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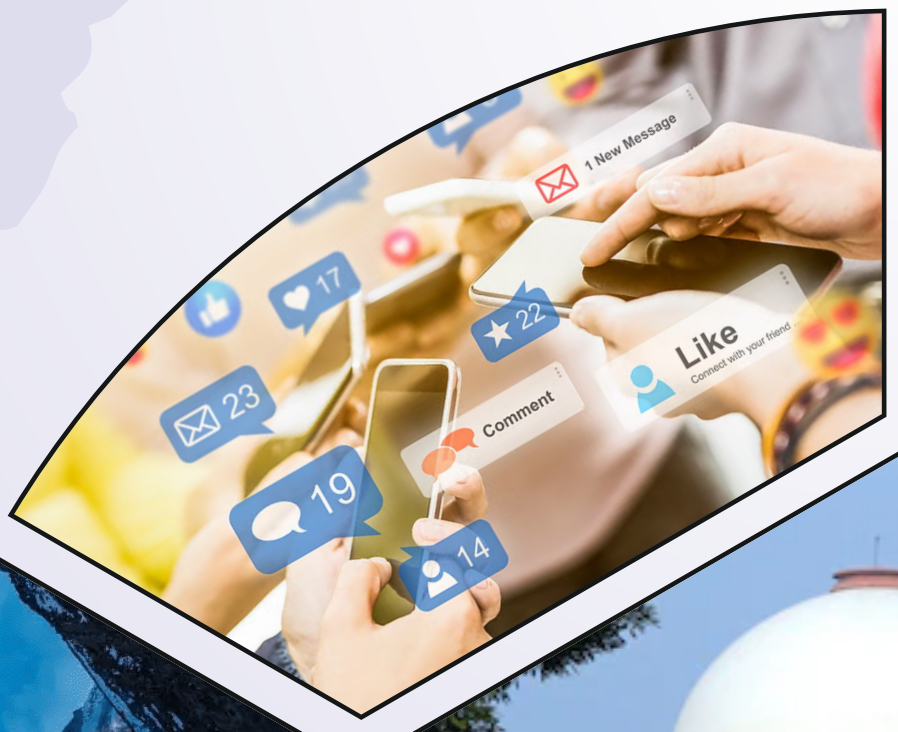

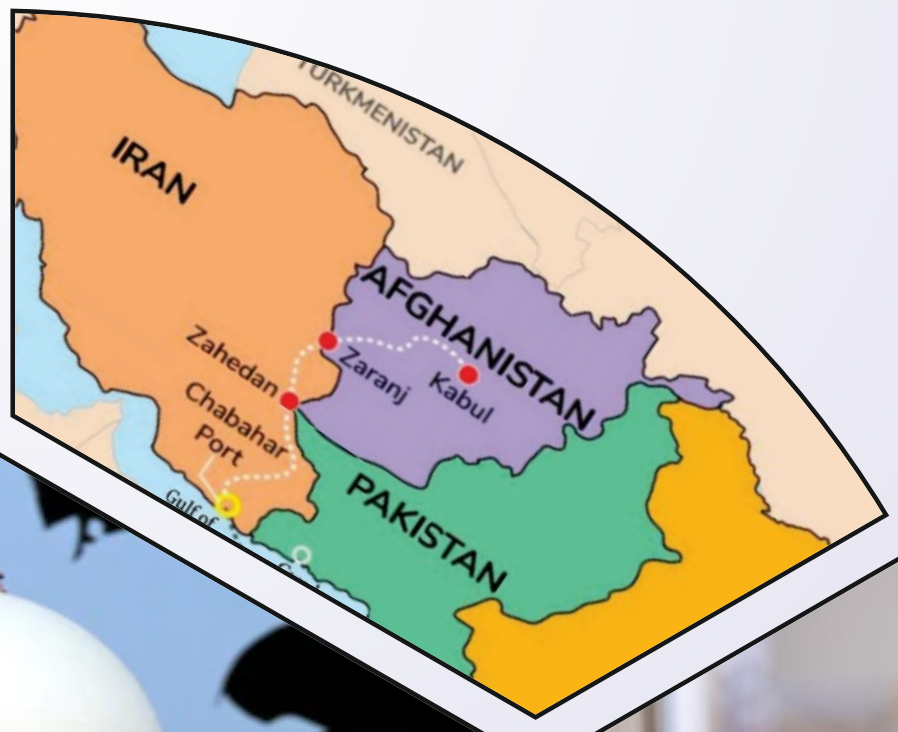

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POLITY

Justice BR Gavai to Become 52nd Chief Justice of India

📌 **Syllabus Mapping:**
✅ **GS Paper 2** – *Polity and Constitution: Structure, Organization, and Functioning of the Judiciary; Constitutional and Statutory Bodies*

1. Constitutional Provisions Related to the CJI

- **Article 124(1):** Provides for the **Supreme Court of India**, comprising the **Chief Justice of India (CJI)** and **not more than 33 other judges**.
- **Article 124(2):**
  - **CJI is appointed by the President** of India.
  - Appointment must be made **after consultation** with such judges of the Supreme Court and High Courts as deemed necessary.

