before December 31, 2014.
- **Regional Hotspots:** West Bengal, Assam, Tripura, and Mizoram

Challenges in managing Illegal migration

- **Porous Borders:** E.g. Nearly 25% of the border with Bangladesh is riverine or difficult terrain, making it impossible to fence completely and easy to exploit.
- **Policy issues:** Union government formulates immigration policy, but states often implement it, which can cause delays.
- **Human Trafficking:** Smuggling migrants is a highly profitable activity.
- **Identification difficulties:** Due to common identities across borders and easy access to forged documents.
- **Institutional gaps:** Like lack of enforceable deportation protocol or centralized deportation authority; Poor integration between enforcement agencies such as police, intelligence services, border forces; Inadequate Use of Technology and Data Analytics; Overburdened security forces due to internal tasks etc.
- **Refugee vs. Illegal immigrant:** India has also not signed 1951 Refugee Convention or its 1967 Protocol complicating legal framework.
 - E.g. **Immigration and Foreigners Act, 2025** does not explicitly distinguish between refugees and illegal immigrants

Impact of Illegal Migration

- **National Security:** Illegal migrants often reside in unregulated areas which can enable extremist infiltration.
- **Narcotics and Arms Smuggling:** Migrants are frequently used as carriers due to their anonymous status and economic desperation.
- **Demographic shift:** E.g. Influxes in Assam, West Bengal etc. caused demographic changes, communal unrest, and cultural dilution especially for tribals.
- **Economic Pressure:** Illegal migration puts a strain on limited public resources such as subsidized food, and causes land encroachment, displacement of local worker.

Steps taken to counter illegal immigration

- **Immigration and Foreigners Act, 2025:** It registers foreigners and penalises Illegal entry up to 5 years' imprisonment, ₹5 lakh fine, or both.
- **Citizenship (Amendment) Act (CAA), 2003:** Calls for issuance of National Identity Cards, and the maintenance of a National Register of Indian Citizens.
 - National Register of Citizens was implemented in Assam under Citizenship act 1955 and 2003 rules due to supreme court orders under Assam Public Works v. Union of India (2019) case.
- **Comprehensive Integrated Border Management System:** For situational awareness through technology and intelligence along Pakistan and Bangladesh borders. E.g. BOLD-QIT along Bangladesh border.
- **Foreigners Tribunals:** Under Foreigners (Tribunals) Order, 1964, under Foreigners Act, 1946. (superseded by Immigration and Foreigners Order, 2025) for adjudicating whether a person is a foreigner or not.

Key judgements related to illegal immigration

- **Mohammad Salimullah v. Union of India (2021):** It allowed deportation of Rohingyas but only after following due-process.
- **National Human Rights Commission v. Arunachal Pradesh (1996):** In the case of Chakma refugees, the Court held that Article 21 includes foreigners, and prohibited the state from forcibly evicting them without due process.

Way Forward

- **Bilateral Agreements:** With neighbours for time-bound nationality verification and repatriation protocols.
- **Central authority:** Under Ministry of Home Affairs for monitoring and coordination between states.
- **Smart Border Infrastructure:** Drones, motion sensors, satellite tracking, AI-powered CCTV, thermal imaging, and night vision cameras along borders.
- **Leverage Technology:** E.g. AI and data analytics to identify forged documents, digitally encrypted Smart Citizenship Identity Card.
- **National Refugee Law:** To distinguish asylum seekers from illegal migrants and provide for identification.

Conclusion

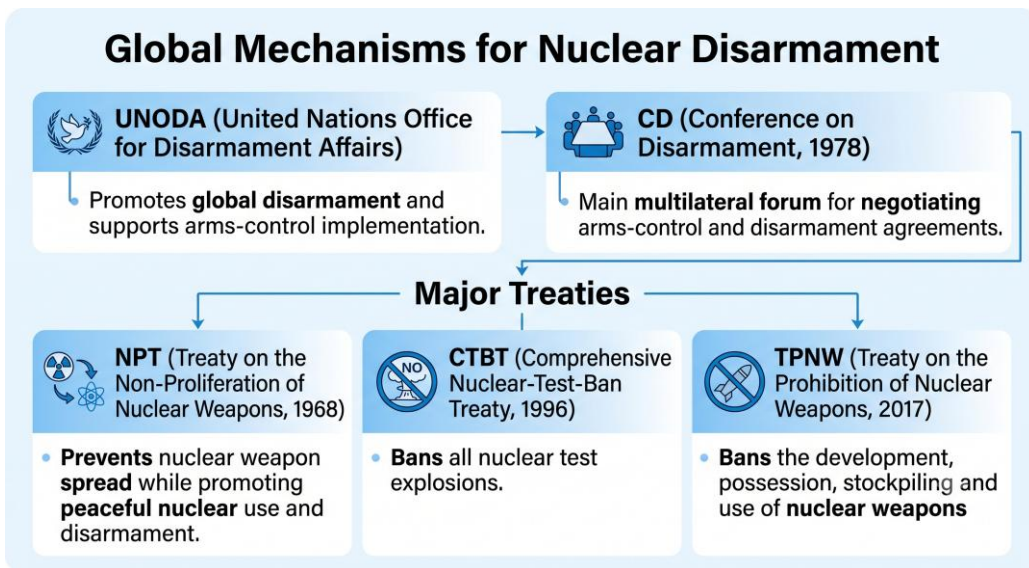
Managing illegal immigration requires a balanced approach that safeguards national security and demographic stability while upholding constitutional values and humanitarian principles through robust border management, effective institutional coordination, and a clear legal framework for refugees and illegal migrants.

4.4. NEWS IN SHORTS

4.4.1. STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE (SIPRI) YEARBOOK 2026

Key Highlights of the Report

- **Total Nuclear Weapons:** approximately **12,187 nuclear warheads** as of January 2026.
 - **India** increased its nuclear warheads to an estimated **190 (China 620, Pakistan 170)**, of which **12 warheads are deployed on missiles**.
- **Global Military Expenditure:** reached a record **US\$ 2.9 trillion in 2025**, marking the **11th consecutive year of increase**.
 - India ranked as the **5th largest military spender globally with US\$ 92.1 billion in 2025 (USA- Largest at \$954 billion)**.
 - **Arms Imports:** India remained the **2nd largest arms importer (~8% share)** in the world **after Ukraine**.
 - **Arms Exports:** **USA (42% share)**, France, Russia, Germany and China accounted for **70%**.
- **Global Armed Conflict:** The number of interstate armed conflicts doubled from **3 in 2024 to 6 in 2025**, highlighting rising geopolitical instability.
- **Techno-Strategic Warfare:** Growing use of **AI, drone swarms, autonomous weapons, cyber tools, and weaponization of critical minerals, semiconductors and supply chains** is reshaping modern warfare and geopolitical competition.



4.4.2. SHANGRI-LA DIALOGUE

India has signed a deal with **Vietnam for supply of BrahMos at the Shangri-La Dialogue in Singapore.**

- **BrahMos is a supersonic “Fire and Forget” cruise missile with Mach 2.8 speed**, stealth capability and a 290 km range.

About Shangri-La Dialogue

- It is recognised as **Asia's premier defence summit, held annually in Singapore** and organised by **International Institute for Strategic Studies (IISS)**.
- It brings together **global defence leaders to discuss major security challenges**.
- It serves as a platform for strategic debates, bilateral talks and defence cooperation.

4.4.3. NETRA AIRBORNE EARLY WARNING AND CONTROL (AEW&C) SYSTEM

DRDO has achieved Final Operational Clearance (FOC) for the **indigenous Netra Airborne Early Warning and Control (AEW&C) system**.

- **AEW&C System** consists of sensors mounted on an aircraft, for locating and providing early warning of airborne & sea surface targets and hostile emissions.
- Initial Operational Clearance (IOC) for Netra was accorded in 2015, inducted into the IAF in 2017.

About Netra AEW&C System

- Indigenously developed by **DRDO's** Centre for Airborne Systems with **IAF** and Indian industry.
- **Platform:** Mounted on Brazilian **Embraer EMB-145I** aircraft.
- **Features:** Active Electronically Scanned Array (AESA) **radar**, Identification Friend or Foe (IFF), **secure** electronic and communication support, improved low-flying target detection, etc.
- **Significance:** India's "**eye in the sky**" for airborne and maritime surveillance; made India the **5th country** with indigenous AEW&C capability.
- **Operational Record:** Proved effective during **2019 Balakot strikes, Operation Sindoor (2025)**.

4.4.4. MILITARY EQUIPMENTS IN NEWS

- **RudraM-II:** India successfully flight-tests indigenous RudraM-II Missile.
 - Indigenous **air-to-surface missile** launched from an airborne platform.
 - **Developed By:** Research Centre Imarat, Hyderabad a nodal laboratory of Defence Research and Development Organisation (DRDO) and other organizations.
- **5th Generation Su-57 :** The Russian President has offered India **Russia's fifth-generation stealth aircraft Sukhoi Su-57** and proposed its joint production in India.
 - **Capable of acting as an airborne command centre:** including for unmanned aerial vehicles.
 - **Stealth Capabilities:** Reduces radar, infrared, and visual signatures to evade detection.
 - **Supercruise:** Sustains supersonic speeds without afterburners, improving range and fuel efficiency.
 - **Integrated Avionics:** Fuses data from multiple sensors for superior situational awareness.
 - **Advanced Networking:** Enables secure, resilient, and real-time communication with allied platforms.
 - **Other 5th Gen Jets:** US F-22 Raptor and F-35 Lightning II, China's Chengdu J-20 and Shenyang J-35, India's AMCA (Advanced Medium Combat Aircraft) in pipeline.
- **Long Range Land Attack Cruise Missile (LRLACM):** Defence Research & Development Organisation (DRDO) conducted a successful flight-test of LRLACM.

- LRLACM is an **indigenously developed missile**, as the successor to the Nirbhay programme.
- Terrain-hugging flight, using hills and valleys to avoid radar detection
- Reported range of 1,000 km.
- Nodal Laboratory: Aeronautical Development Establishment, Bengaluru.

4.4.5. EXERCISES IN NEWS

- **Exercise PRAGATI:** India concluded Maiden Multilateral Exercise PRAGATI (Partnership of Regional Armies for Growth And Transformation in the Indian Ocean Region) 2026 for Indian Ocean Region Partners.
 - **Participating Nations:** India, along with **12 friendly regional partners**- Bhutan, Cambodia, Indonesia, Laos, Malaysia, Maldives, Myanmar, Nepal, Philippines, Seychelles, Sri Lanka, and Vietnam.
- **Khaan Quest:** India will participate in 23d edition of Khaan Quest 2026 exercise.
 - Started as a bilateral event between USA and Mongolian Defence Forces in 2003.
 - **From the year 2006 onwards**, the exercise graduated to a **Multilateral Peacekeeping Exercise**.



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Highlights of the Program

- Coverage of the entire UPSC Prelims and Mains Syllabus
- Development of Advanced answer writing skills
- Highly experienced and qualified team of senior mentors
- Special emphasis to Essay & Ethics

5. ENVIRONMENT

5.1. ACCESS AND BENEFIT SHARING (ABS) FRAMEWORK

Why in the News?

India's **Access and Benefit Sharing (ABS)** framework under the **Biological Diversity Act, 2002** has mobilized more than Rs 266 crore towards benefit sharing and disbursed around Rs 145 crore to beneficiaries.

More on the News

- **Red Sanders** accounted for the highest share of Access and Benefit Sharing (ABS) realization at 45%, followed by the **seed sector (32.3%)** and the **pharmaceuticals and AYUSH sector (13.8%)**.
- India's ABS framework continues to serve as a globally recognized model for translating biodiversity conservation into tangible benefits for people and nature.

About Access and Benefit Sharing (ABS) Mechanism

- **Definition:** ABS is a framework ensuring that when biological resources (plants, animals, microorganisms) or associated traditional knowledge are utilized, the resulting benefits are shared fairly with the indigenous and local communities who conserve them.
- **Parent Treaty: Nagoya Protocol** (came into force in 2014) under Convention on Biological Diversity.
 - It also contributes to the **Kunming-Montreal Global Biodiversity Framework**.
- **Principles of ABS Mechanism**
 - **State Sovereignty:** Recognizes the sovereign rights of States over natural resources within their jurisdictions.
 - **Prior Informed Consent (PIC):** Users must obtain formal permission from the Competent National Authority of the provider country before accessing genetic resources.
 - **Mutually Agreed Terms (MAT):** An agreement negotiated between the provider and user detailing the conditions of access, usage limits, and the exact benefits to be shared.
- **Other Key Features:**
 - **ABS Clearing-House:** It is a platform for exchanging information on access and benefit-sharing established by Article 14 of the Nagoya Protocol.
 - **Cali Fund:** Launched at COP16, 2025, it aims to boost **biodiversity finance** for the **Fair and Equitable Sharing of Benefits** from the use of **Digital Sequence Information on Genetic Resources (DSI)** is a policy term for digital representations of genetic resources)
- **India's Legal Framework on Access and Benefit Sharing (ABS):**
 - **Biological Diversity Act, 2002:** India implements ABS through a **three-tier system**:
 - **Centre:** National Biodiversity Authority (NBA)
 - **State:** State Biodiversity Boards (SBBs)



Read our previous coverage on **Biological Diversity (Access and Benefit Sharing) Regulation 2025**

Other Global Treaty with Access and Benefit Sharing Framework:

International Treaty on Plant Genetic Resources for Food and Agriculture

- **Genesis:** 2001, entered into force in 2004.
- **Nature:** Legally Binding.
- **Administered by:** FAO
- **Key Features:** The Treaty facilitates **access to the genetic materials of the 64 crops in the Multilateral System for research, breeding and training for food and agriculture.**
 - The Treaty **prevents the recipients of genetic resources from claiming intellectual property rights.**
 - Those who access genetic materials **agree to share any benefits from their use through benefit-sharing mechanisms established by the Treaty.**
 - **Benefit Sharing Fund (2009):** It is the operational mechanism for receiving, utilizing and sharing the monetary benefits arising from the Multilateral System.
 - The BSF enables small-scale farmers, scientists and breeders to tap into the International Treaty's global gene pool.
 - It also contributes to implementation of SDGs.

- **Local Level:** Biodiversity Management Committees (BMCs).
- These statutory bodies manage access, benefit sharing, and distribution under the Biodiversity Act 2002.
- ABS also supports the **National Biodiversity Strategy and Action Plan (NBSAP) 2024-2030**.
- **Biological Diversity (Access and Benefit Sharing) Regulation 2025 (replacing 2014 rules):** It led to the **inclusion of Digital Sequence Information**, rules for quantum of benefit sharing based on annual turnover, transfer of research results to NBA, etc.
- **Divya Pharmacy v. Union of India, 2018 Case:** This landmark case judgement affirmed domestic companies' obligations under Fair and Equitable Benefit Sharing, thereby strengthening regulatory authority of State Biodiversity Boards.
 - The decision balances economic interests with ecological sustainability and social equity.

Significance of ABS Mechanism

- **Ethical Equity & Social Justice:** The Tropical Botanic Garden and Research Institute (TBGRI) shared 50% of the license fee and royalty from the drug Jeevani (developed using the anti-fatigue properties of the Arogyapacha plant) with the Kani tribe.
- **Prevention of Biopiracy:** India's successful revocation of foreign patents on Turmeric (for wound healing), Neem (for anti-fungal properties) by utilizing historical documentation.
 - It was for the first time that a patent based on traditional knowledge of a developing country was successfully challenged.
- **Incentivizing Conservation:** The Red Sanders benefit-sharing model in Andhra Pradesh, where a portion of the revenues generated from the legal auction and export of seized Red Sanders wood is channelled back to local Biodiversity Management Committees (BMCs) for forest conservation.
- **Recognition of Traditional Knowledge (TK):** The Habitual Tribal Knowledge of Baiga Tribe (Madhya Pradesh), where commercial research on local medicinal herbs requires approval from the local BMCs under the Biological Diversity Act, 2002, ensuring tribal consent.
- **Regulatory Transparency & Legal Certainty:** PepsiCo collaborated with National Biodiversity Authority (NBA) while sourcing seaweed for commercial agricultural bio-stimulants in Tamil Nadu.
- **Alignment with Global Frameworks:** Implements the objectives of the Convention on Biological Diversity (CBD) and the Nagoya Protocol at the national level.

Way Ahead

- **Empower Indigenous Communities:** Legally recognize customary laws and integrate them into ABS frameworks for benefit of indigenous communities.
- **Digitize Documentation:** Use technology to speed up People's Biodiversity Register (mandated by Biodiversity Act 2002) creation, ensuring protection and transparency.
 - The register contains **comprehensive information on availability and knowledge of local biological resources**, their medicinal or any other traditional knowledge associated with them.
- **Research Use:** There is a need to set clear rules distinguishing academic from commercial research to prevent misuse.
- **Improved Monitoring:** Establish a centralized digital platform linking NBA, SBBs (state Biodiversity boards) and BMCs (Biodiversity Management Committees) for real-time compliance tracking.

Conclusion

By strengthening community rights, ensuring transparent governance, and aligning conservation with sustainable economic development, India's ABS framework can transform biodiversity from a resource vulnerable to exploitation into a driver of inclusive growth, ecological security, and intergenerational equity.



CHALLENGES IN ABS IMPLEMENTATION

1 TRANS-BOUNDARY RESOURCES GENETIC RESOURCES & KNOWLEDGE cross political borders. Difficulty in obtaining PRIOR INFORMED CONSENT (PIC) & FAIR BENEFIT SHARING .	2 WEAK CAPACITY Insufficient human and institutional capacity to implement CBD, protocols, & national biodiversity laws.	3 LIMITED RECOGNITION OF CUSTOMARY LAW Customary laws for traditional knowledge are NOT ADEQUATELY INTEGRATED into formal legal or IP systems. Limits indigenous governance recognition.	4 CUMBERSOME DOCUMENTATION PROCESS Documenting biodiversity & knowledge is TIME-INTENSIVE & TECHNICALLY COMPLEX , essential for protection.
5 ACADEMIC VS COMMERCIAL RESEARCH Difficult to distinguish between academic research and commercial studies. Leads to potential misuse of exemptions & bypassing sharing requirements.	6 LACK OF A ROBUST MARKET SYSTEM LONG & INEFFICIENT VALUE CHAINS. Reduce financial returns to local communities.	7 MONITORING ISSUES Multiple agencies & OVERLAPPING MANDATES lead to poor coordination & enforcement of regulations.	8 LOW AWARENESS Public understanding of CBD, Nagoya Protocol, & BIOLOGICAL DIVERSITY ACT, 2002 remains low.

5.2. GLOBAL CHEMICALS MONITORING PROGRAMME (GCMP)

Why in the News?

The **United Nations Environment Programme (UNEP)** and **Global Environment Facility (GEF)** recently launched the **Global Chemicals Monitoring Programme**.

About GCMP

- The initiative is designed to support the **evaluation of the effectiveness of the Stockholm Convention on Persistent Organic Pollutants (POPs)** and the **Minamata Convention on Mercury**.
 - It aims to **reduce global pollution while strengthening developing countries' capacity** to monitor hazardous chemicals and support evidence-based policy making.
- Financing: US\$ 23.5 million initiative financed by GEF (backed by US\$ 50 million in co-financing).**

About Stockholm Convention on POPs

- It is a **legally binding global treaty** to protect human health and the environment from Persistent Organic Pollutants (POPs).
 - POPs are **toxic, carbon-based synthetic chemicals** that **resist degradation, persist in the environment for long periods** and pose serious risks to **human health and ecosystems(bio accumulation)**. Ex: **aldrin, chlordane, DDT etc.**
- Adopted:** 22 May 2001, Stockholm, Sweden.
- Entered into force:** 17 May 2004.
- India ratified in 2006 but utilized Opt-Out Clause**, meaning any new amendment (or new POP added) **does not automatically bind India**.