2. Appointment Procedure of the CJI

- **Conventions Followed:**
  - Appointment is made from the **senior-most judge** of the Supreme Court.
  - Outgoing CJI recommends the name of the successor.
- **Memorandum of Procedure (MoP):**
  - **Union Law Minister** seeks recommendation from the outgoing CJI.
  - Forwarded to the **Prime Minister**, who advises the **President** to make the appointment.
- **Oath:** The CJI **takes oath of office from the President of India**.
- **Tenure: Till 65 years** of age (Article 124).
- **First CJI of India: Justice Harilal J. Kania** (1950).

3. Transparency and Accountability

- **RTI Act, 2005:** The **Office of the CJI** falls within the ambit of the **Right to Information Act**, ensuring greater **judicial transparency**.

Key Roles and Responsibilities of the CJI

Category	Functions
Administrative	**• Appoints officers and servants of the Supreme Court under Article 146. • Oversees functioning and day-to-day administration of the SC.**
Statutory	**• Acts as Chairperson of various Search-cum-Selection Committees (e.g., for National Company Law Appellate Tribunal, Lokpal search panel).**
Judicial – Master of Roster	**• Exercises exclusive power to allocate cases to benches of the SC. • Power derived from Handbook of Practice and Procedure (2017).**
Others	**• Administers oath to the President. • Appoints ad hoc judges (Article 127). • Requests retired judges to sit in SC (Article 128). • Decides on the seat of the SC (Article 130).**
Category	**Functions**
Administrative	

Conclusion

Justice **BR Gavai's elevation** as the **52nd Chief Justice of India** is in line with **constitutional norms and established conventions** of judicial seniority. As CJI, he will not only lead the apex court but also shape its **judicial and administrative direction**. His role will be crucial in **preserving judicial integrity**, ensuring **efficient case management**, and **upholding the Constitution**.

Presidential Reference Seeks Clarity on SC-Set Timelines for Assent to Bills

📌 **Syllabus Mapping:**
✅ **GS Paper 2** – *Polity & Constitution: Separation of Powers, Role of Executive & Judiciary, Federalism*

1. Why in News?

President **Droupadi Murmu** has invoked **Article 143** to make a **Presidential Reference** to the **Supreme Court**, questioning whether it can set **time limits for constitutional authorities**—namely, the **President (Article 201)** and **Governors (Article 200)**—to assent to or withhold bills passed by legislatures.

This follows the **SC's 2023 judgment** in *State of Tamil Nadu vs Governor of Tamil Nadu*, where it prescribed a **three-month deadline** for assent.

2. Background: The Controversy

- In its judgment, the **Supreme Court laid down a timeline** for the President and Governors to decide on pending bills to **prevent indefinite delays**.
- The **President's Reference** seeks clarity on **separation of powers**, **federalism**, and the **scope of judicial review**under **Article 142**.

3. Articles Involved in the Presidential Reference

Article	Description
Article 143	President can seek the **advisory opinion of the Supreme Court** on any matter of public or constitutional importance. The SC's opinion is **not binding**.
Article 200	Governor can: (a) give assent, (b) withhold assent, (c) reserve the bill for the President, or (d) return the bill (except money bills) for reconsideration.
Article 201	When a bill is reserved for the President, they may: (a) give assent, (b) withhold assent, or (c) return the bill (not money bills) for reconsideration.
Article 361	Grants **immunity** to the President and Governors from being **answerable to courts** for the exercise of their powers and duties.
Article 142	Allows the Supreme Court to pass **any order necessary for "complete justice"** in any case. Used in the Tamil Nadu case to set timelines.
Article 145(3)	Requires a **Constitution Bench** (minimum 5 Judges) for cases involving **interpretation of the Constitution**or Article 143 references.
Article 131	Grants **original jurisdiction** to the Supreme Court in disputes between the **Union and States** or among States. Not directly invoked here but relevant in federal disputes.

4. Key Legal and Constitutional Questions Raised

- Can the **Supreme Court mandate a timeline** under **Articles 200 and 201**, when no such timeline is expressly mentioned?
- Does **Article 142 empower the SC** to fill legislative gaps?
- Are the **President and Governors bound** by the **Council of Ministers' advice** in giving assent?
- Can **judicial directions override constitutional silence** on timelines?
- Does **judicial scrutiny violate Article 361 immunity**?

5. Implications of the Reference

- **Federalism Debate:** The Reference reopens the debate on the **balance of power** between the **judiciary and the executive**.
- **Judicial Activism vs. Separation of Powers:** The SC's intervention to ensure legislative functioning raises questions on **judicial overreach**.
- **Legislative Efficiency:** The lack of timelines has been **misused for political delays** in multiple states (e.g., Tamil Nadu, Kerala, Punjab), affecting **legislative sovereignty**.
- **Governors' Discretion:** The issue highlights the ambiguity over the **Governor's discretion**, especially in opposition-ruled states.