About Minamata Convention on Mercury

- A **legally binding global treaty** to protect human health and the environment from the adverse effects of mercury.
 - It promotes a life-cycle approach to mercury management, covering mining, trade, use, emissions, waste, and disposal through international cooperation.

- **Adopted:** 10 October 2013 at the Diplomatic Conference in Kumamoto, Japan.
- **Entered into force:** 16 August 2017.
 - **India is a party** to the Minamata Convention on Mercury
- **Key provisions:**
 - **Ban on new mercury mines** and phase-out of existing mines.
 - **Phase-out/phase-down of mercury-added** products and industrial processes.
 - **Control of mercury emissions** to air and releases to land and water.
 - Regulation of **Artisanal and Small-Scale Gold Mining (ASGM)**.
 - Environmentally sound storage, **disposal of mercury waste, and management of contaminated sites.**
- **Other Initiatives for Mercury Pollution**
 - **Global Mercury Partnership (2005):** A voluntary global partnership that promotes mercury reduction through **collaboration, awareness, capacity building, and best practices.**
 - **Global Mercury Assessment (GMA):** UNEP's flagship scientific assessment that evaluates global **mercury emissions, transport, exposure, and impacts.**
 - **PlanetGOLD Programme:** GEF-supported global initiative promoting **mercury-free gold extraction in artisanal and small-scale gold mining.**

About UNEP

- **Established:** 1972 following the **Stockholm Conference on the Human Environment.**
- Headquartered in **Nairobi, Kenya** (the first UN body headquartered in a developing country).
- It is the UN's leading global environmental **authority, coordinating international efforts to address environmental challenges.**
- **Mandate: Leads action on the triple planetary crisis:** Climate change, Nature, land and biodiversity loss and Pollution and waste
- **Key Functions**
 - Serves as a **neutral convener of governments, civil society, the private sector, and UN agencies.**
 - Facilitates **negotiation and implementation** of global environmental agreements.
 - Hosts the **United Nations Environment Assembly (UNEA), the world's highest environmental decision-making body with 193 Member States.**

Global Environment Facility (GEF)

- The world's largest multilateral environmental financing mechanism.
- **Established:** 1991
 - The GEF provides funding to assist developing countries in meeting the objectives of international environmental conventions.
 - The World Bank serves as a GEF trustee.
- **GEF serves as the financial mechanism for six multilateral environmental conventions:**
 - Convention on Biological Diversity (CBD)
 - UN Framework Convention on Climate Change (UNFCCC)
 - Stockholm Convention on Persistent Organic Pollutants (POPs)
 - Minamata Convention on Mercury
 - UN Convention to Combat Desertification (UNCCD)
 - Agreement on Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ)
- GEF also administers the Least Developed Countries Fund (LDCF), the Special Climate Change Fund (SCCF), and launched the Global Biodiversity Framework Fund (GBFF).

5.3. NEWS IN SHORTS

5.3.1. NEW CLIMATE GOALS ANNOUNCED

New climate goals announced at the Bonn Climate Change Conference 2026 (SB64).

UNFCCC oversees international climate action, with **SB64 (64th session of Subsidiary Bodies/ Bonn Climate Conference 2026)** serving as the key preparatory negotiation session for **COP31**, scheduled in Antalya, Türkiye (9–20 November 2026).

- **UNFCCC (HQ: Bonn, Germany):** It emerged from 1992 Earth Summit at Rio de Janeiro, adopted in 1994.
 - **Members:** 198, including India.

New Climate Goals

Theme	Key Targets (2035)	Current Status and Way Forward
Global Electrification	Increase electricity's share in final energy demand to 35% .	Electricity accounts for over 20% of global final energy consumption . • Expanding EVs, electric heating/cooling, and modern grids is key to raising electrification to 35% and reducing emissions.
Global Waste	Halve the growth in global waste.	Food waste contributes around 10% of global GHG emissions . • Waste generates methane, a greenhouse gas 80 times more potent than CO₂ over 20 years. • Prioritize food-waste reduction and methane mitigation, accelerate circular manufacturing (15% material-use rate), and leverage IEA-guided pathways to achieve global waste targets by 2035.
Resilient Cities	Reduce building-sector energy intensity by at least 25% .	Buildings remain among the largest energy-consuming sectors globally . • Improving building efficiency lowers emissions while reducing energy costs for households and businesses.

5.3.2. JOINT CREDITING MECHANISM

India and Japan finalized a **joint crediting mechanism** under the rules of **Article 6 of the Paris Agreement**, making it **India's first live bilateral carbon trading framework**.

- **Article 6 of the Paris Agreement:** It establishes **international carbon markets and non-market approaches** that **enable countries to voluntarily cooperate** to reduce greenhouse gas emissions and meet their climate targets (NDCs).

About Joint Crediting Mechanism (JCM)

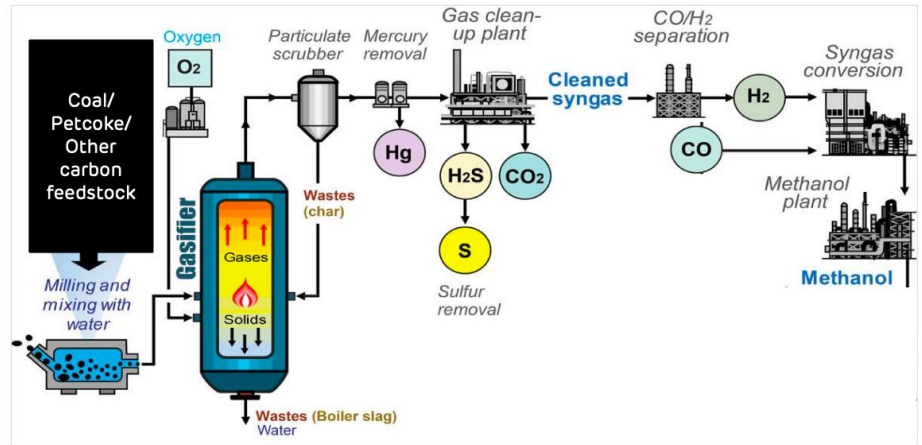
- The JCM is an **initiative of Japan** that
 - Promotes diffusion of leading **decarbonizing technologies, products, and infrastructure** to partner countries, supporting **sustainable development and mitigation actions** in developing nations.
 - **Facilitates global GHG emission reductions** toward UNFCCC goals, with quantified contributions credited **toward both countries' NDCs under the Paris Agreement**.
- The **Delhi Metro**, product of India-Japan partnership, will be **eligible for transfer of carbon credits** under the joint crediting mechanism.

5.3.3. GLOBAL ANNUAL TO DECADAL CLIMATE UPDATE (2024-2028)

This report is **issued annually** by the World Meteorological Organization (WMO) and it provides a synthesis of the global annual to decadal predictions.

Highlights of Report

- 80% likelihood that annual average global temperature will **temporarily exceed 1.5°C above pre-industrial levels** for at least one year between 2024-2028.
- 86% chance that **at least one year** between 2024-2028 will be warmer than 2023, present warmest year on record.
- Predicts reductions in sea-ice concentration** in the Barents Sea, Bering Sea, and Sea of Okhotsk.



5.3.4. TURQUOISE NEXUS INITIATIVE

Turkey's Presidency of 2026 UNFCCC COP31 and Food and Agriculture Organization (FAO) have unveiled the Turquoise Nexus Initiative.

About the initiative

- Aim:** To support developing countries in integrating food-water-climate approaches into their nationally determined contributions (NCDs) and implementation efforts under the Paris Agreement on climate change.
- Implementation:** It comes under **FAO's Food and Agriculture for Sustainable Transformation (FAST) Partnership** a multi-stakeholder initiative launched at COP27 in Egypt.
 - FAST Partnership embodies collective action to catalyze and accelerate the quantity and quality of climate finance contributions towards the sustainable transformation of agriculture and food systems.

5.3.5. ENERGY TRANSITION INDEX

World Economic Forum (WEF) released Energy Transition Index (ETI) 2026 which tracks energy transition progress across 120 countries.

Key Highlights of ETI 2026

- Global energy transition readiness** has declined for the first time in more than a decade amid a surge in geopolitical risks.
- Top Performers:** Sweden, Finland and Denmark retained their top three positions.
- India:** India advanced two places to rank 70th, driven by investment in energy security and affordability.

About ETI

- It ranks countries on their progress towards energy transition from fossil fuels to clean energy.
- It takes into account two main aspects to put together the Index:
 - System Performance (energy security, equity & sustainability)
 - Transition Readiness (regulation, infrastructure, investment etc.)
- The Index uses 43 indicators under these broad categories using data from multiple sources and scores countries on a scale of 0 to 100.

5.3.6. FLOATING SOLAR ENERGY IN INDIA

The Ministry of New and Renewable Energy (MNRE) released the **Floating Solar Potential Assessment Report 2026**.

Floating Solar Energy in India

- Floating Solar Photovoltaic (FSPV) systems are **solar panels installed on water bodies** such as reservoirs, lakes, ponds and dams instead of land.
- Total Floating Solar Potential:** India has an estimated **102.18 GWp** floating solar potential.
- Total Solar Potential: India's total assessed solar potential has increased to **3,445 GWp**.
 - India's installed solar power capacity increased from 2.8 GW in 2014 to 155 GW in 2026.
- Highest Potential State: Maharashtra with 16.28 GW potential**, followed by Madhya Pradesh (14.89 GW) and Karnataka (13.69 GW).



Read our previous coverage on India's Solar Energy

5.3.7. INDIA'S FIRST COMMERCIAL-SCALE COAL-TO-AMMONIUM NITRATE PROJECT

PM laid foundation stone of India's First Commercial-Scale Coal-to-Ammonium Nitrate Project in Odisha.

- Project is being developed by **Bharat Coal Gasification and Chemicals Limited (BCGCL)**, a joint venture of Bharat Heavy Electricals Limited (BHEL) and Coal India Limited (CIL). It will produce **2,000 tonnes per day of ammonium nitrate** using indigenously developed **coal gasification technology** by BHEL.

About Coal Gasification

- Meaning:** Process that converts coal into **synthesis gas (syngas)**, to be used to produce a wide range of value-added products like **methanol, urea, ammonium nitrate, synthetic natural gas, and other chemical feedstocks**.

Significance of Coal Gasification

- Reduce Imports:** India currently **imports end-use and intermediate chemical products** worth ~ Rs 2.7 lakh crore annually.
- Catalyse Investments:** Gasification would **catalyse investment worth Rs 2.5 to 3 lakh crore** and create around **50,000 direct/indirect employment across 25 projects** in coal-bearing regions.
- Huge Potential:** India is **world's second largest producer and consumer of coal**; is endowed with **world's fifth-largest coal reserves of over 400 billion tonnes**.
- Ensure Optimal utilization of indigenous natural resources:** For long term economic growth and competitive advantages like Shale gas revolution in USA, Coal to Chemicals in China, etc.



Read our previous coverage on Coal Gasification

Key Initiatives towards promoting Coal Gasification in India

- National Coal Gasification Mission:** Aims to gasify **100 million tonnes of coal by 2030**.
- Scheme for Promotion of Surface Coal/Lignite Gasification Projects.**
- Incentive scheme for promotion of coal and lignite gasification projects (2024)** for PSUs and private sector with an outlay of ₹ 8,500 crore.
- India's First Ever Pilot project for **Underground Coal Gasification** in Jharkhand (2024).

5.3.8. CALL TO ACTION ON METHANE

To limit the scale and duration of a 1.5°C temperature overshoot, the UN Secretary General launched a **Global Call to Action on Methane** to support the **Global Methane Pledge**.

- **Global Methane Pledge (India is not a signatory):** A US and EU-led initiative launched in 2021 to collectively **reducing global methane emissions by at least 30% from 2020 levels by 2030.**
- **Methane is a potent greenhouse gas** responsible for nearly **one-third of global warming** and is around **80 times more powerful than CO₂** in terms of warming the climate system.
- **However, Methane remains in the atmosphere for only about a decade, while CO₂ for remains for centuries.**

Call to Action on Methane

For Fossil Fuels (38% of global anthropogenic methane emissions)		
Action 1: Fix leaks and eliminate routine flaring and cold venting Ban routine flaring and venting, enforce leak detection, and use satellite monitoring to immediately address super-emitter events.	Action 2: Make methane measurable, reportable and verifiable Require direct, asset-level measurement of emissions and make the data verifiable and public.	Action 3: Adopt a science-based global methane standard Create an internationally recognized methane intensity benchmark to establish a market for near-zero-methane fossil fuels.
For Agriculture (42% of global anthropogenic methane emissions)		
Action 4: Produce food more efficiently with less methane Scale up low-methane practices for livestock and rice cultivation while supporting smallholder farmers.	Action 5: Halve per-capita food waste and reduce food loss Halve per-capita food waste at the consumer level and reduce post-harvest losses across the supply chain.	Action 6: Reform incentives and redirect finance and subsidies Shift harmful agricultural subsidies and finance toward methane-reducing, climate-resilient farming practices.
For Waste (20% of global anthropogenic methane emissions)		
Action 7: Phase out open dumping and uncontrolled landfills Establish clear timelines to phase out uncontrolled landfills and open dumpsites, especially in urban areas.	Action 8: Capture methane from waste and wastewater Deploy technologies to capture methane from wastewater and organic waste to generate electricity, heat, or fuel.	Action 9: Build circular, low-methane urban waste systems Mandate the separation of organic waste at the source and invest heavily in recycling and composting.

5.3.9. INDIA'S 100TH RAMSAR SITE

Jai Prakash Narayan Bird Sanctuary has been designated as India's 100th Ramsar site.

About Jai Prakash Narain Bird Sanctuary (Surha Tal)

- It is a **natural, perennial oxbow lake** (U-shaped waterbody formed when a wide meander from a river is cut off).
- **Location:** Ballia district, Uttar Pradesh
- **Origin:** Consolidated in **1991** from the land areas of 45 villages as Surha Tal. Renamed in 2002 to honour activist and political leader, Jai Prakash Narayan.
- **Area:** ~3432 hectares which **expands to ~25,000 hectares during monsoons.**
- **Significance:**
 - **Rich avifaunal biodiversity:** Vital wintering ground for migratory birds traveling along the **Central Asian Flyway.**
 - Notable fish include the vulnerable **Wallago attu** and **Bagarius bagarius.**
 - The abundance of fish attracts the **vulnerable fishing cat (Prionailurus viverrinus).**
 - Major source of **irrigation and groundwater recharge.**



5.3.10. SPECIES IN NEWS

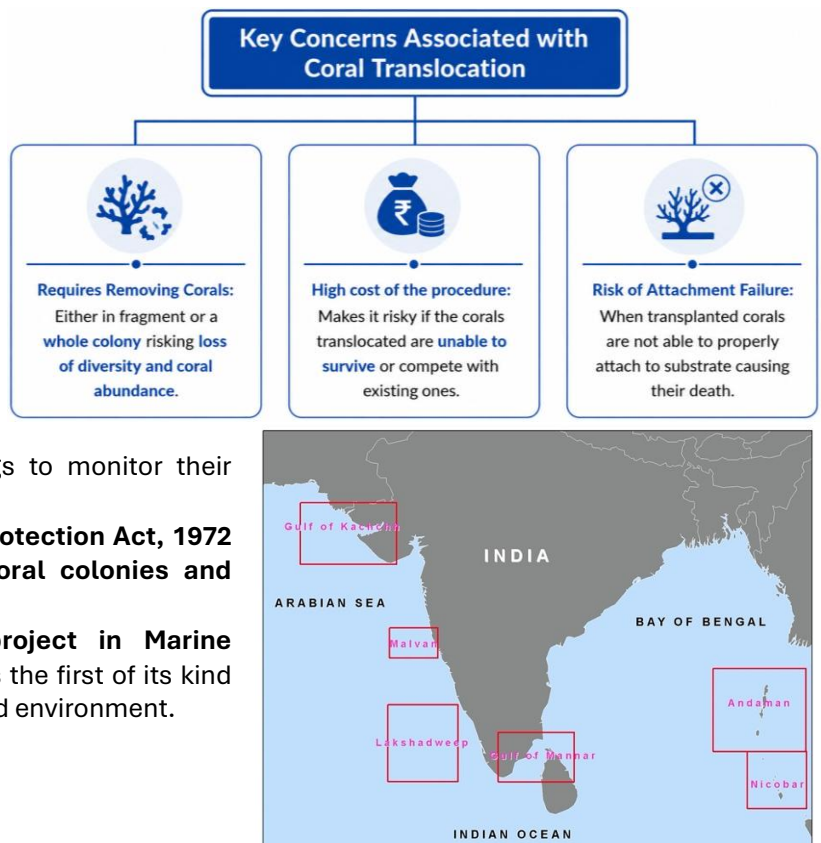
- **Hog Deer:** Recently an albino hog deer has been spotted in Kaziranga National Park.
 - **Albinism** is a rare, inherited genetic condition where the body produces little to no melanin, the pigment responsible for the color of skin, hair, and eyes.
 - Hog Deer gets its name from the hog-like manner in which it runs.
 - **Distribution:** Found across the Indo-Gangetic plains and parts of South and Southeast Asia, including India, Nepal, Bhutan, Bangladesh, and Myanmar.
 - **IUCN Red List:** Endangered
 - **Wildlife (Protection) Act, 1972:** Schedule I protection in India
- **Caracal:** India's rarest wild cat Caracal spotted in Kuno National Park, Madhya Pradesh after several decades.
 - **Coverage:** It is **widely distributed across** Africa, Central Asia, and south-west Asia into India.
 - **Habitat:** Forest, Savanna, Shrubland, Grassland, Desert.
 - It is **naturally shy and elusive**, living in harsh landscapes that are difficult to monitor.
 - **Adults spend much of their days alone**, hunting for birds, rodents, rabbits, and gazelles.
 - **Mom caracals** (which usually have three babies in each litter) cuddle with their young.
 - Also known as the "**flying cat**" as they can **leap up to 3 meters into the air** to snatch birds.
 - **IUCN status:** Least Concern
 - **Wildlife Protection Act, 1972:** Schedule I
- **Tapanuli Orangutan:** A climate change-driven cyclone in 2025 killed nearly **7% of global Tapanuli orangutan population** within just four days.
 - **Population:** World's rarest great ape, with **fewer than 800 individuals** (2019) remaining in the wild.
 - **Classification:** One of the **three orangutan species**, alongside the **Bornean** and **Sumatran** orangutans.
 - **Habitat & Distribution:** Endemic to the **Batang Toru Ecosystem, North Sumatra (Indonesia)**.
 - **Conservation Status:** Critically Endangered (IUCN).



5.3.11. CORAL TRANSLOCATION IN GREAT NICOBAR ISLAND

Zoological Survey of India (ZSI) Identifies Four News Sites for Coral Translocation in Great Nicobar Island,

- These sites would include **Coral colonies and giant clams** that will be impacted due to transshipment port proposed at **Galathea under Great Nicobar Island (GNI)** mega project.
- Along with this, ZSI will maintain systematic data on translocated colonies with GPS tags to monitor their survival.
- Obtain **necessary approval** under **Wildlife Protection Act, 1972** before handling any **Schedule-I species (coral colonies and Giant Clams)**.
- Previously, **India's Coral Translocation project in Marine National Park, Gulf of Kachchh, Gujarat** was the first of its kind attempt to transplant and restore coral in turbid environment.