6. Way Forward

- The SC's opinion under **Article 143** may provide **clarity and uniformity** in interpreting **assent powers**.
- Parliament may consider **amending Articles 200 and 201** to provide **explicit timelines** to avoid such disputes.
- The case underlines the need for a **clear framework to prevent constitutional abuse** while respecting federal principles.

Conclusion

The **Presidential Reference under Article 143** marks a **constitutional moment** for the judiciary to interpret the **extent of its powers under Article 142** and clarify the **role of constitutional authorities** in the legislative process. The outcome will have significant implications for **India's federal structure**, **separation of powers**, and the **efficacy of democratic governance**.

GOVERNANCE

Predatory Pricing in India: New CCI Regulations for Fair Digital Market Practices

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Statutory Bodies, Government Policies & Interventions**
✅ **Prelims Focus – Competition Act, 2002, CCI, Anti-Competitive Practices**

1. Why in News?

- The **Competition Commission of India (CCI)** has notified the **Determination of Cost of Production Regulations, 2025**, to curb **predatory pricing**, particularly among **e-commerce and quick-commerce platforms**.
- This marks a **major regulatory reform** targeting anti-competitive behaviour in India's **rapidly evolving digital economy**.

2. What is Predatory Pricing?

🔹 **Definition (As per Competition Act, 2002):**
• A pricing strategy where a firm **deliberately lowers prices below the cost of production** with the intent to:

- **Eliminate competition**
- **Create a monopoly**
- **Raise prices** later to recoup losses and exploit market dominance

🔹 **Impact on Market:**

Phase	Effect
Short-Term	Attracts consumers with cheap prices; hurts small competitors
Long-Term	Reduces market competition; enables **price manipulation** by dominant player

3. Key Highlights of the 2025 CCI Regulations

Provision	Explanation
Replaces 2009 Rules	Updated cost assessment framework, better suited for digital and dynamic sectors
Redefines Total Cost	Includes **depreciation** but excludes **financing overheads** like daily operational expenses
Removes Market Value Benchmark	Avoids misleading price signals from market fluctuations
Sector-Agnostic Approach	Case-by-case analysis across industries, not limited to traditional sectors
Focus on E-Commerce	Aims to address **deep discounting tactics** by dominant digital platforms

4. CCI: Statutory Mandate and Role

🔹 **About the Competition Commission of India (CCI):**
• A **statutory body** under the **Competition Act, 2002**
• Objective: **Ensure fair market practices**, **prevent anti-competitive conduct**, and **protect consumer interests**

🔹 **Core Functions of CCI:**
• Investigate monopolistic practices
• Regulate mergers and acquisitions
• Promote market competition and consumer choice
• Enforce penalties for cartelisation, price-fixing, and abuse of dominance

5. Key Anti-Competitive Practices Under Watch

Term	Description
Cartels	Secret agreements between independent firms to control price/supply (e.g., OPEC-type collusion)
Mergers	Combining firms to form one entity, which may reduce competition and attract CCI scrutiny
Price Discrimination	Selling the same product/service at different prices to different buyers
Price Fixing	Competitors agreeing to maintain prices at a certain level, harming consumer welfare

6. Significance of the Move

🔹 **For Digital Markets**
• Helps regulate **quick-commerce giants** (e.g., Blinkit, Zepto, Swiggy Instamart) using **discount-led strategies**
• Ensures a **level playing field** for MSMEs and offline retailers in the digital economy

🔹 **For Consumers**
- Prevents **artificial price inflation** post-competition wipeout
- Promotes **long-term pricing stability** and genuine value

🔹 **For Regulators and Policymakers**
- Introduces a **dynamic framework** aligned with **contemporary market realities**
- Enhances **regulatory agility** to address evolving digital commerce trends

7. Conclusion: Guarding Against Market Monopolies

India's updated predatory pricing regulations represent a **proactive shift** to ensure fairness in a **digitally driven economy**. By redefining cost metrics and adopting a **sector-neutral, case-by-case approach**, the CCI aims to protect consumers and small businesses from the adverse effects of **market domination by pricing power**.

This framework will be crucial in balancing **innovation with integrity** in India's fast-growing **e-commerce and retail ecosystems**.

SVAMITVA and Gram Manchitra at World Bank Land Conference 2025

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Government Policies and Interventions | E-Governance in India**
✅ **GS Paper 3 – Infrastructure: Land Reforms and Technological Applications**

1. Why in News?

- At the **World Bank Land Conference 2025**, India showcased two of its flagship land governance initiatives—**SVAMITVA Scheme** and the **Gram Manchitra platform**—during the plenary session on **"Good Practices and Challenges in Land Tenure and Governance Reform"**.
- These initiatives reflect **India's commitment to digitizing land records**, **empowering rural communities**, and using **technology-driven governance**.

2. What is the SVAMITVA Scheme?

Feature	Details
Full Form	*Survey of Villages and Mapping with Improvised Technology in Village Areas*
Launched By	**Ministry of Panchayati Raj**, in **2020**
Type	**Central Sector Scheme**
Objective	Provide **legal ownership of residential properties** in rural India through **drone and GIS-based surveys**
Focus Area	**Abadi areas** – inhabited parts of villages

🔹 **Achievements (as of April 2025)**

- **24.4 million property cards** issued
- Coverage across **1.6 lakh villages**
- **Land value unlocked**: USD **1.162 trillion**

🔹 **Key Benefits**

- Empowers rural households with **legal property titles**
- Facilitates **access to bank credit, property transactions**, and **local development planning**
- Reduces land disputes and enhances **revenue generation** for Panchayats

3. Gram Manchitra Platform: GIS for Grassroots Planning

Feature	Description
About	A **GIS-based spatial planning tool** integrated with the eGramSwaraj platform
Objective	Supports **Panchayats in decentralized planning** using **visualized spatial data**
Functions	Combines **geospatial datasets** with developmental schemes like **MGNREGS**, **PMAY-G**, etc.

- Enables data-driven planning for **infrastructure**, **water bodies**, and **livelihood assets**

🔹 **Impact**

- Strengthens **village-level governance**
- Enhances **transparency and accountability**
- Facilitates **convergent planning** and **resource optimization**

4. World Bank Land Conference 2025: A Global Dialogue on Land Governance

Feature	Description
Organiser	**World Bank**
Nature	**Biennial global forum** on **land tenure, cadastral reforms**, and **property rights**
Focus Areas	• Addressing **technical land administration challenges** • Promoting **inclusive land tenure reforms** • Showcasing **best practices and case studies** from member countries

🔷 **India's Role in 2025 Edition**

- Presented SVAMITVA and Gram Manchitra as **good practices in land rights reform**
- Highlighted the role of **drone technology, e-Governance, and GIS tools** in transforming rural land administration
- Positioned India as a **global leader** in **scalable, tech-led rural governance**

5. Conclusion: Land Governance as a Pillar of Rural Empowerment

India's **SVAMITVA Scheme** and **Gram Manchitra platform** represent pioneering efforts to **democratize land ownership** and **strengthen rural governance** through **technological innovation**.
Their successful implementation and global recognition at the **World Bank Land Conference 2025** reinforce the importance of **secure land tenure**, **data-driven planning**, and **digital inclusion** in achieving **inclusive and sustainable development**.

Bridging the Gaps in India's MSME Sector

📌 **Syllabus Mapping:**
✅ ***GS Paper 2*** **– Government Policies & Interventions**
✅ ***GS Paper 3*** **– Mobilization of Resources, Growth & Development, Inclusive Growth**

1. Why in News?

A recent **SIDBI report** titled *"Understanding the Indian MSME Sector: Progress and Challenges"* has highlighted persistent challenges facing the **MSME (Micro, Small and Medium Enterprises)** sector, particularly regarding **access to credit, skilled manpower, and informal borrowing**.

2. Current Significance of the MSME Sector

- **Contribution to GVA**: 30.1% of India's Gross Value Added (2022–23), up from 27.3% in 2020–21.
- **Exports**: MSME exports increased from **₹3.95 lakh crore (2020–21)** to **₹12.39 lakh crore (2024–25)**.
- **Export Share**: MSMEs now account for **45.79%** of India's total exports.
- **Employment**: Over **11 crore people** employed across ~6.3 crore MSMEs.

3. Key Findings of the SIDBI Report

Challenge	Details
Credit Gap	₹30 lakh crore (~24% overall); **27% in services**; **35% for women-owned MSMEs**
Informal Borrowing	12% of micro, 3% of small, and 2% overall still rely on **non-institutional lenders**
Skilled Manpower Shortage	**25% of MSMEs** report shortage, especially in **defence, garments, hotels, sanitaryware**
Underrepresentation of Women	Credit access and support for **women entrepreneurs** remains severely inadequate
Digitization Lag	Limited adoption of digital tools and platforms for operations, marketing, and credit access

4. Structural Issues in the MSME Sector

- **Financial Exclusion**:
  - Inadequate formal credit.
  - Collateral demands and complex paperwork discourage small businesses.
- **Policy Awareness Deficit**:
  - Lack of awareness about schemes like **MUDRA**, **CGTMSE**, or **Emergency Credit Line Guarantee Scheme (ECLGS)**.
- **Delayed Payments**:
  - Government and large firms delay payments to MSMEs, straining their working capital.
- **Low Technological Adoption**:
  - Limited investment in R&D and process modernization.
- **Regulatory Burden**:
  - Despite Udyam registration, MSMEs struggle with compliance, especially under GST and labour laws.