About Corals

- **Invertebrates** that belong to a large group of animals called **Cnidaria**.
 - Each individual coral is made of **polyp** and obtain their colour from **microscopic algae, called zooxanthellae**. (Both having symbiotic relationship between them).
- **Significance:** Ecosystem for life underwater, protect coastal areas from storms, provide a source of income, etc.
- **Key Conditions for Corals thrive:**
 - **Warm water temperatures** between 23°C and 29°C.
 - **Sunlight penetration**, essential for symbiotic algae (zooxanthellae) living in coral tissues.
 - **Clear, shallow waters**, generally **less than 50 meters deep**.
- **Threats to Corals:** Changes in **ocean temperature and acidification**, with local pressures like **pollution, overfishing and declining water quality**, etc.



Read our previous coverage on Great Nicobar Island Project

5.3.12. POTATO PATCH

Giant potato coral patch found on southeastern side of **Kadmat Island** in Lakshadweep.

Potato Patch Coral Colony (*Pavona clavus*)

- Covers about **4,250 sq. m. (1.05 acres)**, potentially the world's largest living *Pavona clavus* colony.
- **Scientific Value:** Serves as a **natural time capsule** for studying coral longevity, climate adaptation, and past ocean conditions.

5.3.13. 3D-PRINTED ARTIFICIAL REEFS

Tamil Nadu will deploy **India's first 3D-printed artificial reef** under **PM Matsya Sampada Yojana**.

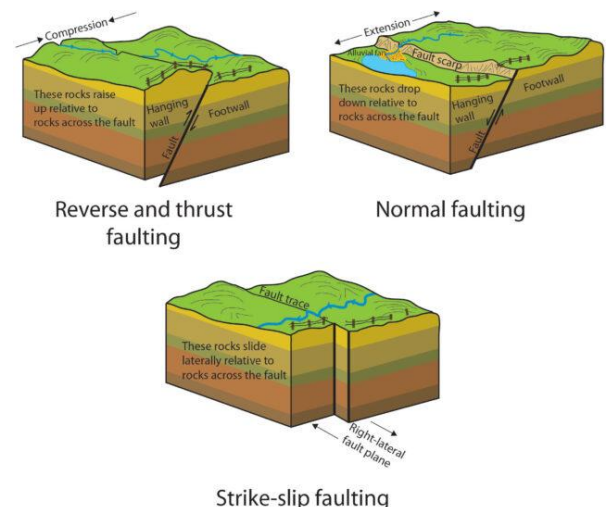
About 3D-Printed Artificial Reefs

- It is a **marine habitat restoration initiative** aimed at improving **biodiversity and fish habitats**.
- **Developed by:** **Tvasta (IIT Madras-incubated startup)** in collaboration with **ICAR-CMFRI**.
- **Key features:** **Complex geometries with crevices and folds**, high porosity, species-specific habitat design, and **no iron reinforcement**.
- **Significance:** Supports **coral and marine species recovery**, strengthens **coastal resilience**, and **enhances fish stocks** for traditional fishing communities.

5.3.14. SEISMIC DOUBLET

Two powerful earthquakes (Magnitudes 7.2 and 7.5), known as **doublers**, struck **western Venezuela** near Yumare, about 160 km west of Caracas region.

- In a typical earthquake sequence, the larger quake is followed by a series of smaller aftershocks.
 - **Doublers**, however, are generally defined as earthquakes of similar magnitude that **originate from distinct but closely related ruptures** and occur in quick succession.
 - The doublers reflect a **complex rupture interaction, where the first rupture transfers stress to a nearby fault segment, triggering the second major earthquake**.
- Venezuela's high seismic vulnerability stems from its location on the **active Caribbean–South American plate boundary** with **multiple active strike-slip fault systems** including Boconó, San Sebastián.



Major Earthquake prone Areas around the world

- Pacific Ring of Fire (Japan, Indonesia, Philippines, New Zealand, Alaska, Chile, Peru)
- Alpide Belt (Turkey, Iran, Afghanistan, Pakistan, Himalayas, Myanmar)
- Caribbean Plate Boundary (Venezuela, Haiti, Dominican Republic)
- East African Rift System (Ethiopia, Kenya, Uganda)
- San Andreas Fault (California, USA)

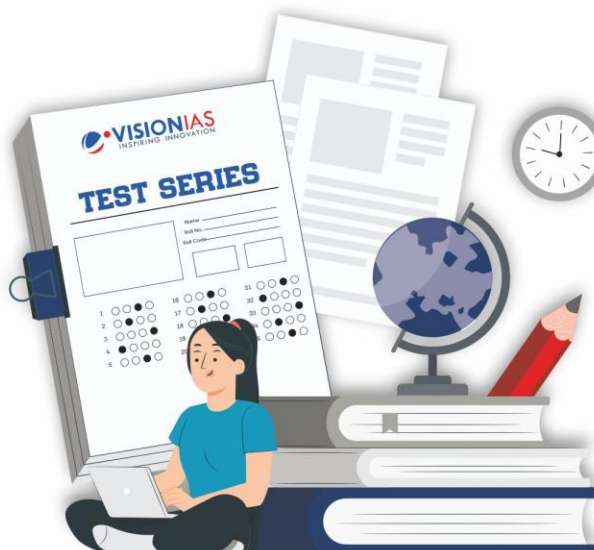
5.3.15. DAM PROJECTS IN NEWS

- **Kishau Multipurpose Dam Project:** Six states i.e. Himachal Pradesh, Uttarakhand, Delhi, Uttar Pradesh, Haryana and Rajasthan agreed to sign MoU for Kishau Multi-Purpose Dam Project implementation.
 - **Location:** Along Uttarakhand-Himachal Pradesh border on River Tons (tributary of Yamuna).
 - **Dam Type:** 236 m high Roller Compacted Concrete gravity dam.
 - **Funding:** Centre to provide 90% assistance for water component and remaining 10% to be shared by six states.
- **Kirthai-II hydroelectric project:** It is the third hydroelectric project planned on the Chenab to receive approvals since the suspension of the Indus Water Treaty. (Other two are Sawalkote and Dulhasti-II projects).
 - It is a run-of-the-river project.

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6. SOCIAL ISSUES

6.1. DECODING THE GLOBAL WAVE OF YOUTH PROTESTS

Why in the News?

Across continents, young populations are organizing large-scale, decentralized protests that challenge the existing socio-economic and political order.

An Account of the Recent Protests

- **Decentralized Nature:** These movements are organizationally amorphous. They are mobilized by civil society, student groups, and activists without a prominent leadership, intentionally distancing themselves from mainstream political parties.
- **Rise of Digital Activism:** Youth activists increasingly utilize platforms like WhatsApp, Instagram, and X to coordinate logistics.
- **Evolution of the Protest Agenda:** Contemporary movements have expanded their focus to address a **wide range of concerns** from anti-globalisation (e.g., the 1999 Seattle WTO protests) and climate justice (Fridays for Future, 2019) to cost-of-living unrest (Sri Lanka's Aragalaya, 2022) and demands for **government accountability** (Nepal 2025, Bangladesh 2024, Madagascar 2025).
- **Contagion effect:** Localised protests have cascaded regionally, much like the **Arab Spring** (Tunisia to Egypt, Libya, Syria, Yemen). More recently, the **Journal of Democracy** notes that the **2025 Asian anti-corruption wave** (Indonesia, Philippines, Nepal) drew direct inspiration from **Sri Lanka (2022)** and **Bangladesh (2024)**.
 - **The Carnegie Endowment's Global Protest Tracker** recorded 128 distinct anti-government protests across 70 countries in the 12 months preceding late 2025.



Key Drivers of Youth Discontent

- **The Demographic Reality:** The world hosts its **largest-ever youth population**, with an estimated **2.4 billion young people aged 10-29 (USAID)**. Regions like **Sub-Saharan Africa** facing the significant demographic pressure to create jobs (**ILO**).
- **Rising Inequality, Poverty, and Vulnerability:** The **UN DESA World Social Report 2025** finds the richest 10% own 76% of global wealth, while the poorest 50% own just 2%.
 - Per the **ILO's Global Employment Trends for Youth 2024**, global youth unemployment stands at 13.0%.
- **Technological Disruption and Job Anxiety:** Beyond traditional jobless growth, the rapid advancement of **Generative AI and automation** is creating acute anxiety over the displacement of entry-level and white-collar jobs, exacerbating fears of unemployment.
- **Socio-Psychological Driver:** A Swedish Empirical Study suggests that unconventional protest participation among youth may be linked to psychological **"Need to Belong" (NTB)**, particularly among those under 33.
 - Protests may allow young adults going through identity exploration to seek peer approval and social belonging.
- **Post-Protest Marginalization:** **UNICEF research** indicates that five years after major protest movements, youth employment and social indicators often show limited improvement, suggesting that young people are rarely central to post-movement decision-making.

How genZ protest in India is different from other countries

- **Administrative Reform vs. Regime Change:** While youth protests in Bangladesh, Nepal, and Sri Lanka demanded total regime change, India's protest focused on specific administrative accountability.
- **Predominantly Civil-Resistance Tactics:** While youth uprisings in countries like Nepal, Kenya, and Indonesia quickly escalated into violent clashes, arson, and the burning of parliament or government buildings, India's protests relied substantially on sit-ins, marches, social-media mobilisation, petitions and fasting.
- **Use of Gandhian Protest Methods:** Hunger strikes, particularly Sonam Wangchuk's 26-day fast, added a Gandhian civil-resistance dimension to the broader movement.

Issues with Gen Z protest

- **Risk of Capture by Vested Interests:** Leaderless movements are vulnerable to infiltration by political parties, business interests, or external actors advancing their own agendas.
 - Several recent movements have seen allegations of opposition or foreign involvement.
- **Sustainability of Leaderless Movements:** Decentralised movements can mobilise rapidly but may struggle to develop negotiating structures, coherent policy agendas and durable organisations once immediate protest objectives are achieved.
 - Absent leadership makes negotiation and accountability difficult, often leading to governance vacuums (e.g., Sri Lanka's Aragalaya, Arab Spring).
- **State Perspective:** Governments often argue that some protests are based on misinformation, influenced by social media, or used by vested interests.
 - This view should also be considered, even if it is sometimes used to justify strict government action.

Way Forward

- **Formulate a New Policy Consensus (UN DESA Framework):**
 - **Equity:** Consider progressive taxation models (e.g., G20 discussions on taxing high-net-worth individuals).
 - **Economic Security:** Support the transition from jobless growth toward quality formal employment via Active Labour Market Programmes (ALMPs).
 - **Solidarity:** Strengthen public trust by improving the responsiveness, transparency, and representativeness of democratic institutions.
- **Strengthen Examination and Recruitment Integrity:** The National Recruitment Agency (NRA), designed to conduct a Common Eligibility Test (CET) requires full rollout and integration with state bodies. Examination-security reforms should enforce standardized digital proctoring and strict deterrents under the **Public Examinations (Prevention of Unfair Means) Act, 2024**.
- **Institutionalize Grievance Redressal:** Build upon Second ARC recommendations by operationalizing time-bound, statutory grievance mechanisms. Enhancing platforms like **CPGRAMS** gives youth formal recourse, reducing dependence on street mobilization.
- **Align Skilling with Employment Pathways:** Convergence between **Skill India Mission (PMKVY)** and the **National Career Service (NCS) portal** to connect vocational training directly with actual labor-market demand, addressing the ILO's highlighted skill-mismatch.
- **Formal Channels for Youth Political Engagement:** Better resource mechanisms like the **National Youth Policy (2014)** and District Youth Parliaments. Link them to actual legislative consultations rather than treating them as purely symbolic platforms.
- **Balancing State Security with Democratic Rights:** Develop standard operating procedures for protest management that protect public order alongside the constitutional right to dissent under Article 19.

Conclusion

The global youth protest wave reflects genuine structural grievances, yet also carries risks of capture and limited follow-through. Sustainable progress will depend on governments improving responsiveness and accountability, while movements build institutional channels, ensuring that democratic energy translates into lasting reform rather than recurring disruption.

6.2. UNIVERSAL HEALTH COVERAGE THROUGH DIGITAL HEALTH

Why in the News?

Government of India is committed to utilising India's digital health ecosystem for Universal Health Coverage (UHC), highlighted by creation of **over 90 crore unique Ayushman Bharat Health Accounts (ABHA)** and over **100 crore** linked digital health records.

What is Digital Health?

- It integrates Information and Communication technologies, **ICT** (mobile apps, telemedicine, AI, and Electronic Health Records) into healthcare to improve service delivery, data management, and patient outcomes.

- It encompasses technologies such as **Internet of Medical Things (IoMT), big data analytics, genomics, and wearables.**
- Key Features of Digital Health:**
 - Health IDs:** Unique biometric-linked IDs (e.g., ABHA) for secure medical records.
 - Telemedicine & Virtual Care:** Remote doctor-to-patient and doctor-to-doctor consultations.
 - Mobile Health (mHealth):** Applications for disease surveillance, contact tracing, and health education.
 - Electronic Registries:** Digital databases of healthcare professionals (HPR) and health facilities (HFR).
 - AI & Machine Learning:** Automated diagnostics, predictive analytics, and clinical workflow optimization.

Significance of Digital Health to achieve UHC

Universal health coverage (UHC) means that all people have access to the full range of quality health services they need, when and where they need them, without financial hardship. It covers the full continuum of essential health services, from health promotion to prevention, treatment, rehabilitation and palliative care.

- Bridging the Geographic Divide:** eSanjeevani and Ayushman Arogya Mandirs (AAMs) extend specialist care to underserved rural areas, where **71% of the population** is served by only **one-third of doctors.**
- Inclusivity & Affordability:** U-WIN supports **11 regional languages**, while ABHA enables offline/assisted creation, improving access and reducing out-of-pocket expenditure.
- Patient Empowerment:** **Personal Health Record (PHR)** gives patients control over sharing their health records.
- Real-Time Disease Surveillance:** Systems like the **Integrated Health Information Platform (IHIP)** and **CoWIN** bolster pandemic preparedness and rapid outbreak monitoring.
- Public-Private Synergy:** Integrates private labs and health-tech startups into the national digital health ecosystem.

Challenges related to Digital Health

- Infrastructure & Connectivity Gaps:** Low rural internet penetration (**below 40%**), unreliable electricity, and inadequate IT infrastructure restrict the scalability of teleconsultations in remote regions.
- Data Privacy & Ethical Concerns:** Risks of data breaches, patient autonomy issues, and AI bias linked to biometric health records.
- Digital Literacy Barrier:** Limited digital skills among ASHAs, ANMs, and the public.
- System Fragmentation:** Poor interoperability due to siloed systems and non-uniform data standards.
- Exclusion risk:** Aadhaar-seeding failures, biometric authentication failures among manual labourers etc. becomes a barrier for exactly the populations UHC targets.

STATUS OF DIGITAL HEALTH ECOSYSTEM



Teleconsultations:

eSanjeevani delivered over **47 crore** consultations (2026), becoming world's largest primary healthcare telemedicine platform.



Vaccination Management:

U-WIN registered **11.87 crore** children and **3.96 crore** pregnant women.



Mental Health:

Tele-MANAS handled over **17.6 lakh** calls by 2025 through **53** mental health cells.



Market Growth (2024):

Digital health market valued at **USD 14.33 billion**, projected to reach **USD 52.4 billion** by 2030.

Measures towards building a Digital Health Ecosystem

Policy Framework:

- National Health Policy (NHP), 2017:** Promoted digital technologies for affordable healthcare and Universal Health Coverage.
- National Digital Health Blueprint, 2019:** Established a federated architecture emphasizing

Key Initiatives:

- Ayushman Bharat Digital Mission (ABDM) (2021):** Digital health ecosystem (ABHA, Health Facility Registry (HFR), Healthcare Professionals Registry (HPR)) with over **1,000 health-tech companies** in the digital sandbox.

unique health identifiers, interoperability, and privacy-by-design. • Telemedicine Practice Guidelines, 2020: comprehensively prescribe norms and protocols covering all aspects of telemedicine practice like physician-patient relationship; issues of liability and negligence; management and treatment; etc. • Digital Personal Data Protection (DPDP) Act, 2023: Legal framework for consent-based protection of personal health data.	• Digital Health Incentive Scheme (DHIS): Incentivizes digitization of health records and paperless systems. • Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM-ABHIM): ₹64,180 crore to strengthen digital public health and disease surveillance. • AI Integration (2023-2026): 'Cough Against TB' screened 1.62+ lakh people; MadhuNetrAI enabled automated diabetic retinopathy screening.
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Way Forward

- **Infrastructure Expansion & Digital Literacy:** Expand **5G/broadband** to remote PHCs, train healthcare workers in **Electronic Medical Record (EMRs) & telemedicine**, and improve digital health literacy among marginalized communities.
- **Data Quality & Interoperability:** Mandate standardized **Electronic Medical Records (EMRs)**, uniform data standards, and **API-based integration** to enable seamless interoperability across healthcare systems.
- **Scaling Advanced Technologies:** Expand AI diagnostics & federated learning, adopt blockchain for secure health records, and use VR/AR for medical training.
- **Robust Data Governance & Ethics:** Enforce the **Digital Personal Data Protection Act, 2023**, adopt **Responsible AI principles**, and strengthen **Health Technology Assessment (HTA)** for safe, evidence-based digital health.
- **Decentralization & Private Sector Integration:** Replicate successful state models, build digital **Communities of Practice** for expert collaboration.

Conclusion

Digital health is transforming healthcare from reactive treatment to proactive well-being. Strengthening digital infrastructure, literacy, and data governance will accelerate Universal Health Coverage and support the vision of Viksit Bharat @ 2047.

GLOBAL DIGITAL HEALTH BEST PRACTICES



USA (HITECH Act):

Interoperable digital health architecture



United Kingdom (NHS Digital):

Integrated digital platforms with strong data privacy



Singapore:

"One Patient, One Health Record" for seamless care coordination



WHO's Global Initiative on Digital Health:

Align with the WHO Global Strategy on Digital Health (2020–2027) to promote interoperability, evidence-based innovation, quality, safety, and digital health equity

6.3. NATIONAL FAMILY HEALTH SURVEY – 6

Why in the News?

The Ministry of Health and Family Welfare (MoHFW) released the **National Family Health Survey – 6**.

About NFHS 6

- It was conducted during **2023-24** by The Ministry of Health and Family Welfare (MoHFW) with the **International Institute for Population Sciences (IIPS), Mumbai** as the nodal agency.
- Covered **6.79 lakh households across 715 districts (except Manipur)**.
- Provides **district, state, and national-level estimates on population, health, nutrition, family welfare**, women's empowerment, and non-communicable diseases (NCDs).
- Introduced new indicators such as **Direct Bank Transfer (DBT), Self-Help Group (SHG) coverage, digital literacy, financial transactions, and HIV testing**.

Key Highlights of the survey

Theme	Indicator	NFHS-5	NFHS-6	Significance
Demography	Population below 15 years	26.5%	25.5%	Indicates demographic transition
	Population aged 60 years and above	11.8%	12.9%	Reflects ageing population and need for elderly care
	Total Fertility Rate (TFR)	2.0	2.0	India is below replacement-level fertility
Health Infrastructure	Institutional deliveries	88.6%	90.6%	Improved access to institutional healthcare
	Births attended by Skilled Health Personnel (SHP)	89.4%	91.3%	Better maternal and newborn care
	Households covered under health insurance/financing scheme	41.0%	60.2%	Expansion of financial protection under health schemes
Maternal Health	Mothers receiving Antenatal Care (ANC) in the first trimester	70.0%	76.2%	Improved early maternal healthcare
	Mothers receiving at least four ANC visits	58.5%	65.2%	Better continuity of maternal care
	Mothers consuming Iron and Folic Acid (IFA) supplements for 100+ days	44.1%	54.9%	Improved maternal nutrition
	Births delivered by Caesarean Section (C-section)	21.5%	27.2%	Rising C-section rate is a public health concern
Family Planning	Contraceptive Prevalence Rate (CPR) (any method)	66.7%	69.1%	Better access to family planning services
	Unmet need for family planning	9.4%	8.5%	Improved reproductive healthcare
Child Health	Full immunization coverage	83.8%	87.1%	Strengthened Universal Immunization Programme
	Rotavirus vaccine coverage	36.4%	85.4%	Major improvement in vaccine coverage

	Children receiving most vaccinations through public health facilities	94.5%	95.6%	Strong public health delivery system
Child Nutrition	Stunting (low height-for-age)	35.5%	29.3%	Significant improvement in chronic malnutrition
	Severe wasting (low weight-for-height)	7.7%	5.2%	Better management of acute malnutrition
	Underweight children (low weight-for-age)	32.1%	31.8%	Marginal improvement
Women's Empowerment	Women who have ever used the internet	33.3%	64.3%	Greater digital inclusion
	Women having a bank/savings account that they themselves use	78.6%	89.0%	Improved financial inclusion
	Women having a mobile phone that they themselves use	53.9%	63.6%	Enhanced digital empowerment
	Women (20–24 years) married before 18 years	23.3%	20.1%	Decline in child marriage; progress towards Sustainable Development Goal (SDG)-5
Emerging Health Challenges	Women overweight/obese (Body Mass Index (BMI) ≥ 25 kg/m ²)	24.0%	30.7%	Rising obesity burden
	Men overweight/obese (Body Mass Index (BMI) ≥ 25 kg/m ²)	22.9%	27.3%	Increasing lifestyle-related diseases
	Women with high blood sugar/diabetes	13.5%	17.8%	Rising burden of Non-Communicable Diseases (NCDs)
	Men with high blood sugar/diabetes	15.6%	20.9%	Growing diabetes prevalence
Social Indicators	Ever-married women experiencing spousal violence	29.2%	22.3%	Improvement in women's safety and empowerment
	Men using tobacco	38.0%	36.3%	Decline in tobacco consumption

6.4. PRADHAN MANTRI SURAKSHIT MATRITVA ABHIYAN

Why in the news?

Pradhan Mantri Surakshit Matritva Abhiyaan (PMSMA) has completed 10 years.

About the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)

- PMSMA is a flagship maternal health programme under the **RMNCH+A** (Reproductive, Maternal, Newborn, Child and Adolescent Health) strategy
- Ministry:** Ministry of Health and Family Welfare (MoHFW).
- Objective:** Provide free specialist-led antenatal care (ANC) to pregnant women on the 9th of every month through public health facilities.
- Target Beneficiaries:** Pregnant women in their 2nd and 3rd trimesters.
- Extended PMSMA (e-PMSMA):** Introduced in **January 2022** to strengthen follow-up of High-Risk Pregnancies till **45 days after delivery**, with cash based incentives for beneficiaries and ASHA workers.
- Convergence with Other Schemes:** PMSMA complements initiatives such as Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), Surakshit Matritva Aashwasan (SUMAN), LaQshya, POSHAN Abhiyaan, and Pradhan Mantri Matru Vandana Yojana (PMMVY) **to strengthen maternal healthcare across the continuum of care.**

Salient Features of PMSMA

- Fixed-Day ANC Service:** On the **9th of every month**, designated public health facilities provide an assured package of free antenatal services and mobilise pregnant women to receive specialist antenatal care.
- Specialist-Led Care:** Every pregnant woman should receive at least one ANC examination during the second or third trimester by an **Obstetrician/Gynaecologist or a trained Medical Officer.**
- Identification of High-Risk Pregnancies (HRPs)** and comprehensive ANC package,
- Private Sector Participation:** Active private participants are honored through initiatives like the **'IPledgeFor9' Achievers Awards.**



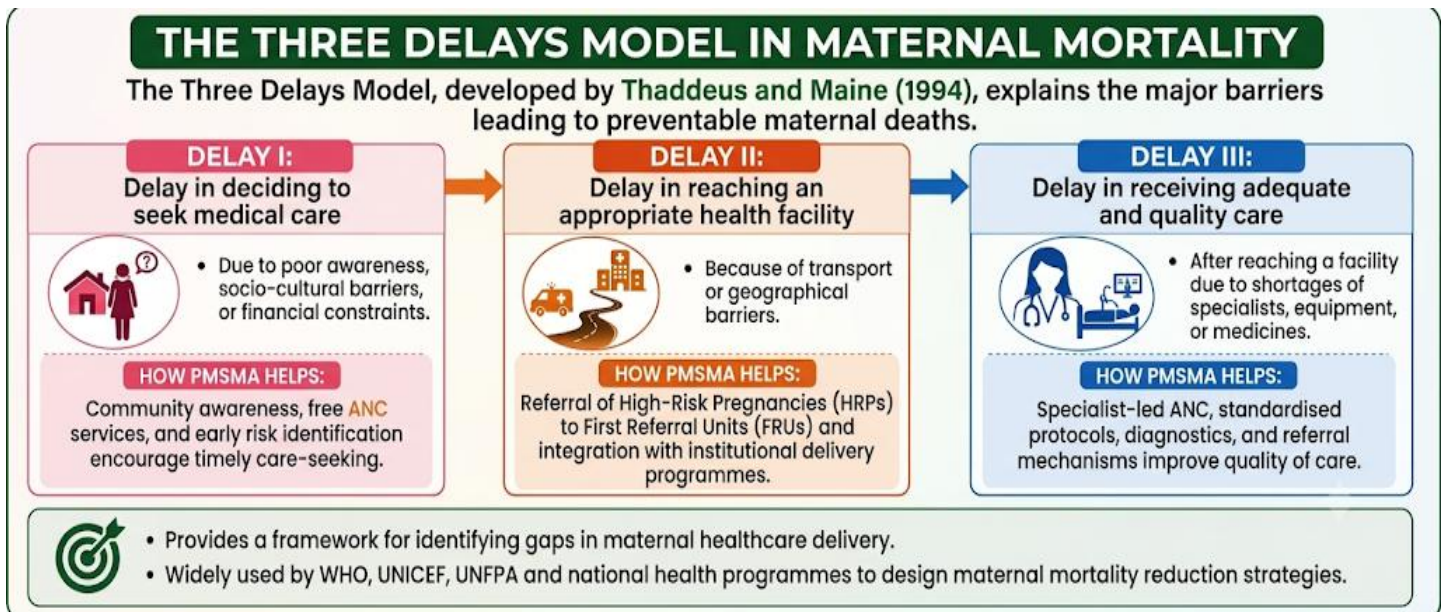
Significance and Achievements

- Diagnostic Coverage:** Over **7.5 crore** specialised antenatal check-ups have been conducted, resulting in the identification of nearly **1.2 crore High-Risk Pregnancies.**
- Declining Maternal Mortality:** Along with other flagship maternal health programmes, PMSMA has contributed to India's decline in **Maternal Mortality Ratio (MMR)** from **130 (SRS 2014–16)** to **87 per lakh live births (SRS 2022–24).**
 - India has accomplished the **National Health Policy 2017 target for MMR** less than 100 per 1,00,000 live births by 2020.
 - It is moving towards **SDG Target 3.1** i.e. Reduce the global maternal mortality ratio to less than 70 per 100 000 live births.
 - Eight states—Kerala, Maharashtra, Telangana, Andhra Pradesh, Tamil Nadu, Jharkhand, Gujarat, and Karnataka—have already achieved this SDG target.
- Improved Antenatal Care Coverage:** According to **NFHS-6 (2023-24):**
 - First-trimester ANC registration increased to **76.2%**, compared to **59% in NFHS-4 (2015-16).**
 - Women receiving **four or more ANC visits** increased to **65.2%.**
- Higher Institutional Deliveries:** Institutional deliveries increased from **79% (NFHS-4)** to **90.6% (NFHS-6)**, improving access to skilled birth attendance and emergency obstetric care.

Issues and Challenges

- Overburdened Frontline Workforce:** ASHA workers simultaneously implement multiple health programmes, reducing the quality of counselling and follow-up. Tracking pregnant migrant women also remains difficult due to limited interoperability of health databases across states.

- **Shortage of Specialists:** Many rural health facilities continue to face shortages of obstetricians, anaesthetists and sonologists, resulting in heavy dependence on voluntary private participation, which remains uneven across regions.
- **Infrastructure Gaps:** Limited availability of ultrasound facilities and diagnostic equipment forces women to travel long distances. Fixed-day service delivery may also increase patient load and reduce consultation time.
- **Socio-cultural Barriers:** Geographical isolation, poor transport, low awareness and social stigma discourage timely ANC, particularly among adolescent mothers and other vulnerable groups.
- **Uneven Resource Allocation:** States with higher maternal mortality require greater financial and human resource support than the current uniform implementation model provides.
 - In addition, **postnatal care** continues to receive relatively less attention despite a significant proportion of maternal deaths occurring within the first 48 hours after childbirth.



Way Forward

- **Strengthen Digital Continuity of Care:** Integrate PMSMA records with **ABHA IDs** to enable seamless tracking of High-Risk Pregnancies, particularly among migrant populations. **Simplified digital tools should reduce the reporting burden on ASHA workers.**
- **Address Specialist Shortages:** Introduce performance-linked incentives for private specialists serving rural areas, promote tele-obstetric consultations, and encourage structured rural rotations for postgraduate medical students.
- **Improve Diagnostic Access:** Expand mobile diagnostic units and strengthen district-level referral systems to ensure timely access to ultrasound and laboratory services.
- **Promote Community Participation:** Conduct targeted awareness campaigns involving husbands, mothers-in-law and community leaders to improve early ANC registration and institutional care. Confidential counselling mechanisms should be strengthened for adolescent pregnancies.
- **Adopt a District-Focused Strategy:** Allocate resources based on maternal mortality burden and strengthen maternal death surveillance.
 - Dedicated **postnatal follow-up clinics** and convergence with **POSHAN Abhiyaan** can improve maternal nutrition and recovery after childbirth.

Conclusion

Over the last decade PMSMA shifted India's maternal healthcare from reactive treatment to proactive identification of high-risk pregnancies. Sustaining this progress now requires stronger specialist availability, digital continuity of care, and improved postnatal follow-up. The next decade of PMSMA should focus not merely on increasing antenatal visits but on ensuring that every identified high-risk pregnancy culminates in a safe delivery and healthy postpartum recovery.

6.5. NEWS IN SHORTS

6.5.1. INTERIM REPORT OF NATIONAL TASK FORCE (NTF) CONCERNING STUDENT'S MENTAL HEALTH

Supreme Court constituted the NTF in 2025 in **Amit Kumar V. Union of India case**, to address the **Mental Health Concerns of students and prevent commission of suicides in Higher Educational Institutions (HEIs)**.

Key Findings on Student Suicide (NTF)

- **Vulnerability of Youth:** 75% of mental health conditions begin **before 24 years of age**.
- **Student suicides in India:** Comprised **7.6% of total suicides** in India (NCRB 2022).
 - **Lack of Support:** **65% of institutes surveyed** (2,119 HEIs) currently do not provide access to any mental health service providers.

Key Reasons for Student Suicide (NTF)

- **Overlooking Silent Burdens:** Conditions like **depression** are often-overlooked and pose significant **challenges to early recognition and timely support**.
- **Massification of Higher Education:** Gross Enrolment Ratio increased from **8% in 2001 to 28.4% in 2021-22**, bringing **persistent structural inequalities** in access and outcomes.
- **Geographical Imbalance:** Students from rural and remote areas face additional barriers concerning access to institutions along with increased financial and social costs.
- **Barriers to Substantive Participation:** From **marginalised communities** like inequitable conditions of educational pathways, stigma of caste, reservation, lower ranking, low social esteem, etc.
- **Absence of direct statutory, regulatory or institutional framework:** Mostly interventions are generic and reactive.
 - Existing **'Suicide Prevention Strategy' (2022)** by Ministry of Health and Family Welfare, is abstract with no clear implementation guidelines.



Key Recommendations

- **Streamline Data on Suicide:** Data on Suicide in HEI to be centrally maintained with clear categorisation.
- **Strengthen Accessibility:** For marginalized groups (persons with disability; transgender students, etc.).
- **Reporting of Student Suicides:** Time-bound **uniform reporting by HEIs** of all such cases.
- **Others:** Student friendly mental health services; less stress inducing campus, etc.

6.5.2. NATIONAL HEALTH ACCOUNTS (NHA) ESTIMATES FOR INDIA 2022-23

NHA 2022-23 is the tenth report on health expenditure estimates prepared by the **National Health Accounts Technical Secretariat (NHATS)**, National Health Systems Resource Centre, Ministry of Health and Family Welfare using the **System of Health Accounts (2011)** framework.

- **System of Health Accounts** is an internationally standardized framework for tracking health expenditures and resource flows in health systems.

Government Initiatives for Healthcare



National Health Mission (NHM) ←

- Provide **accessible, affordable** and **quality health care** to the **rural population**, especially to the **vulnerable groups**.



Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) ←

- Provides **cashless health cover** of **₹5 lakh per family** per year for **secondary and tertiary and tertiary care** hospitalization.



Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) ←

- To provide **high-quality generic medicines** at prices **50% to 90% cheaper** than branded equivalents

Key Findings:

- **Government Health Expenditure (GHE)** as a share of the country's GDP grew **from 1.15% to 1.43%** over the period 2013-14 to 2022-23.
- **Expenditure on Primary Health Care by Government** has **more than doubled** from ₹0.5 Lakh Crores to ₹1.4 Lakh Crores between 2013-14 and 2022-23
- **Out-of-Pocket Expenditure (OOPE)** dropped from **64.2% to 43.4%**.
- **Social Security Expenditure (SSE)** on healthcare increased from 6% to 9.9% between 2013-14 and 2022-23.

6.5.3. PARLIAMENTARY STANDING COMMITTEE REPORT ON "TEACHER EDUCATION"

The **Parliamentary Standing Committee on Education, Women, Children, Youth and Sports** presented its 380th Report in the light of **National Education Policy (NEP) 2020's** thrust on **Capacity Building of Teachers**.

Recommendations of the Committee & Actions Taken by Government

Area	Recommendation	Action Taken
Integrated Teacher Education Programme (ITEP)	• Upgrade Teacher Education Institutions (TEIs) in phases, • Curb commercialization, • Partner with premier institutions, • Align curriculum with the 5+3+3+4 structure, and integrate technology.	National Council for Teacher Education (NCTE) introduced the • ITEP curriculum in IITs, NITs, and Regional Institute of Education (RIEs) with inquiry-based learning; • Multilingual pedagogy, ICT training, and strict recognition norms.
Upgrading District Institutes for Education and Training (DIETs) as Centres of Excellence	• Address regional disparities, prioritize high-performing DIETs • Strengthen infrastructure including hostels, libraries, and Balvatikas.	• Launched the 'Empowering DIETs as Centres of Excellence scheme' (₹9,195 crore) to upgrade 613 DIETs, with real-time monitoring through the PRABANDH portal.
Tackling Faculty Shortages	• Fill vacancies in schools and DIETs through permanent recruitment and link funding to vacancy compliance.	• DIET funding linked to recruitment compliance; • States advised to establish recruitment boards.
Autonomy & Preservation of Successful Models	• Retain successful programmes like B.El.Ed. • Allow curriculum flexibility for universities.	• An ITEP Review Committee has been constituted; • NCTE will examine the proposals through stakeholder consultations.
Convergence with Early Childhood Care and Education (ECCE)	• Integrate Anganwadi workers into formal teacher-training frameworks.	• MoWCD and Department of School Education and Literacy (DoSEL) issued Guidelines for Co-location of Anganwadi Centres with Schools to strengthen ECCE integration.

6.5.4. PARLIAMENTARY STANDING COMMITTEE ON EDUCATION, WOMEN, CHILDREN, YOUTH AND SPORTS RELEASED ITS REPORT ON HIGHER EDUCATION

The report argues that while **National Education Policy (NEP 2020)** has created an **ambitious vision for higher education**, implementation is **being constrained by various issues**.

Key Findings of the Report

Key Issues	Recommendations
Inadequate Public Funding India's public expenditure on education is only about 4.12% of GDP (2021-22), below the NEP target of 6% of GDP.	Increase public spending to 6% of GDP , ensure annual budget growth of 8–10% to accommodate inflation.
Delayed Education Data Three years of the Annual Survey on Higher Education (AISHE) reports remain unpublished.	Need a fixed annual timeline to prevent data delays from hurting policy planning, especially for reserved categories (SC/ST/OBC/EWS).
Growing Inequality Among Institutions - Sharp divide between elite institutions and ordinary state universities. - Quality faculty, infrastructure and resources concentrated in a few institutions.	Strengthen state universities through PM-USHA , improve access, equity and quality across institutions.
Weak Implementation of Institute of Eminence (IoE) Scheme Only 12 out of 20 proposed IoEs have been notified.	- Notify remaining IoEs through a time-bound roadmap. - Expand scheme to include social science and humanities institutions.
Exam Irregularities Despite establishing a High-Powered Steering Committee (headed by Dr. K. Radhakrishnan) to monitor changes, paper leaks and exam cancellations continue to cause student anxiety.	Time-bound implementation roadmap for the recommendations. E.g. 371 st report (reforming NTA , Investigating NAAC Irregularities etc.)
Skill Gap and Employability Concerns - Curriculum often lags behind technological developments. Industry-academia disconnect	Integrate AI, Machine Learning, Data Science, Cybersecurity, Quantum Computing etc. into the learning process.
Others Issues: Weak Research and Innovation Ecosystem (Underutilization of funds, Limited international collaboration); Digital Divide . Other Recommendations: Establish a National Commission for Indian Knowledge Systems etc.	

6.5.5. HUMAN TRAFFICKING IN INDIA

Invoking powers under **Articles 32 and 142 of Constitution**, SC held trafficking to be a "**direct assault on constitutional dignity**" rooted within **Article 23** of Constitution.

- Article 23** prohibits trafficking in **Human beings and forced labour**.

Key Highlights of SC Directions

- Role of Consent:** SC held "**consent**" to be **central legal differentiator** in determining whether a case **involves trafficking or voluntary adult sex work**.
 - Police/rescue authorities to not criminalize **vulnerable individuals involved in sex work** based on consent to prevent misuse of anti-trafficking machinery.

- **Essential Elements of Trafficking: Action, Means, and Exploitation** (Based on **Palermo Protocol**).
 - **UN Protocol to Prevent, Suppress and Punish Trafficking in Persons** (opened for signature in Palermo, Italy, 2000) is first **legally binding instrument** with **internationally recognized** definition of human trafficking.
- **Child Protection and Rehabilitation:** Right to rehabilitation flows directly from **Article 21** forming part of right to live with dignity.
- **Victim Protection Plan:** Minimum standards for shelter homes, mental health support, vocational training, legal aid, reintegration measures, etc.