5. Role of SIDBI

About SIDBI	Details
Established	1990, under the SIDBI Act, 1989
Headquarters	Lucknow, Uttar Pradesh
Mandate	Promotion, financing, and development of **MSME sector** in India
Functions	Provides refinance to banks/NBFCs, manages government schemes, supports startups

6. Way Forward: Measures to Bridge the Gaps

✅ **1. Expanding Credit Access**

- Scale up **PSBLoansIn59Minutes**, **TReDS**, and **Open Credit Enablement Network (OCEN)**.
- Promote **cash flow-based lending** over collateral-based models.
- Encourage fintech-NBFC partnerships to penetrate rural MSME credit.

✅ **2. Targeted Support for Women Entrepreneurs**

- Earmark **special credit lines for women-owned MSMEs** under MUDRA and Stand-Up India.
- Build local mentorship networks via SHGs and Women Business Centers.

✅ **3. Skilling and Capacity Building**

- Partner with **Skill India**, **KVIC**, and **Tool Rooms** to address sector-specific skill shortages.
- Incentivize MSME upskilling under **Digital India** and **Make in India**.

✅ **4. Timely Payment Enforcement**

- Strengthen **Samadhan Portal** for resolving delayed payment disputes.
- Mandate auto-payment clauses in government tenders for MSMEs.

✅ **5. Promote Formalization and Digitization**

- Encourage Udyam registration, GST filing, and GeM onboarding.
- Use **AI/ML for credit profiling** of MSMEs with alternate data.

✅ **6. Region and Sector-Specific Policies**

- Customize credit/tech support for underserved regions (e.g., Northeast, tribal belts).
- Boost clusters in textiles, electronics, agro-processing, defence, and handicrafts.

⬅ END Conclusion

The **MSME sector is a key pillar** of India's growth engine and employment generator. Bridging gaps in **credit access**, **skilling**, and **policy implementation** is crucial to achieving **inclusive economic development** and **resilience** in the face of global uncertainties. Strategic public-private partnerships and **technology-led inclusion** can unlock the full potential of this vital sector.

Revamped PLFS: Towards Better Rural-Urban Labour Market Insights

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Government Policies & Interventions, Human Resource Development**
✅ **GS Paper 3 – Employment, Growth & Development, Skill Development**

1. Why in News?

The **Ministry of Statistics and Programme Implementation (MoSPI)** has **revamped the Periodic Labour Force Survey (PLFS)** by extending **monthly estimates to rural areas** for the first time, aiming to offer more granular and timely insights into **India's labour market dynamics**.

2. What is the Periodic Labour Force Survey (PLFS)?

Aspect	Details
Launched	In **2017** by the **National Statistical Office (NSO)**
Objective	To provide estimates of key labour market indicators such as **Labour Force Participation Rate (LFPR)**, **Worker Population Ratio (WPR)**, and **Unemployment Rate (UR)**
Frameworks Used	• **Usual Status (ps+ss)**: Based on **one-year** reference period • **Current Weekly Status (CWS)**: Based on **seven-day** reference period

3. What's New in the Revamped PLFS?

Previous Framework	Revamped Framework
Quarterly estimates for urban areas only	**Extended to rural areas** for monthly estimates
Annual data based on Usual Status & CWS	Quarterly estimates for **major states** and both **rural and urban areas**
Focused mainly on macro trends	Allows **region-specific and high-frequency labour data** for policymaking

✅ Monthly estimates of **LFPR, WPR, UR** now available **for both rural and urban India**, improving **timeliness and policy relevance**.

4. Key Labour Market Indicators Explained

- **Labour Force Participation Rate (LFPR):** % of working-age population either working or seeking work
- **Worker Population Ratio (WPR):** % of employed persons in the total population
- **Unemployment Rate (UR):** % of unemployed persons in the labour force

5. Significance of the Revamp

- **Rural Labour Market Visibility:** Captures **seasonal rural employment** trends in agriculture and informal sectors (e.g., MNREGA work).
- **Real-Time Insights:** Monthly data supports **timely intervention**, especially during **economic shocks** like pandemics or inflation cycles.
- **Enhanced Planning for Skill Development:** Identifies emerging **employment gaps and opportunities** across regions and sectors.
- **Supports Gender and Youth Employment Policy:** Can guide targeted schemes for **female workforce participation** and **youth skilling**.
- **Boosts Evidence-Based Governance:** Facilitates better **labour policy formulation** at **state and central levels**.

6. Challenges in Implementation

- **Data Quality & Frequency:** High frequency data collection risks **sampling errors** and **enumerator fatigue**.
- **Informal Sector Volatility:** Tracking informal and gig economy trends in real-time remains complex.
- **Digital Infrastructure Gaps:** Data collection in **remote rural areas** may face logistical and technical issues.
- **Comparability:** Changes in frequency and scope may pose difficulties in **comparing long-term trends**.

7. Way Forward

- **Invest in Enumerator Training:** Ensure **data reliability** through robust training and capacity-building.
- **Leverage Technology:** Use **AI, geotagging, mobile apps** to streamline real-time data collection.
- **Integrate with Other Databases:** Sync PLFS data with **e-Shram**, **EPFO**, and **Skill India Mission** for holistic workforce analytics.
- **Disseminate Data Widely:** Make disaggregated data **accessible to researchers, policymakers, and think tanks**.