Human Trafficking in India

- **Status: 6,018 victims** have been reported to be trafficked including 2,297 children (**National Crime Records Bureau's Crime in India 2024**)
- **Anti-Trafficking Framework**
 - **Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023:** Recognizes trafficking as a **cognizable and non-bailable** offence.
 - **Bharatiya Nyaya Sanhita (BNS), 2023: Section 143** defines trafficking and **Section 144** deals with exploitation of trafficked persons, including sexual exploitation.
 - **Immoral Traffic (Prevention) Act, 1956 (ITPA):** Prevents prostitution and trafficking of persons for commercial sexual exploitation.
 - **National Investigation Agency (NIA):** Investigates cases human trafficking having inter-state, national and international ramifications.

6.5.6. GLOBAL TRENDS REPORT: FORCED DISPLACEMENT IN 2025

United Nations High Commissioner for Refugees (UNHCR) has released the **Global Trends Report: Forced Displacement 2025**.

Key Findings of the Report

- **Global Forced Displacement: 117.8 million** people were forcibly displaced worldwide by the end of **2025 (1 in every 70 people globally)**, marking the **first decline in a decade**.
- **Major Source Countries:** Seven in ten refugees originated from **Afghanistan, South Sudan, Sudan, Syria, Ukraine, and Venezuela**
 - The largest refugee-hosting countries were **Colombia, Germany, Türkiye, Uganda, and Iran**.
- **Statelessness: Rohingya (1.8 million)** remained the **world's largest** stateless population, constituting **41%** of the reported global total.
 - India hosted **22,700 stateless Rohingya** at the end of **2025**.
- **Children & Vulnerability:** Children accounted for 39% of refugees.
- **Disaster-induced Displacement:** Nearly **30 million new internal displacements** were triggered by disasters in **2025**, with **storms accounting for nearly 60%** of such displacements.

About UNHCR

- **Established: 1950** by the **United Nations General Assembly (UNGA)**.
- **Headquarters: Geneva, Switzerland**.
- **High Commissioner:** Headed by the **UN High Commissioner for Refugees**.
- **Mandate:** Provide **international protection** to refugees and seek **durable solutions** to refugee problems.
- **Funding:** Financed **primarily through voluntary contributions** from governments and private donors.
- **Nobel Peace Prize:** Awarded in **1954** and **1981**

Global Refugee Protection Framework

- **1951 Refugee Convention:** Defines who is a **refugee** and lays down their **rights**, State obligations, and the principle of **non-refoulement**.
 - **Principle of Non-refoulement:** Prohibits the **forcible return of refugees** to a country where they face **persecution, torture, or threats to life or freedom**.
- **1967 Protocol:** Removes the **temporal** and **geographical** limits of the 1951 Convention.
- **Global Compact on Refugees (2018):** **Non-binding** framework for **international responsibility-sharing**.
- **50 by 35 Initiative (UNHCR):** Aims to **halve refugee aid dependency by 2035** through **self-reliance and inclusion**.
- **India's Stand:** **Not a party** to the **1951 Convention** or **1967 Protocol**; follows a **case-by-case humanitarian approach** without a dedicated **refugee law**.



DAKSHA MAINS MENTORING PROGRAM 2026

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



DATE
6 July

DURATION
5 Months

HIGHLIGHTS OF THE PROGRAMME



Highly experienced and qualified team of mentors



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



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



Access to Daksha Mains Practice Tests



Emphasis on score maximization and performance improvement



Personalized one-to-one sessions with mentors



Subject-wise strategy documents based on thorough research



Continuous performance assessment, monitoring and smart interventions



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7. SCIENCE AND TECHNOLOGY

7.1. FLEX FUEL VEHICLES

Why in News?

Maruti Suzuki India Ltd has launched **India's first flex-fuel car** which gives the flexibility to customers to run on any blend of ethanol and petrol from E20 to E100.

About Flex Fuel Vehicles (FFVs)

- **Meaning:** Flex-fuel vehicles are **advanced internal combustion engine (ICE)** vehicles engineered to operate seamlessly on petrol, pure ethanol, or any combination of both, such as E20, E85, or E100.
 - India recently gave **full legal recognition to E100 (100% ethanol blend) fuel** paving way for the launch of flex-fuel vehicles.
- **Key Components:**
 - **Fuel/Ethanol Sensor:** This component detects the exact proportion of ethanol-to-petrol in the vehicle's fuel tank in real-time.
 - **Engine Control Unit (ECU):** The ECU processes data from the ethanol sensor to automatically adjust the engine's fuel injection and ignition timing for optimal efficiency.
 - **Adapted Fuel System:** FFVs utilize upgraded fuel lines, injectors, pumps, and fuel tanks built with corrosion-resistant materials to withstand ethanol's unique chemical properties.
- **Working Mechanism:** When a blended fuel is added, the fuel sensor measures the mix and signals the ECU. Since ethanol has a higher octane rating but lower energy density than petrol, the engine parameters are recalibrated dynamically to ensure efficient combustion and prevent knocking.



Read our previous
coverage on Ethanol
Blending



SIGNIFICANCE OF FLEX FUEL VEHICLES FOR INDIA

1

REDUCES IMPORT DEPENDENCE

~88% CRUDE OIL IMPORT

India imports ~88% of crude oil. FFVs reduce vulnerable exposure to global oil price shocks & geopolitical disruptions.

2

FOREIGN EXCHANGE SAVINGS

₹1.97 LAKH CRORE SAVED 316 LAKH MT SUBSTITUTED

EBP programme has substituted 316 lakh MT crude. Generated ₹1.97 lakh crore forex savings. Compounds with FFV (E85/E100).

3

HIGHER FARMER INCOME

₹1.66 LAKH CRORE TRANSFERRED

Feedstock (molasses, damaged grain) diverts surplus into energy. Over ₹1.66 lakh crore transferred to farmers.

4

EMISSIONS REDUCTION

~952 LAKH MT CO₂ REDUCTION

Blended fuels offer cleaner combustion with negligible PM. Net reduction of ~952 lakh metric tonnes of CO₂ emissions.

5

INFRASTRUCTURE SYNERGY & DISTRIBUTION



FFVs leverage India's massive existing fuel distribution network. Minimizes additional infrastructure cost and enables immediate scalability. Avoids heavy capex for new systems.

Comparison between Flex Fuel Vehicles and Traditional Vehicles

Parameter	Flex Fuel Vehicles	Traditional Petrol Vehicles
Fuel Compatibility	Runs on pure petrol, pure ethanol, or any blend (E20-E100).	Designed to operate solely on pure petrol or very low blends (up to E10).
Engine Adaptability	Equipped with dynamic sensors and ECU systems to adjust to fuel mixtures.	Optimised strictly for petrol combustion; high ethanol blends can damage the engine.
Emissions	Substantially lower GHGs and particulate matter emissions.	Higher emissions and larger carbon footprint.
Cost Efficiency	Cheaper fuel (E85) could lower running costs despite lower mileage.	Reliant entirely on volatile, imported fossil fuel prices.

Concerns Associated with Flex Fuels

- **Reduced Fuel Efficiency:** Ethanol has a lower energy density per litre compared to petrol. Vehicles running on high ethanol blends inherently consume more fuel to cover the same distance, resulting in lower mileage.
- **Food vs. Fuel Debate:** A heavy reliance on food crops like sugarcane, maize, and grains for ethanol could trigger competition for agricultural resources, potentially putting pressure on food availability and prices.
- **Water Stress:** Sugarcane is a highly water-intensive crop, and expanding its cultivation for ethanol in water-stressed regions of India raises serious ecological and sustainability concerns.
- **Increased Costs:** The necessity for specialized engine components and corrosion-resistant materials makes FFVs marginally more expensive to manufacture, and they may require more frequent maintenance to prevent engine wear.

Way Ahead

- **Learning from the Brazilian Model:** Brazil's successful transition to an 80% flex-fuel fleet teaches the importance of a phased transition, extensive consumer education, and giving motorists the power of choice at the pump between blended petrol (E27) and pure ethanol (E100) based on dynamic pricing.
- **Prioritizing Second-Generation (2G) Ethanol:** India's strategy must urgently pivot towards extracting ethanol from agricultural waste, bamboo, and damaged grains rather than food-grade crops.
- **Sustainable Crop Zoning:** Based on regional water availability to prevent the unchecked cultivation of water-guzzling sugarcane in drought-prone areas.
- **Creating a Holistic Ecosystem:** India's future mobility matrix must be an integrated blend of EVs, Biofuels (FFVs), and Hydrogen. FFVs serve as the perfect, low-cost transitional bridge technology while the nation builds its renewable electric grid.

Conclusion

Flex-Fuel Vehicles (FFVs) offer a pragmatic pathway towards cleaner mobility by reducing fossil fuel dependence, enhancing energy security, and supporting India's ethanol economy. However, their long-term success will depend on sustainable feedstock, robust ethanol infrastructure, and balanced policies that reconcile energy needs with food and water security, ensuring that the transition remains both economically viable and environmentally sustainable.

Related News

India is likely to introduce **blending of isobutanol with diesel**.

About Isobutanol

- Isobutanol is a **four-carbon alcohol (C₄H₁₀O)**, making it a **higher alcohol** compared to ethanol, which contains only two carbon atoms.

- Can be produced from **renewable sources** like biomass, agricultural waste, or through **processes linked to ethanol or sugarcane production**.
- **Uses: Industrial solvents** in products like paints, coatings; **potential biofuel** for transportation, etc.
- **Suitability in Blending with diesel:** Blends **uniformly without any additional additives, higher energy content, less volatile and corrosive** offering higher compatibility with existing engines and fuel infrastructure.

7.2. BATTERY ENERGY STORAGE SYSTEM (BESS)

Why in the News?

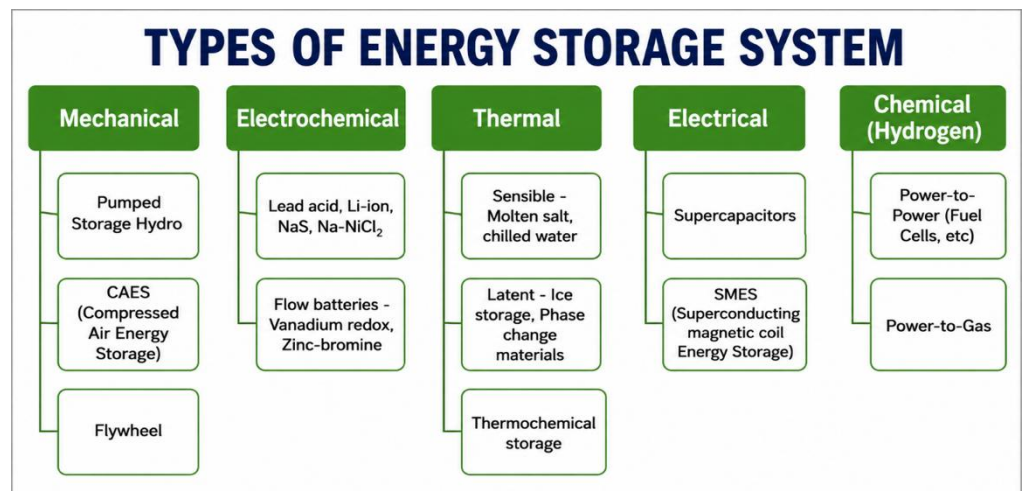
Adani Green Energy Ltd (AGEL) commissioned the world's largest Battery Energy Storage System (BESS) at a single location outside China at Khavda, Gujarat.

More on the News

- The 3.37 GWh project integrates **lithium-ion battery technologies** with advanced energy management systems.

About Battery Energy Storage System (BESS)

- **Meaning:** Electrochemical devices that work by converting electrical energy into chemical energy during the charging process and then converting it back into electrical energy during discharging.
 - Forms part of a broader **Energy Storage System (ESS)** (See infographic).
- **Target:** The government has committed to deploying 47 GW of BESS by 2032.
- **Battery technologies utilized in BESS:**
 - **Lithium-Ion Batteries (LiB):** Lithium-ion batteries are lightweight, offer high energy density, have a high cycle life, and possess favorable discharge resistance.
 - **Sodium-Based Batteries:** These batteries operate at high temperatures (typically above 300°C) and are built using inexpensive, non-toxic materials.
 - **Flow Batteries:** Unlike **traditional solid batteries**, flow batteries store energy in **liquid electrolyte solutions** kept in separate external tanks. E.g., **Vanadium Redox Flow Batteries (VRB)**, **Zinc-Bromine Flow Batteries (ZBB)**, etc.
 - **Other:** Zinc-Based Batteries, Lead Acid and Advanced Lead Acid Batteries, etc.

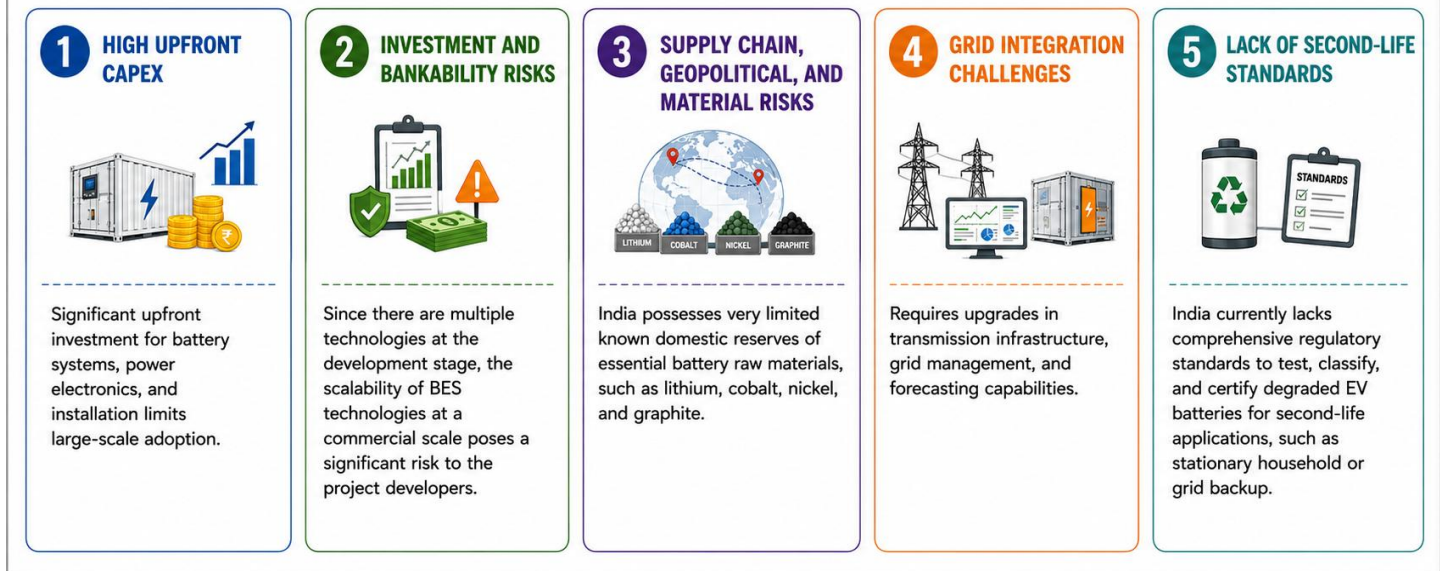


Need for Promoting BESS

- **Integration of Intermittent Renewable Energy:** India has committed to achieving **500 GW of non-fossil fuel-based electricity capacity by 2030** and meeting **50% of its cumulative installed capacity from non-fossil sources by 2030**.
 - Major clean sources like wind and solar are **highly variable** and BESS is essential to capture surplus clean energy, facilitating reliable **round-the-clock power supply**.
- **Peak Shaving and Tariff Reduction:** BESS allows for **energy arbitrage and peak shifting**, storing power during low-cost, off-peak times and releasing it during peak hours.
 - This manages peak electricity demands, **brings down peak deficits, and lowers peak tariffs** for distribution companies (DISCOMs) and consumers.

- **Replacing Polluting Diesel Generators:** Regulatory frameworks mandate that commercial, industrial, and residential consumers shift from diesel generator sets to **cleaner battery energy storage backup systems**.
- **Supports Electric Mobility:** Facilitates fast EV charging and reduces grid stress from increasing electric vehicle adoption.
- **Promotes Energy Independence:** Reduces dependence on imported fossil fuels by maximizing the use of domestic renewable resources.

CHALLENGES IN PROMOTING BATTERY ENERGY STORAGE SYSTEMS (BESS)



Initiatives for BESS deployment in India

- **Financial Incentives:** E.g., **Viability Gap Funding (VGF) Scheme** aims to support the creation of **4,000 MWh** of BESS projects by 2030-31.
- **Manufacturing Schemes:** Ministry of Heavy Industries administers a **Production-Linked Incentive (PLI) Scheme** under the **National Programme on Advanced Chemistry Cell (ACC) Battery Storage**.
- **Policy and Regulatory Framework**
 - **National Framework for Promotion of ESS, 2023:** This establishes a comprehensive national roadmap for deployment, market integration, and regulatory support.
 - **Infrastructure Status:** In 2022, the Ministry of Finance included ESS in the **Harmonised Master List of Infrastructure**, helping developers secure lower-cost, long-tenure financing.
 - **Power System Integration:** The Electricity Rules were amended in 2022 to explicitly recognise Energy Storage Systems (ESS) as an integral part of the power system, enabling their participation across generation, transmission and distribution functions.
- **Demand-Side and Grid Integration Enablers: Energy Storage Obligation (ESO)** by the Ministry of Power mandates designated entities to procure a specified share of electricity from energy storage systems.

Way Forward

- **Promoting Domestic Manufacturing and Supply Chains:** Expand schemes like PLI program specifically targeted at advanced chemistry cells (ACC) and R&D.
- **Promote Closed-Loop Recycling:** Policy must mandate and incentivize closed-loop recycling, where spent batteries are directly processed to reclaim high-value cathode feedstock (lithium, cobalt, nickel, and manganese), cutting down on resource consumption and geopolitical import risks.

- **Promoting R&D:** Public funding of research on energy storage technologies should be promoted. OECD countries and Multilateral Development Banks (MDBs), through grants, can help in developing research capabilities globally.

Conclusion

BESS are indispensable for enabling large-scale renewable energy integration, enhancing grid reliability, and supporting India's clean energy transition. Strengthening domestic manufacturing, policy support, and innovation will be crucial to realizing India's energy security goals and achieving its net-zero ambitions.

7.3. GREEN HYDROGEN

Why in the News?

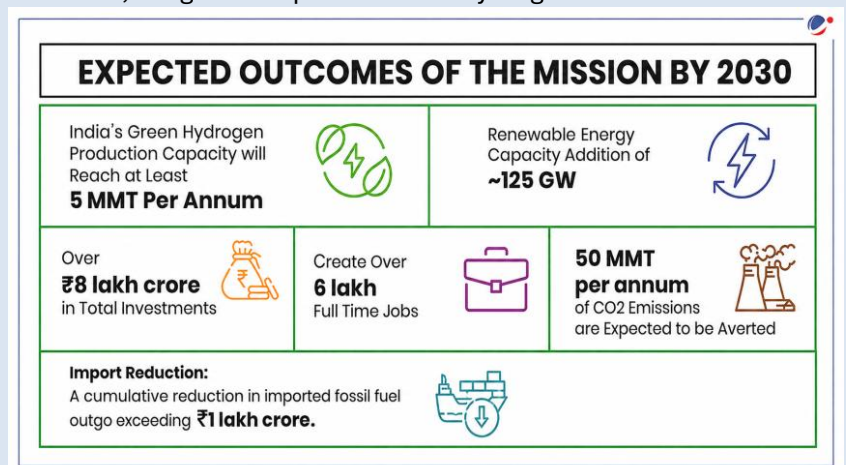
The Union Minister for New and Renewable Energy launched the **Green Hydrogen Certification Portal of India**.

More on the News

- Developed by Ministry of New and Renewable Energy (MNRE), the portal will facilitate **transparent certification and regulatory compliance** under the **Green Hydrogen Certification Scheme of India** and **Strategic Interventions for Green Hydrogen Transition (SIGHT)** programme of the National Green Hydrogen Mission.

National Green Hydrogen Mission

- **Launched: In 2023** with a financial outlay of **₹19,744 crore** extending through **Financial Year 2029-30**.
- **Objective:** To make India a Global Hub for production, usage and export of Green Hydrogen and its derivatives.
- **Key Components:**
 - **Green Hydrogen Certification Scheme of India:** Establishes the **formal framework and methodology** for measuring, reporting, verifying, and certifying green hydrogen production.
 - It defines green hydrogen as hydrogen whose total greenhouse gas emissions across the entire production cycle do not exceed **2 kg CO₂ equivalent per kg of H₂**, averaged over 12 months.
 - **SIGHT Financial Incentive Programme:** Direct incentives under two streams (**Electrolyser manufacturing & Green hydrogen production**) to build a domestic value chain and de-risk early movers.
 - **Geographically Concentrated Hydrogen Hubs:** Promotes co-located production, infrastructure, and end-use clusters to cut logistics costs.
 - **Sectoral Pilot Projects:** Funds pilots to test technology, safety, and operations in hard-to-abate sectors such as steel, clean mobility, etc.
 - **Research, Development & Innovation (SHIP):** ₹400 crore Public-private R&D scheme supporting new projects and startups.



What is Green Hydrogen?

- Green hydrogen is hydrogen produced using **renewable energy, such as solar or wind power**, rather than fossil fuels.
 - It is primarily generated through a chemical process called **electrolysis**, in which an electric current powered by **renewable energy splits water molecules (H₂O) into hydrogen (H₂) and oxygen (O₂)**.
 - Since the electricity is derived from clean sources, this method allows hydrogen to be produced **without emitting carbon dioxide** into the atmosphere. (Refer infographic to know about other types of hydrogen gases)

- Green hydrogen can also be produced through the **thermochemical or biochemical conversion of biomass** (such as agricultural waste), provided the emission remains near zero.

Application of Green Hydrogen:

- Industrial Feedstock:**
 - Petroleum refining** (desulphurisation and hydrocracking), **fertilizer production** (via green ammonia), and **steelmaking** (for direct iron reduction).
- Heavy Transportation:** Powers **fuel cells** in long-haul **road transport, maritime shipping, and railways**.
- Space Missions:** Reacting hydrogen and oxygen together inside a fuel cell generates **electricity to power onboard systems** while producing **drinking water** as a sustainable by-product for the crew.
- Energy & Grid Support:** Acts as **long-term energy storage medium** to buffer intermittent wind and solar power and can be potentially **blended directly into natural gas networks** for commercial use.

Hydrogen Colour	Mode of Production	Fuel	Carbon Intensity
White Hydrogen	Naturally occur	Natural geological processes	–
Green Hydrogen	Electrolysis	Electricity from Wind, Solar, Geothermal, Tidal, Hydro	Near zero
Purple/Pink Hydrogen			
Yellow Hydrogen			
Blue Hydrogen	Steam Methane Reforming, Gasification + CCS	Natural gas and coal	Low
Turquoise Hydrogen	Pyrolysis	Natural gas	Medium/low – solid carbon by-product
Grey Hydrogen	Steam methane reforming (SMR)		Medium
Brown Hydrogen	Gasification	Coal – Brown: Lignite, Black: Black coal	Highest
Black Hydrogen			

Significance of Green Hydrogen for India

- Decarbonising Hard-to-Abate Sectors:** Directly **replaces carbon-intensive "grey" hydrogen** in **refining and fertilizer production**, and clean-powers sectors where direct electrification is impractical (**steel, shipping, and aviation**).
- Enhancing Energy Security:** By substituting imported fossil fuels in sectors such as fertilisers, refining, steel and shipping, the National Green Hydrogen Mission is expected to reduce cumulative fossil-fuel imports worth over ₹1 lakh crore by 2030.
- Reducing Regional Imbalances:** Enables **mineral-heavy eastern states** (Odisha, Jharkhand, West Bengal, and Chhattisgarh) that lag in wind and solar potential to leap forward in their energy transitions by building clean hydrogen infrastructure around their industrial clusters.
- Ensuring Grid Stability:** Provides a robust, long-term, and seasonal **energy storage medium** that buffers the grid against the natural intermittency of wind and solar power.

Issues with Green Hydrogen

- High Initial Cost:** High capital costs for electrolyzers, dedicated pipelines and storage plants slow down final investment decisions.
- Storage:** Due to its **low volumetric energy density**, hydrogen requires extreme compression or cryogenic cooling.
- Safety:** It's **highly flammable, colorless, and odorless** which makes leak detection difficult.
- Supply Chain:** Domestic electrolyser manufacturing is still developing, while different electrolyser technologies depend on critical materials such as nickel, iridium, platinum and titanium, exposing the sector to global supply-chain risks. The SIGHT programme seeks to build indigenous manufacturing capacity.

Related News: India's First Hydrogen Train

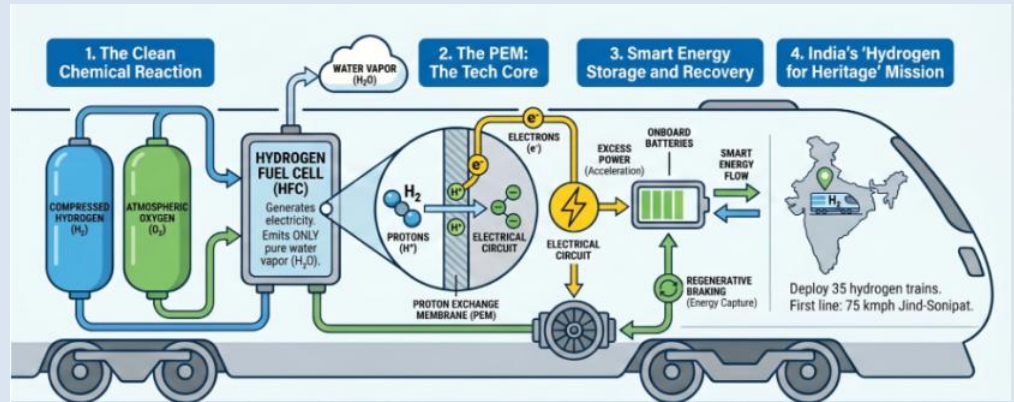
The Prime Minister recently flagged off **India's first green hydrogen-powered train** under the **"Hydrogen for Heritage" Project** from **Jind, Haryana**.

- With this, India joins a select group of countries exploring hydrogen-powered rail transportation. These include **Germany, Japan, China and the United States**.

- Germany's **Coradia iLint** was the **world's first commercial hydrogen train** (2018).

Working of Hydrogen Train

- The train runs on **hydrogen fuel cell technology** instead of **diesel or overhead electric wires**.
- Hydrogen stored **onboard reacts with oxygen** from the **air inside the fuel cell, producing Electricity** (to power the train), and **Water vapour** (as the only emission).
- The fuel cell provides a constant power supply.**
- Lithium Iron Phosphate batteries** store surplus electricity when power demand is low.
 - During **acceleration (higher power demand)**, the batteries supplement the fuel cell.
 - As the **train slows down**, excess electricity from the fuel cell recharges the batteries.



Conclusion

Green hydrogen is pivotal to **India's energy security and Net Zero 2070 goals**. Through the National Green Hydrogen Mission's incentives, India can build a self-reliant value chain, cut imports, and emerge as a global green hydrogen hub, driving a clean and sustainable energy transition.

7.4. INDIA'S SEMICONDUCTOR ECOSYSTEM

Why in the News?

NITI Aayog's **Frontier Tech Hub** released India's first comprehensive 10-year roadmap titled **"Future of India's Semiconductor Industry"**.

Future of India's Semiconductor Industry Roadmap

- Vision:** Build a resilient **USD 120-150 billion domestic semiconductor value chain by 2035**, positioning India among the **top 3 global destinations for advanced packaging and OSAT (Outsourced Semiconductor Assembly and Test)**.
- Five Pillars of the Roadmap:**
 - Pioneering:** Strengthening ability to drive innovation and advanced research by building sovereign design and research capabilities, R&D excellence and harnessing agentic AI for semiconductor engineering.
 - Establish **National Frontier Semiconductor Research Programme** and Strategic Semiconductor IP and Patent Programme.
 - Policy and Investment:** **Mobilizing USD 135–180 billion in cumulative semiconductor investments** over next decade directed toward growth capital across design, fabrication, advanced packaging, materials and supporting infrastructure.
 - Establish an **autonomous national semiconductor nodal agency** and implement single window clearance.
 - Outcome-linked incentives** tied to capacity, yield, localisation and exports.
 - Introduce **phased domestic chip adoption** mandates across government, defence, telecom, railways, energy and automotive sectors.
 - Production:** Focus on **four priority segments** – Wafer Fabrication, Advanced Packaging and OSAT, Critical Materials and Substrates, and Secure and Mission Critical Manufacturing.

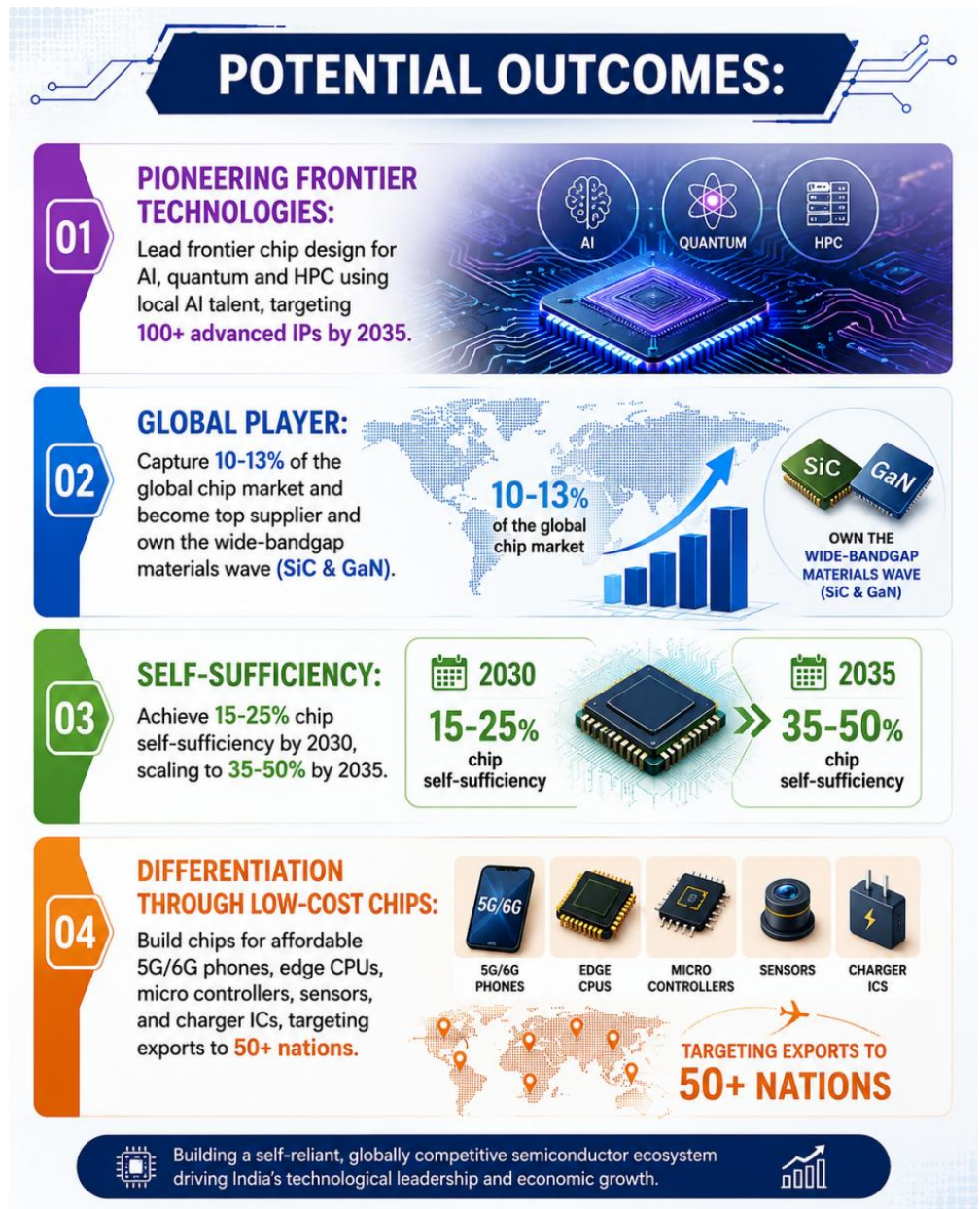
- **People:** Creating a balanced, end-to-end **national semiconductor talent pyramid** spanning shop floor technicians, manufacturing and design engineers, advanced packaging specialists, materials scientists and system level solution architects.
- **Partnership:** Partnerships are strategic instruments for India to accelerate capability building, de-risk investments, access frontier technologies and integrate domestic industry into global semiconductor supply chains.
 - Establish strategic geopolitical partnerships with **priority partners** like US, Japan, EU, South Korea etc.

Significance of Semiconductor Industry in India

- **Strategic Independence:** Rising geopolitical tensions, supply-chain vulnerabilities and the strategic importance of chip technology require India to develop the indigenous ecosystem.
- **National Security:** As many semiconductor parts used in defence systems are produced outside India, deploying them in our aerospace and defence programmes is increasing threats to national security.
- **Foreign Exchange Reserves:** India, for instance, cumulatively spent almost USD 150 billion on importing crucial semiconductor products during FY17-FY25.
- **Societal Upliftment:** Advancements in next generational telecom and other digital technologies promises to bridge the digital divide and democratise access to essential services.

India's Semiconductor Industry and Growth Drivers

- **Manufacturing Ecosystem:** Continues to expand with 13 approved semiconductor projects operational or under development.
 - Also, Indian industry has developed Indigenous processors like DHRUV64, SHAKTI, AJIT, VIKRAM, and THEJAS.
- **Market:** The size of the Indian semiconductor market was about \$38 Bn in 2023 and is expected to reach **\$100-\$110 Bn by 2030**.



- **Investments:** Semicon India Programme has attracted investment commitments of approximately INR 1.6 trillion (US\$17.31 billion).
- **Key Growth Drivers:**
 - **Design Talent Base:** India accounts for nearly **20% of the world's semiconductor design workforce**, and hosts around 7 percent of the world's semiconductor Global Capability Centers (GCCs).
 - **Surging Domestic Demand:** India's semiconductor market, valued at roughly **USD 45-60 billion (2025)**, is projected to reach **USD 100-200+ billion by the early-to-mid 2030s**, driven by smartphones, EVs, 5G/6G rollout, AI infrastructure, data centres and consumer electronics.
 - **Electronics Manufacturing Base:** India's electronics sector is the **third-largest and fastest-growing globally (FY25)**, with electronics exports reaching **USD 22.2 billion** in the first half of FY26 – the second-largest export category.
 - **Global Supply Chain Diversification (“China+1”):** Geopolitical tensions and export controls are pushing global chip-makers to diversify manufacturing and packaging capacity to trusted, allied destinations, benefiting India.

Challenges with Semiconductor Industry

- **Technological Complexities:** Chip design process has become increasingly complex due to the rise of AI applications, which demand compute-intensive chips to power GPUs and high-performance computing systems.
 - For Indian-manufactured chips to successfully integrate into global systems, they must meet strict international performance benchmarks and standards.
- **Export Controls & Technology Blocs:** Semiconductor technologies are increasingly shaped by tightening export controls, technology blocs, and national security considerations.
- **Materials dependency is the real choke-point:** Of the four critical minerals most commonly used in semiconductors, China has a dominant position in three such as silicon, Germanium and Gallium.
- **High Cost:** Building a modern analog fab typically requires over USD 5 billion in capital investment.
 - On the other hand, high licensing costs of tools and steep learning limit ability of small firms to scale innovation by depriving them of access to critical design infrastructure.
- **Talent Scarcity:** Semiconductor manufacturing requires high level of precision and specialised skills in which India is facing shortages.
- **High Resource Requirement:** The semiconductor manufacturing process is exceptionally energy-intensive and require thousands of gallons of high-grade water.
- **Long Gestation Period:** Typically, fab units require four to five years before commencing production.
- **R&D Infrastructure:** India is lagging significantly behind on R&D infrastructure.

Government Initiatives for Semiconductor Industry

- **India Semiconductor Mission (ISM) 2.0:** Aims to holistically build the semiconductor ecosystem.
- **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECs):** It offers a 25 percent financial incentive on capital expenditure for producing key electronic goods.
- **FutureSkills PRIME Programme:** Joint initiative of MeitY and NASSCOM designed to position India as a global digital talent hub.
- **Global Collaboration:** India- U.S. Initiative on Critical and Emerging Technology (iCET) in deepening strategic cooperation across key technology sectors, including, semiconductors.
- **Others:** Production-Linked Incentive (PLI) scheme for IT hardware, the Design-Linked Incentive (DLI) scheme, and state-level policies (e.g., Gujarat Semiconductor Policy offering up to 30% capex subsidy) .

Conclusion

Winning the semiconductor race will not be easy if India continues to run the existing race; instead, it should shift gears and target becoming the ecosystem player that the global semiconductor industry cannot run without. This requires India to pivot away from the catch-up game in the foundry race and focus on winning **the “More-than-Moore” era**, where advanced packaging, system integration and manufacturing scale matter as much as transistor nodes.

7.5. NEWS IN SHORTS

7.5.1. EMERGING POWER OF SYNTHETIC BIOLOGY

Understanding of genes, cells, along with advances in AI have caused **engineering cells and organisms on a genome-wide scale** with desired properties.

About Synthetic Biology

- **Meaning:** Involves **redesigning organisms for useful purposes** by engineering them to have **new abilities**.
 - E.g. harnessing microorganisms for **bioremediation to clean pollutants**, modifying rice to **produce beta-carotene** for preventing Vitamin A deficiency, etc.
- **Comparison with Genome Editing:**
 - In synthetic biology, scientists **typically stitch together long stretches of DNA** (already found in an organism or entirely novel) and insert them into an organism's genome.
 - In genome editing, scientists **typically use tools to make smaller changes** (delete or add small stretches of DNA) to organism's own DNA.