Conclusion

The **revamp of PLFS** marks a **critical reform in India's labour market statistics**, bridging long-standing rural-urban data gaps. By offering **monthly and quarterly employment insights** across regions, the initiative empowers **evidence-based decision-making** and enhances the state's ability to design **inclusive and adaptive employment policies**, in line with India's **demographic dividend** and **growth aspirations**.

E-Passports: India's Leap Towards Secure Digital Travel Documentation

📌 **Syllabus Mapping:**
✅ **GS Paper 2** – Government Policies & Interventions
✅ **GS Paper 3** – Science & Technology (Nanotechnology, Cybersecurity), E-Governance

1. Why in News?

The **Ministry of External Affairs (MEA)** has initiated the **issuance of e-passports** in select cities such as Chennai, Delhi, and Hyderabad under the **Passport Seva Programme (PSP) 2.0**, marking a significant step toward **modernizing travel documents** and **enhancing passport security**.

2. What is an e-Passport?

Parameter	Details
Definition	A **biometric passport** containing an embedded **Radio Frequency Identification (RFID) chip** and **antenna**, storing **personal and biometric data** of the holder.
Identification	Visually marked with a **golden chip symbol** on the cover below the national emblem.
Components	• RFID chip with **biometric details (fingerprints, iris scan)** • Personal data: name, date of birth, passport number • **Digital signature** using **Public Key Infrastructure (PKI)** to prevent tampering

3. Key Features and Advantages of e-Passports

- **Faster Immigration Checks**:
  - Facilitates **automated e-gates** at airports and **reduces verification time**
  - Boosts efficiency in **international travel and border control**
- **Enhanced Security**:
  - **PKI (Public Key Infrastructure)** ensures **authentication, integrity, and confidentiality** of stored data
  - Difficult to forge or clone compared to traditional passports
- **Tamper-Proof**:
  - Any tampering with the chip data **invalidates the digital signature**, offering strong fraud protection
- **Interoperable Standards**:
  - Aligned with **International Civil Aviation Organization (ICAO)** norms, ensuring global recognition and usage

4. Passport Seva Programme (PSP) 2.0

Aspect	Description
Launched	PSP 2.0 operational from **2024**, successor to PSP (2010)
Objective	Digital transformation of passport services with focus on **transparency**, **efficiency**, and **integration**
Scope	Includes **e-passports**, mobile platforms, chatbots, automated kiosks, and real-time tracking

As of March 2025, **over 20,700 e-passports** have been issued in **Chennai** alone.

5. Comparison: Traditional vs E-Passport

Feature	Traditional Passport	E-Passport
Security	Vulnerable to forgery	Encrypted with PKI, highly secure
Data Storage	Printed and visual	Digital + biometric on RFID chip
Verification Speed	Manual	Automated and faster
Global Acceptance	Limited tech compatibility	ICAO-compliant, globally accepted

6. Associated Technologies and Significance

- **RFID (Radio Frequency Identification):**
  Enables **wireless transmission of data** to a reader without physical contact.
- **PKI (Public Key Infrastructure):**
  Ensures **data integrity** and **confirms the document's legitimacy** using cryptographic keys.
- **Nanotechnology Usage:**
  Chip embedding and **secure material layering** involve **nano-engineered surfaces** for durability and tamper resistance.

7. Way Forward and Challenges

Opportunities	Challenges
Strengthens India's digital identity ecosystem	Cost of production and distribution
Improves international credibility and tourism facilitation	Infrastructure needed at **all international airports**
Enables seamless, tech-driven governance	Ensuring **cybersecurity** and protection against data breaches

Conclusion

India's rollout of **e-passports under PSP 2.0** represents a **significant leap in e-governance**, travel modernization, and **citizen-centric innovation**. With robust data protection mechanisms and biometric verification, e-passports are set to transform the way Indians travel globally, while also contributing to the country's **Digital India** and **smart governance goals**.

INTERNATIONAL RELATIONS

India-West Asia Relations: Forging a Strategic Bridge Across Continents

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – International Relations: West Asia, India's Bilateral & Multilateral Engagements**
✅ **GS Paper 2 – Effect of Foreign Policies on India's Interests**
✅ **GS Paper 2 – International Treaties and Regional Groupings**

1. Why in News?

- Under its **'Link West' policy**, India is intensifying engagement with West Asia to ensure **energy security**, expand **economic corridors**, and strengthen its **geopolitical footprint**.
- Recent strategic dialogues with **UAE, Saudi Arabia, Iran**, and **Israel** mark a recalibrated foreign policy approach towards the region.

2. Understanding West Asia: Geography and Geopolitical Importance

🔷 **Geographical Identity**
• Located west of South and Central Asia and north of Africa, bordered by:

- **Mediterranean Sea, Persian Gulf, Red Sea, Caspian Sea, and Gulf of Oman**
  • Comprises **18 nations**, including:
- **Arabian Peninsula**: Saudi Arabia, UAE, Oman
- **Fertile Crescent**: Iraq, Syria, Jordan
- **Anatolia and the Caucasus**: Turkey, Armenia, Azerbaijan
  • Home to **283 million people**, with **Saudi Arabia** as the largest economy and **Bahrain** the smallest by population.