Key Applications of Synthetic Biology	
Human health	• Personalized cell and gene therapies: Treat underlying cause of a disease. • Deliver therapeutic agents: Engineering bacteria to deliver directly to tumour cells enhancing precision. • Regenerative Medicine: E.g. 3D organ bioprinting or xenotransplantation.
Food security and soil regeneration	• Soil Engineering: Genetically engineered microorganisms to serve as soil fertilizer, biopesticides, bioherbicides and engineered probiotics. • Soil Monitoring: Biosensors for real-time monitoring of targeted environmental compounds, such as pollutants.
Circularity and emissions reduction	• Carbon Sequestration: Improving/Replacing natural photosynthesis process with new-to-nature pathways for carbon sequestration. • Tackling Plastic Pollution: Enzyme-powered decomposition, growing biodegradable plastics and materials produced by microorganisms.
Distributed manufacturing	• Establishing distributed bioprocesses with local production close to feedstocks.

Challenges and Concerns Associated with Synthetic Biology

- **Affordability** Personalized therapies could be **particularly expensive**.
- **Biosafety:** Potential **unintended risks of releasing genetically engineered microorganisms** into environment.
- **Biosecurity Risks:** Empower nefarious actors to **develop bioweapons** (e.g. by accelerating development of toxins).
- **Cyber-biosecurity:** Due to **growing interaction between biology and automation**.
- **Ethical challenges:** Issues regarding **engineering life, equity and distribution of risk, benefits, and access**, etc.

7.5.2. IMI-RESISTANT MUSTARD HYBRIDS

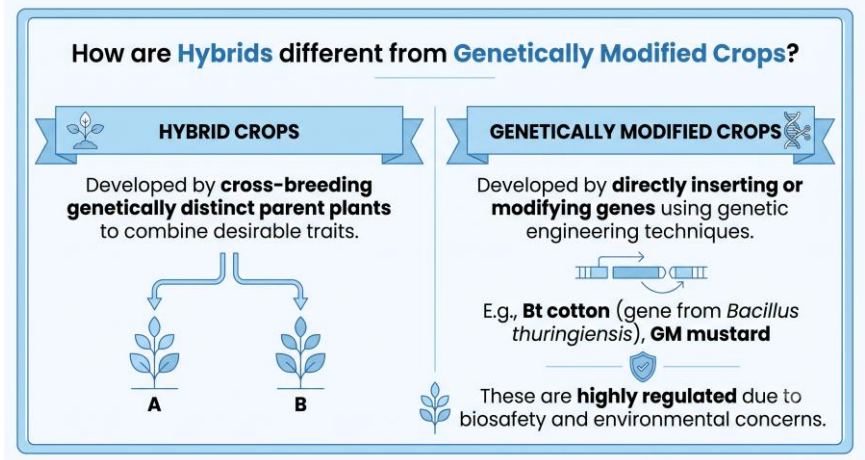
India is set to begin the wide-scale cultivation of **Imidazolinone-Resistant (IMI-resistant) mustard hybrids**.

- Mustard is a **major oilseed crop**. India imported around 16 million tonnes of edible oil, worth nearly ₹1.6 lakh crore in 2024-25.

About IMI Resistant Mustard Hybrids

- It is developed through a process called **mutation breeding**, in which scientists breed crops to preserve certain natural mutations.
- **Basis:** The process is based on an enzyme called **acetolactate synthase (ALS)**, which is essential for plant growth.

- **Normal Plants:** IMI herbicides inhibit the ALS enzyme, disrupting growth and causing plant death.
- **IMI-resistant Hybrids:** A mutation alters the ALS enzyme, preventing herbicide binding.
- **Advantages of IMI-Resistant Mustard Hybrids**
 - **Weed Management:** Enables efficient control of Orobanche/Phelipanche.
 - **Orobanche** is a **parasitic weed** that attaches to mustard roots and draws water and nutrients from the host plant.
 - **Lower Labour Dependence:** Minimizes need for labour-intensive manual weeding operations.
 - **Other:** Enhanced Productivity, etc.



7.5.3. SMART SEED COATING TECHNOLOGY

ICAR–Indian Institute of Oilseeds Research (ICAR-IIOR) has developed and demonstrated an innovative biopolymer-based **Smart Seed Coating Technology**.

About Smart Seed Coating Technology

- The technology utilizes **biodegradable biopolymeric materials** to form a multifunctional protective coating around the seeds.
 - This coating acts as a **carrier platform that delivers beneficial microorganisms, nutrients, micronutrients, crop protection agents, and plant growth-promoting compounds directly to the seed-soil interface.**
- **Significance:**
 - Promotes **rapid germination** and enhanced **root development**.
 - Improved **tolerance to both biotic (pests and diseases) and abiotic (temperature extremes and droughts) stresses.**

7.5.4. SKYCAST SYSTEM

India became 19th country in the world to install "SkyCast System" at Indira Gandhi International Airport under the recently approved Mission Mausam initiative.

About SkyCast System

- SkyCast is an **advanced atmospheric monitoring and forecasting system** designed to **enhance aviation safety** through real-time weather intelligence.
- It integrates technologies such as **Radar Wind Profiler, SODAR, Microwave Radiometer, Ground-based Fog Aerosol Spectrometer (GFAS), and CL61 Lidar-based Ceilometer.**
 - **Radar Wind Profiler** measures wind speed, direction, turbulence, vertical velocity, and boundary-layer dynamics up to 3 km altitude.
 - **GFAS** analyzes fog droplets, aerosols, and aerosol-fog interactions.
 - **CL61 Ceilometer** tracks the vertical structure of fog.
- SkyCast is based on insights from the **Winter Fog Experiment (WiFEX)** launched by IITM and IMD under the Ministry of Earth Sciences at Delhi's IGI Airport in 2015.

7.5.5. JAMES WEBB SPACE TELESCOPE

NASA's James Webb Space Telescope has detected methane on interstellar comet 3I/ATLAS for the first time.

About James Webb Space Telescope

- It is the successor to the **Hubble Space Telescope**, designed to explore the Universe's origins by studying the formation of stars, planets, and the earliest galaxies.
- It is an international partnership between **NASA**, **ESA** (European Space Agency) and **CSA** (Canadian Space Agency).
- It observes the universe in the **infrared** spectrum.
- **Launch:** In 2021, aboard Ariane from Europe's Spaceport in French Guiana
- **Orbit:** Lagrange point 2, 1.5 million km from Earth

7.5.6. ANCHOR: ATLAS OF NEUROCHEMICAL CHARACTERIZATION OF THE HUMAN BRAINSTEM WITH 3D RECONSTRUCTION

Indian Institute of Technology Madras has created **ANCHOR: Atlas of Neurochemical Characterization of the Human brainstem with 3D Reconstruction**.

About ANCHOR

- World's most **detailed 3D Atlas of human brainstem**, comprising most comprehensive, multi-modal, 3D maps and atlases to date spanning from **prenatal period to childhood and adult brains**.
- Encompass more than 200 brainstem nuclei and fiber tracts, reconstructed from hundreds of serial sections.
- **Brainstem** is the structure that connects **cerebrum to spinal cord and cerebellum**.
 - **Composed of (descending order):** midbrain, pons, and medulla oblongata.
 - **Functions:** breathing, consciousness, blood pressure, heart rate, sleep, contains many critical collections of white and grey matter, etc.

7.5.7. FIBRE-OPTIC DRONES

Fibre-Optic Drones (Invisible drones) are being used in the conflicts.

About Fibre-Optic Drones

- They are **electronic warfare-resistant drones** that use **physical fibre links** instead of radio signals, making them **difficult to detect and jam**.
- They are **FPV (First-Person View) drones** connected to the operator through a thin **fibre-optic cable**, transmitting **commands and live video as pulses of light**.
 - **Fibre optics** uses very thin glass or plastic threads through which light can travel to carry information. It works on the principle of **total internal reflection**.
- **Features:** Immune to Electronic Warfare, Difficult Detection, more accurate navigation in difficult terrains.
- **Challenges:** Limited Reaction Time and range etc.

7.5.8. BGP HIJACKING

Telegram founder claimed that access to the app was being compromised through **BGP (Border Gateway Protocol) hijacking**.

- **The Border Gateway Protocol (BGP)** is the internet's routing system. It tells networks across the world how to reach specific IP addresses.

About BGP hijacking

- It is sometimes referred to as **prefix hijacking, route hijacking or IP hijacking**
- It is a **technique in which internet traffic is misdirected** by falsely advertising the route to a website or online service.

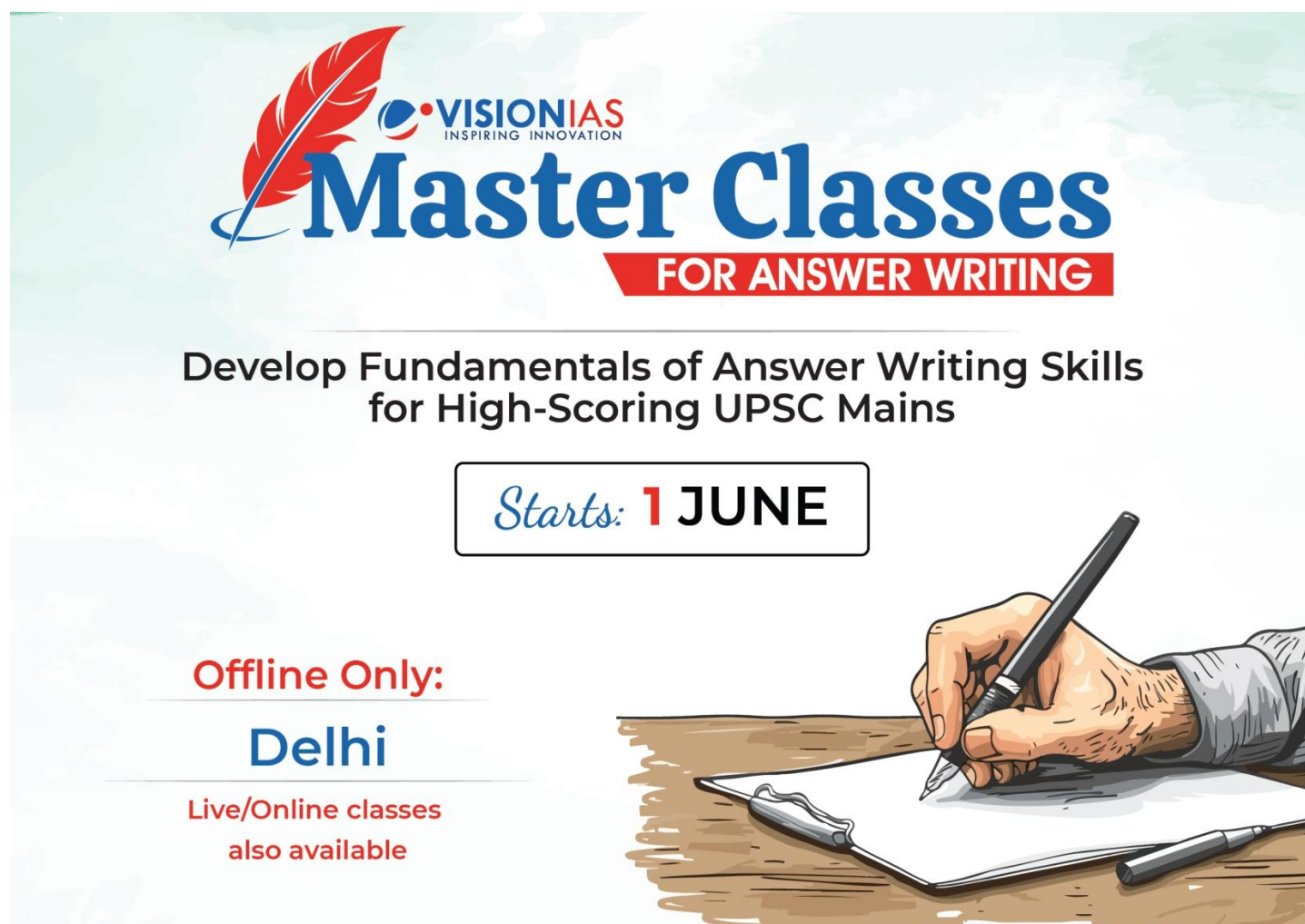
7.5.9. UNGA POLITICAL DECLARATION ON HIV/AIDS

The **UN General Assembly** adopted a new Political Declaration on HIV/AIDS to end the epidemic as a public health threat by 2030.

- HIV (Human Immunodeficiency Virus) targets the human immune system, eventually leading to AIDS (Acquired Immunodeficiency Syndrome).

About the Declaration

- 95-95-95 Targets:** Aims for 95% of people to know their status, 95% to access treatment, and 95% to achieve viral suppression by 2030.
- System Integration:** Mainstreams comprehensive HIV services into Universal Health Coverage (UHC) and primary care systems globally.
- Targeted Elimination:** Prioritizes halting vertical (mother-to-child) transmission, ending pediatric AIDS, and dismantling structural stigma, discrimination, and inequalities.



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8. CULTURE

8.1. HARAPPAN ARTEFACTS

Why in the News?

NCERT modified and then restored the original image of the Harappan “Dancing Girl” in its Class 9 Arts Education textbook. Artifacts

About Harappan Dancing Girl

- A **bronze figurine** from **Mohenjo-daro**.
- **Origin:** Belongs to the **Harappan (Sindhu-Sarasvati or Indus Valley)** civilization, dating approximately from 2600-1900 BCE.
- Discovered in **1926** during excavations led by **John Marshall**.
- **Current Location:** National Museum in New Delhi.

Harappan Dancing Girl



CHARACTERISTICS



The figurine is about **10.8 cm** tall, making it a remarkable example of ancient craftsmanship.



Created using the lost-wax casting technique, a method of metal casting in which a molten metal is poured into a mold created by means of a wax model.



Bare torso, a necklace, and bangles. Left arm covered with bangles from shoulder to wrist (24–25 bangles) while Right arm has two bangles above the elbow and one at the wrist.

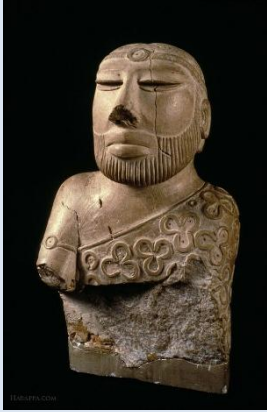


Pose: Left leg bent forward, right hand placed on right hip.



Hair: Gathered in a heavy coil over the right shoulder.

Other Important Artefacts/Objects from Harappan Civilization

Artefacts	What it reveals about Harappan Civilization?
Cultural and symbolic objects	
Priest-King Sculpture (Mohenjo Daro) Made of Steatite 	Presence of elite class, sophisticated sculpture skills, distinctive clothing, social hierarchy etc.
Pashupati Seal (Mohenjo-daro) A seal depicting a three-faced deity seated on a raised platform, surrounded by animals. 	Religious beliefs, animal symbolism, possible proto-Shiva interpretation
Terracotta Mother Goddess Figurines (Harappa, Mohenjo-daro etc.) 	Fertility beliefs, household worship.
Others: Fire Altars (at Kalibangan, Lothal showcasing Potential ritualistic practices); a terracotta figurine seated in a 'namaste'. 	

Objects of daily use			
Seals (Harappa, Mohenjo-daro etc.)		Trade, administrative control, writing system. Pictographic script: Written in boustrophedon style i.e., writing in right to left in one line & then left to right in next line. - However, it has been not deciphered yet.	
Seal showing a unicorn 	Seal showing a bull 	Seal showing a swastika 	Seal showing a horned tiger 
Stone weights (Dholavira etc.) 		Internal and foreign trade: The use of standardized weights and measures facilitated trade and commerce.	
Farming tools (Banawali (Haryana) and Dholavira respectively) E.g. plough; bronze chisel 		- Development of Agriculture, eating habits - Other: Granary at Harappa and Mohenjo-daro	
Jewellery and Beads (Workshops at Chanhudaro, Lothal) Beads of carnelian, a reddish semiprecious stone found mostly in Gujarat, conch shells made into shell bangles. 		Showcase industrial specialization, skilled artisanship, social lifestyle, bead manufacturing technology, etc.	
Saddle querns 		Used for grinding cereals	

Other Items

Games and Toys

A gamesboard engraved on a stone (Dholavira), terracotta models of the plough (Cholistan and at Banawali, Haryana) etc.



Pottery

E.g. Terracotta pots (Dholavira); a design on a pot which seems to tell the story of the thirsty crow, who finds a clever way to drink water at the bottom of the pot (Lothal).



- **Metallurgy:** Harappans mastered the art of working **copper**. When mixed with tin, **bronze** (harder than copper) was formed which was used to make tools, pots, figurines etc.
 - E.g. Bronze Bull Figurine (animal importance), Copper mirror etc.



8.2. GYAN BHARATAM MISSION

Why in the News?

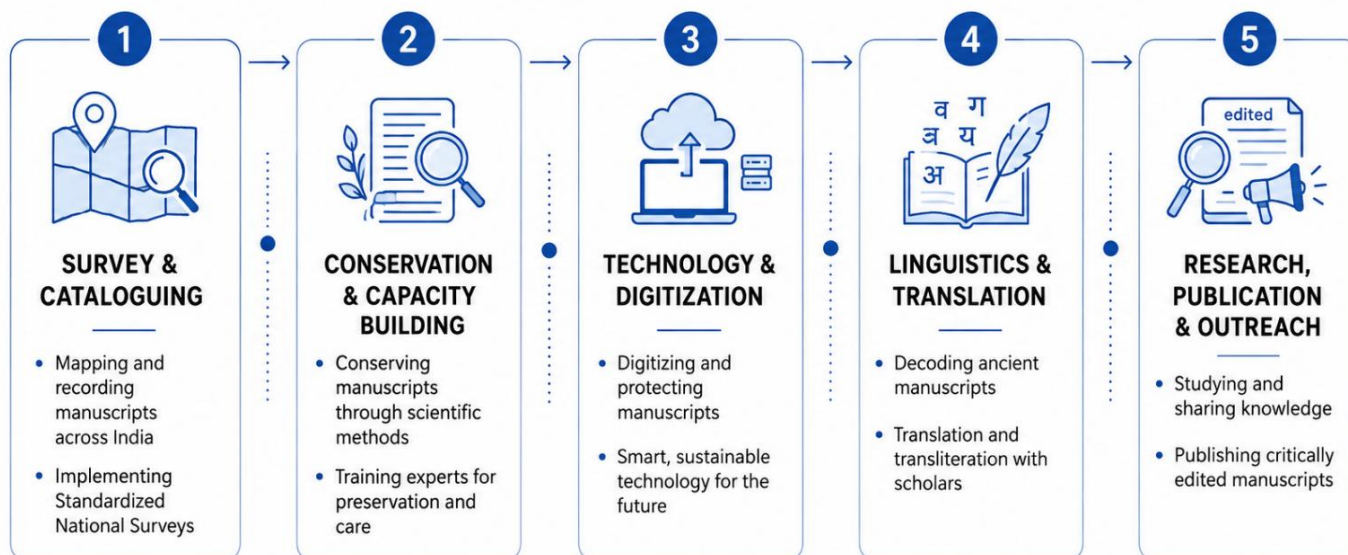
The **Gyan Bharatam National Survey of Manuscripts** under the **Gyan Bharatam Mission** has successfully mapped over 1 crore manuscripts from across the country.

About Gyan Bharatam Mission

- **Launch:** Announced in the **Union Budget 2025–26**.
- **Financial Outlay:** ₹491.66 Crore (2025–2031)
- **Nodal Ministry:** Ministry of Culture
- **Objectives:** To systematically survey, document, conserve, digitise, and facilitate access to India's manuscript heritage.
- **Key Components:**
 - Nationwide network of **Manuscript Resource Centres (MRCs)** for Identification and Documentation of ancient manuscripts.
 - Strengthened **Manuscript Conservation Centres (MCCs)** for conservation and Restoration of manuscripts.
 - Creation of **National Digital Repository and Digitisation** of manuscripts.
- **National Mission for Manuscripts (NMM)** has been **restructured as Gyan Bharatam Mission** as a **Central Sector Scheme**.
 - **NMM** was established in **2003** as a repository; **MRCs and MCCs** are established under the Mission.
 - **Key Achievements:** Over **44.07 lakh** manuscripts documented through its **digital repository, Kriti Sampada**; Developed **Manus Granthavali**, a software to ensure accurate and uniform documentation.

FIVE PILLARS OF GYAN BHARATAM

— TRANSFORMING MANUSCRIPT HERITAGE THROUGH KEY PILLARS —



What is a Manuscript?

- A manuscript is a **handwritten** composition on materials such as **palm leaf, birch bark (Bhurja patra or bhojaparta), cloth, paper, or metal**, dating back **at least 75 years** and carrying significant **historical, scientific, or aesthetic value**.
- India's manuscript wealth is estimated at **over five million works**.

Significance of Manuscripts

- Repositories of Indian Knowledge Systems (Bhāratīya Jñāna Paramparā)**
 - Embody knowledge** across philosophy, medicine, astronomy, literature, and arts
 - E.g. Rigveda (philosophy), Arthashastra (governance), Charaka Samhita (medicine), Tolkappiyam (linguistics)
 - Found in hundreds of languages** (Sanskrit, Prakrit, Tamil, Persian, Arabic etc.) and **scripts** (Devanagari, Grantha, Brahmi, Kharosthi, Sharada, Nastaliq, Modi etc.)
 - Serve as living resources** for **education, research, and cultural pride**; reflect **continuity of India's civilisational thought**.
 - E.g. major learning centers such as **Nalanda and Vikramshila Universities** housed thousands of manuscripts on Buddhist philosophy, advanced mathematical and astronomical theories.
 - Reflect **socio-political, economic, and cultural dynamics** of their eras.
 - E.g. South Indian temples preserved Vaishnavite, Shaivite, and Jain texts, often inscribed on copper plates and palm leaves.

CHALLENGES IN PRESERVING MANUSCRIPTS



- **Vehicle for Interregional & Global Exchange**
 - Transmitted via **Silk Road and maritime trade routes**.
 - E.g. **Chinese traveller Hiuen Tsang** (7th century) carried manuscripts back from India.
 - **Charaka Samhita and Sushruta Samhita** spread Ayurvedic knowledge.
 - Buddhist and other Indian philosophical manuscripts travelled across Asia through scholarly and monastic networks, contributing to major traditions of translation and intellectual exchange.
- **Soft Power: Promote cultural diplomacy and academic collaborations.**
 - E.g. the **Netherlands** return **11th-century Chola Copper Plates to India**.

Other Efforts in Manuscript Conservation and Digitization

- **Antiquities and Art Treasures Act, 1972:** Prohibits the export of any manuscripts over 75 years old by anyone other than the Central Government.
- **Abhilekh Patal by National Archives of India:** Online portal providing access to over 38 lakh digitized archival files and manuscripts.
- **Indira Gandhi National Centre for the Arts (IGNCA):** Hosts digital manuscript archives and undertakes conservation, cataloguing, and research.
- **Gyan Bharatam Conference:** First international platform to discuss, deliberate, and chart the way forward for preserving and digitising India's manuscript heritage.
- **Technology:** AI-driven innovations like Handwritten Text Recognition and script decipherment; **Gyan-Setu: National AI Innovation Challenge.**
- **UNESCO Memory of the World Programme:** Recognises documentary heritage of outstanding significance on its International Register. Few notable entries from India:
 - **Rigveda** manuscripts were inscribed in 2007.
 - **Tarikh-e-Khandan-e-Timuriyah** (16th-century illustrated manuscript, commissioned by Emperor Akbar, documenting the history of Timur and his Mughal descendants) inscribed in 2011.
 - **Gilgit Manuscripts**, India's oldest surviving manuscripts (birch bark, ~5th–6th century, Buddhist), inscribed in 2017.
 - Manuscript of the **Nāṭyaśāstra of Bharatamuni** and **Bhagvad Gita** inscribed in 2025.

Conclusion

Gyan Bharatam Mission upholds the national resolve of “**Virasat aur Vikas**”- progress that is firmly rooted in heritage. It is using **AI-driven cataloguing, digital repositories, script decipherment, and multilingual platforms**, to preserve and **protecting intellectual property** from unauthorized patenting abroad.

8.3. NEWS IN SHORTS

8.3.1. GI TAGS

Multiple products were granted GI tag recently.

About GI tagged product from Jharkhand

- **Bhagaiya Silk:** It represents a regional handloom tradition **linked with Godda district and nearby areas**.
 - It combines **silk, cotton, gheecha yarn, mulberry katan, zari and traditional weaving skill** to create sarees etc.
- **Kuchai Silk (Tussar silk):** It is produced by **tussar silkworms cultivated on the trees of Asan and Arjun**.
 - Part of an **ancient tradition of Jharkhand, providing livelihood in rural areas**.
- **Munda jewellery:** Celebrates **Munda tribal community's artistic traditions**, cultural heritage and creating livelihood opportunities.
- **Bamboo Craft:** Supports rural artisans in transforming bamboo into **utility and decorative products**.

Khurasani Imli (fruit of the **Baobab tree**) from **Mandu, Dhar district, Madhya Pradesh**, has also been granted a **Geographical Indication (GI) tag**.

- The fruit is rich in **Vitamin C and antioxidants** and is used in traditional medicine for digestive ailments.
- Popularly known as **Upside-down Tree**.
- **Native to Africa**.
- Characterized by a **massive water-storing trunk** and leafless branches resembling roots, **highly drought-resistant**.
- Baobabs are a **keystone species**.
 - A **keystone species** is an organism that has a disproportionately large impact on its ecosystem relative to its population size or biomass.
- Found in **Madhya Pradesh, Gujarat, Maharashtra, Karnataka etc.**

8.3.2. XUANZANG (HIUEN TSANG)

India and China are in talks over joint **UNESCO nominations** for Xuanzang's travelogue, '**The Great Tang Records on the Western Regions**'.

About Hiuen Tsang (629–645 CE)

- He is a renowned **Chinese Buddhist monk, scholar, traveller and translator of the Tang period**.
- He is **best known for his 16-year pilgrimage to India**. In India, he
 - Visited the **court of Harshavardhana**.
 - Participated in **religious debates at Kannauj**.
 - Studied at **Nalanda Mahavihara university** under the guidance of the venerable monk **Shilabhadra**.
- **Information provided by him:**
 - Harsha's empire (**harsh punishment to criminals**), incident of **robbery** on highway.
 - Trade routes and **duties at barriers**,
 - **Social and religious systems**, detailed account of **Nalanda University**, etc.

8.3.3. UDANT MARTAND

Hindi Journalism Day is celebrated on **30 May** to mark the first publication of '**Udant Martand**', the world's **first Hindi newspaper**.

- Udant Martand, meaning '**the rising Sun**', was published under the editorship of **Pandit Jugal Kishore Shukla (lawyer from Kanpur) in Calcutta (1826)**.
- On February 16, 1826, **Shukla, along with Munnu Thakur of Banstala Gali, Calcutta**, obtained government permission to start a Hindi newspaper.

Significance of Udant Martand

- Marked the beginning of **Hindi journalism in India**.
- Promoted Hindi as a **language of public communication**.
- Became a **symbol of cultural identity** and national awakening under British rule.

8.3.4. SANGEET NATAK AKADEMI

Sangeet Natak Akademi Fellowship (Akademi Ratna), Sangeet Natak Akademi Awards (Akademi Puraskar) and Ustad Bismillah Khan Yuva Puraskar for the years 2024 and 2025 announced.

About Sangeet Natak Akademi

- **Established: 1953**
- **Nature:** India's apex national institution for the preservation and promotion of **music, dance and drama**
- **Ministry:** Autonomous body under **Ministry of Culture**
- **Legal Status:** Registered as a Society under Societies Registration Act, 1860.
- **Chairman:** Appointed by the **President** of India for a term of five years.
- **Objective:** Preservation, promotion and dissemination of India's **intangible cultural heritage** in the **performing arts**.

8.3.5. GALLANTRY AWARDS

President of India presented Gallantry Awards to Armed Forces and Police Personnel.

About Gallantry Awards

- **Objective:** Recognitions given for acts of bravery, valour and self-sacrifice during **both wartime and peacetime**.
- **Conferred By:** The President of India, who is the Supreme Commander of the Armed Forces.
 - Officially **announced twice a year** on the eve of **Republic Day** (January 26) and **Independence Day** (August 15).
- **Nodal Ministry:** The **Ministry of Defence** invites recommendations **twice a year** from the Armed Forces and the Ministry of Home Affairs.
- **Wartime Gallantry Awards:** Param Vir Chakra (Highest), Maha Vir Chakra and Vir Chakra.
 - **Instituted on 26 January 1950** (with effect from 15 August 1947).
- **Peacetime Gallantry Awards:** Ashoka Chakra (Highest), Kirti Chakra and Shaurya Chakra.
 - Originally, they were named **Ashoka Chakra Class I, Class II, and Class III** but were renamed in 1967.
 - Instituted on **4 January 1952** (with effect from 15 August 1947).



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9. SCHEMES IN NEWS

9.1. AB-PMJAY

Why in the News?

Ayushman Bharat PM Jan Arogya Yojana (AB-PMJAY) achieves nationwide coverage with West Bengal joining the scheme.

Core Objectives	Salient Features
• Provide financial protection against catastrophic health expenditure. • Ensure cashless, quality secondary and tertiary healthcare to vulnerable families. • Advance Universal Health Coverage (UHC) under Ayushman Bharat. • Reduce Out-of-Pocket Expenditure (OOPE) on healthcare.	• Ministry: Ministry of Health & Family Welfare. • Launch: September 2018 in line with the National Health Policy (2017) • Scheme Type: Centrally Sponsored Scheme under Ayushman Bharat. ○ AB-PMJAY is one of the four pillars of the Ayushman Bharat programme aimed at providing equitable and comprehensive healthcare. ○ Other Pillars: ▪ Ayushman Arogya Mandirs (AAM): Comprehensive primary healthcare closer to communities. ▪ Ayushman Bharat Digital Mission (ABDM): Integrated digital health ecosystem through ABHA and interoperable health records. ▪ PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM): Strengthening healthcare infrastructure and public health preparedness. • Implementing Agency: National Health Authority (NHA) in partnership with States/UTs. ○ Technology-driven implementation: End-to-end digital implementation through the Ayushman Card and the NHA digital platform. • Coverage: Covers 12 crore economically vulnerable families (≈55 crore beneficiaries), constituting the bottom 40% of India's population. • Beneficiaries: ○ Economically Vulnerable Families: Identified through the Socio-Economic and Caste Census (SECC), 2011, based on rural deprivation and specified urban occupational criteria. ○ Includes families previously covered under the Rashtriya Swasthya Bima Yojana (RSBY). ○ Frontline Health Workers: Covers Accredited Social Health Activists (ASHAs), Anganwadi Workers (AWWs), and Anganwadi Helpers (AWHs) along with their families. ○ Senior Citizens (70+): Universal coverage through the Ayushman Vay Vandana Card, irrespective of socio-economic status. • Key Benefits: Financial Health Insurance Cover ○ Annual Hospitalization Coverage: Cashless health cover up to Rs 5 lakh per family per year.

	○ Comprehensive Treatment Costs: Covers consultation, medicines, diagnostics, surgery, ICU, implants, accommodation, and food. ○ Pre & Post Hospitalization Support: Covers 3 days of pre-hospitalization and 15 days of post-hospitalization expenses. ○ Complication Coverage: Covers complications arising during treatment. ○ Coverage Features ▪ Pre-Existing Disease Coverage: Covers all pre-existing diseases from Day One. ▪ No Family Size Limit: No restriction on age, gender, or family size. ▪ Nationwide Portability: Treatment available at empaneled hospitals across India. ▪ Wide Procedure Coverage: Covers 1,961 treatment packages across 27 medical specialties. ● Achievements (As of February 2026) ○ 43.52 crore Ayushman Cards issued, including 1.14 crore Ayushman Vay Vandana Cards for senior citizens (70+ years). ○ 36,229 empanelled hospitals across India (19,483 public and 16,746 private). ○ 11.69 crore hospital admissions authorized under the scheme. ○ Rs 1.73 lakh crore worth of cashless treatments provided.
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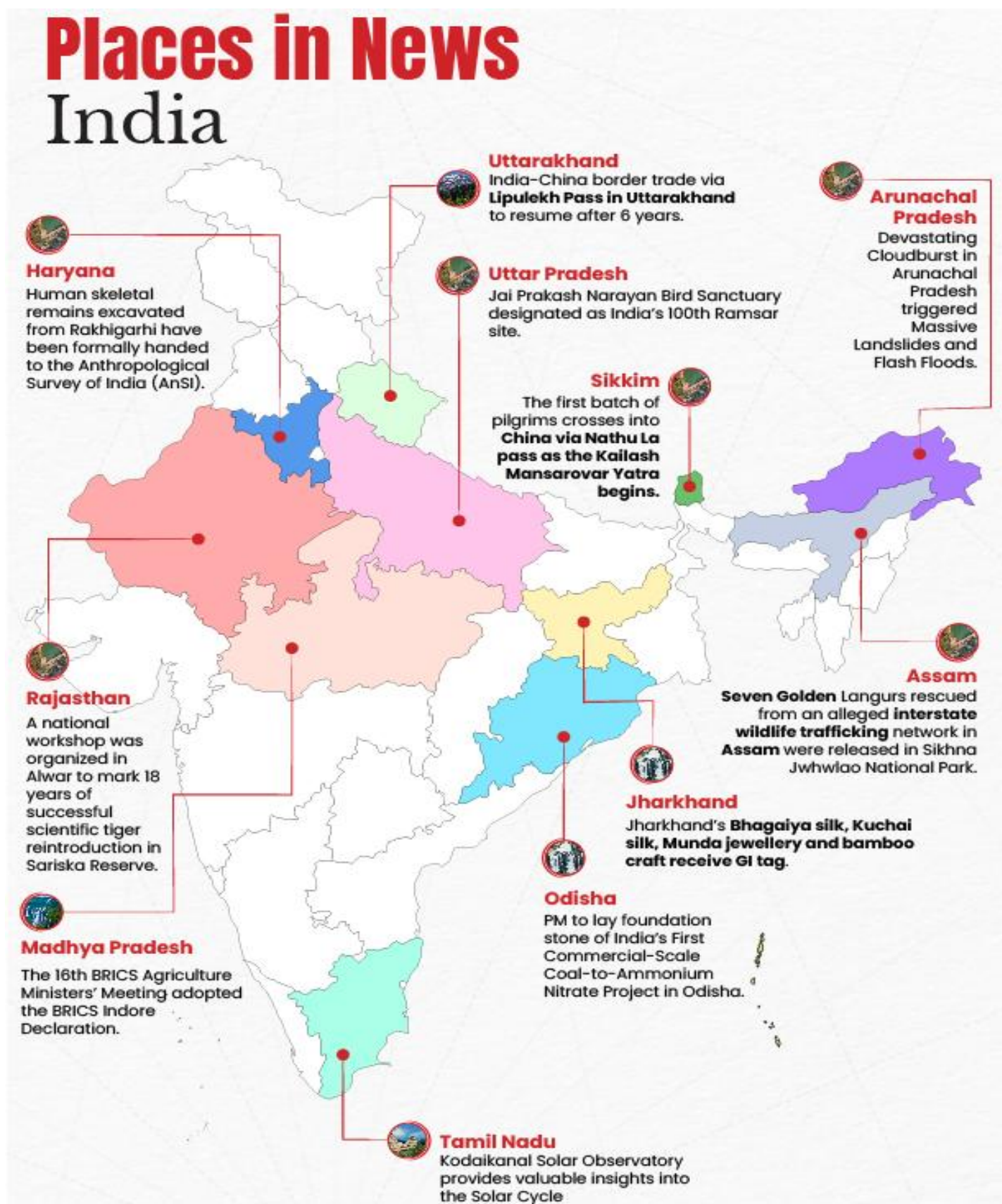
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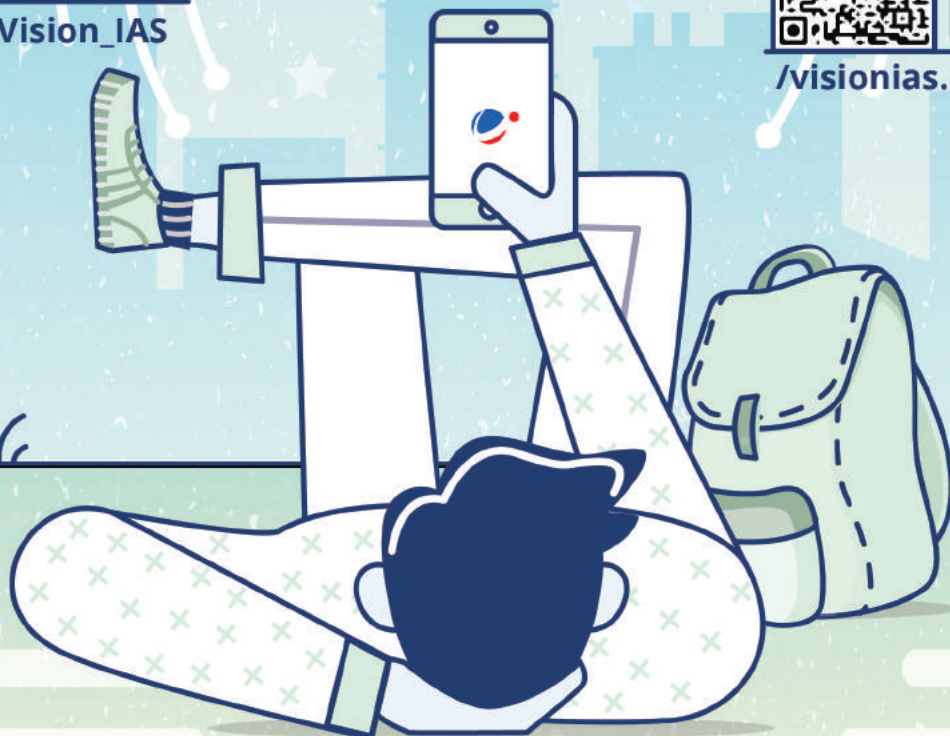


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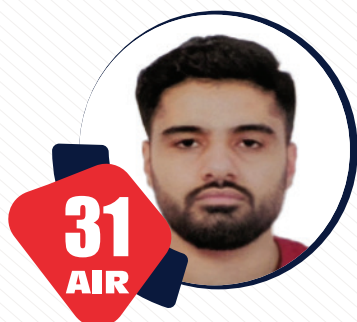
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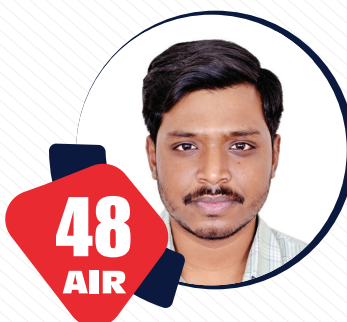
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