🔷 **Geopolitical Significance**
• Holds **over 50% of global oil reserves** and **40% of natural gas**, with strategic maritime chokepoints like the **Strait of Hormuz** and **Bab el-Mandeb** vital for global energy trade.

3. India's 'Look West' Policy: Strategic Pillars

- Launched in **2005**, the policy aims to:
  • Deepen **economic, political, and defense ties**
  • Ensure **energy and food security**
  • Promote **regional peace** through **neutral diplomacy**
- Recognizes the **Gulf as India's extended neighbourhood** and **Iran as a proximate partner** due to historic, cultural, and geographic linkages.

4. Strategic Importance of West Asia for India

🌍 **A. Energy and Economic Cooperation**

• **West Asia supplies ~50% of India's crude oil** needs.
• **Qatar** supplies **41% of India's natural gas**, while **Iraq** ranks among top 5 oil suppliers.
• **UAE** is India's **3rd largest trading partner**, empowered by the **CEPA**;
• **Saudi Arabia** ranks **4th**, with ties institutionalized under the **Strategic Partnership Council (2019)**.

🌐 **B. Strategic Connectivity and Trade Corridors**

• **India-Middle East-Europe Economic Corridor (IMEEC)**: Aims to connect India with Europe, countering **China's Belt and Road Initiative (BRI)**.
• **International North-South Transport Corridor (INSTC)**: Enhances India's access to Central Asia and Russia via **Chabahar Port** in Iran.
• Vital chokepoints like the **Strait of Hormuz** ensure secure maritime transit.

🛡️ **C. Security and Counterterrorism Cooperation**

• Strong defense partnerships with **UAE, Saudi Arabia, Oman**.
• Conducts **joint exercises** like *Desert Cyclone* (UAE) and *Naseem Al Bahr* (Oman).
• Shared intelligence and military collaborations address **terror threats**, like missile attacks by **Houthi rebels** in the Red Sea region.

🏛️ D. Balanced Multilateral Diplomacy

- Strong **India-Israel cooperation** in defense, agriculture, and water technology.
- Engagement in **I2U2** (India-Israel-UAE-US) for tech and innovation.
- Involvement in **Afghanistan reconstruction** shows India's commitment to regional peace.

🌍 E. Diaspora and Remittance Power

- Over **9 million Indians** reside in West Asia.
- India received **$87 billion in remittances in 2021**, with GCC countries as the largest contributors.
- Cultural diplomacy enhanced through soft power landmarks like the **BAPS Hindu Temple** in Abu Dhabi.

5. Key Challenges to India-West Asia Engagement

Issue	Nature of the Challenge
Trade Deficit	India's trade with the region is limited—only **7.5% of global trade (2019)**
Geopolitical Volatility	Navigating ties between **Israel–Palestine**, **Iran–Saudi Arabia**, amidst ongoing conflicts
Strategic Competition	Growing influence of **China** in ports and logistics (e.g., Jebel Ali, Duqm) threatens India's presence
Energy Dependence Risk	Volatile oil prices and supply chain disruptions affect India's economy
Internal Instability	Ongoing crises in Syria, Yemen, Iraq affect India's regional investments and human capital interests

6. Strategic Measures for Deepening India-West Asia Ties

🕊️ A. Balanced and Independent Diplomacy

- Uphold **strategic autonomy** by engaging **all stakeholders**—Iran, Israel, Saudi Arabia, UAE—without choosing sides.
- Support **regional peace efforts** like a potential **Abraham Accords 2.0**, fostering reconciliation and dialogue.

⚡ B. Energy and Economic Diversification

- Expand **renewable energy cooperation** to reduce long-term oil dependence.
- Enhance **infrastructure, technology, and defense investments** with GCC nations.
- Use CEPA-type frameworks beyond UAE—possibly with **Saudi Arabia** and **Qatar**.

🔐 C. Security & Intelligence Collaboration

- Institutionalize **counter-terrorism pacts** with Israel, UAE, and Bahrain.
- Promote **joint command structures**, **shared threat assessments**, and **interoperability** through more joint military drills.

🌱 D. Sustainability and Climate Cooperation

- Leverage **I2U2** and similar platforms to promote **climate adaptation**, especially in water-scarce regions.
- Share expertise in **desalination, desert agriculture**, and **arid-zone sustainability models**.

🤝 E. Soft Power and Cultural Integration

- Promote **academic exchanges**, **digital media collaborations**, and **sports diplomacy** (e.g., IPL UAE, IPL auction in Saudi Arabia).
- Engage youth and institutions to foster a **values-based narrative** of cooperation and mutual growth.

7. India-West Asia: A Relationship in Transformation

Domain	Past	Present	Future Outlook
Energy	Crude oil dependency	Natural gas & renewables	Diversification via green energy
Trade	Petroleum-led imports	CEPA, digital trade, defense	Service sector growth
Security	Limited military ties	Joint exercises & intelligence	Deeper defense pacts
Culture	Worker diaspora	Socio-cultural integration	Knowledge and media diplomacy

🔚 Conclusion: India as a Stabilizing Power in West Asia

India's West Asia outreach represents a fine balance of **realpolitik and idealism**. While **energy and security remain anchors**, the future lies in **innovation-driven diplomacy**, **multilateral coalitions**, and **sustainable development cooperation**.

Through **issue-based partnerships**, India can shape the emerging order in West Asia—one that safeguards its interests while promoting **peace, progress, and pluralism** in the region.

Foreign Aid and India: Navigating Development, Sovereignty, and Strategic Autonomy

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – International Relations: Bilateral and Multilateral Agreements**
✅ **GS Paper 2 – Governance: Role of NGOs and Development Assistance**
✅ **GS Paper 2 – Effect of Foreign Policies on India's Interests**

1. Why in News?

- In a significant move, **former US President Donald Trump** imposed a **90-day freeze on foreign assistance**, halting **USAID operations globally**, triggering debates on the **role and future of foreign aid in India**.
- The decision prompts an assessment of how such aid influences India's **developmental goals, sovereignty, and foreign policy autonomy**.

2. Understanding USAID and Its Global Footprint

🔹 **What is USAID?**
• Founded in **1961**, the **United States Agency for International Development (USAID)** serves as the primary channel of **US civilian foreign aid**.
• Works in over **100 countries** to promote **democratic governance, economic growth, health, education**, and **climate resilience**.

🔹 **Flagship Programs**

Program	Objective
PEPFAR	Combat HIV/AIDS globally
Feed the Future	Enhance agricultural productivity and food security
Power Africa	Expand electricity access across Africa

🔹 **Global Reach** (2024):
• USAID contributed **42% of global humanitarian aid** (UN-tracked)
• Major recipient countries: **Ukraine, Ethiopia, Jordan, Syria, South Sudan, Afghanistan**

3. USAID in India: Evolution and Impact

🔹 **Historic Engagement**
• Began in **1951** with **India Emergency Food Aid Act**
• Transitioned from **food relief** to **infrastructure, governance, and reforms** over time

🔹 **Key Contributions in India (2023–24)**

Sector	Details
Health	USD 79.3 million aid; reduced child mortality by 2 million since 1990
WASH	Enabled toilet access for **3 lakh people**, supported **Swachh Bharat**
Education	Supported **Padhe Bharat Badhe Bharat**; trained **61,000+ teachers**
Renewable Energy & Disaster Resilience	Backed COP26 targets and **Forest-PLUS 3.0** with MoEFCC
Agriculture	Introduced **climate-resilient farming** under *Feed the Future*

4. Implications of the USAID Freeze on India

Sector	Impact
Health	Delay in pandemic recovery; weakens rural healthcare momentum
Economic Development	Disruption in **poverty alleviation** and **livelihood projects** (USD 34.4 million support halted)
NGO Ecosystem	Funding freeze impacts **grassroots innovation**, flexibility, and capacity building
Employment	Thousands of **social sector professionals** at risk due to stalled projects
Advocacy & Accountability	Weakens watchdog NGOs that monitor state actions and protect vulnerable groups

5. Evolution of India's Approach to Foreign Aid

📜 **A. Post-Independence Era (1950s–1970s)**

• High dependency on Western aid for poverty alleviation and food security
• Most ODA came from **US, UK, USSR**, and **World Bank-led consortia**

🔁 B. Shift Towards Self-Reliance (1970s–1990)

- Green Revolution, industrialization, and **FCRA 1976** aimed to reduce aid dependency
- Aid came under scrutiny for potential **foreign interference**

📈 C. Post-Liberalization Era (1991 onwards)

- Shifted from aid to **FDI-driven growth model**
- FDI surged at **24.28% CAGR** post-1991; inflows rose **165x** since reforms
- India prioritized **trade, technology**, and **climate partnerships** over aid

🌍 D. Emerging Donor Role (Post-2020s)

- India now provides aid to **developing nations in Asia and Africa**
- 2025 Budget allocated **₹6,750 crore** for foreign aid
- Strategic aid to **counter Chinese influence** (e.g., **$100 million credit to Maldives**, 2022)
- Humanitarian leadership via **Vaccine Maitri** (vaccines to 95 countries)

6. Key Concerns Regarding Foreign Aid

Concern	Details
Sovereignty Issues	Aid often tied with policy conditions (e.g., trade liberalization, patent laws)
Security Threats	NGOs like **Greenpeace**, **Amnesty** accused of fanning protests (anti-nuclear, farm laws)
Strategic Influence	Donors may influence India's geopolitical stand (e.g., **Quad vs. BRI**, **Russia-Ukraine War**)
Cultural Conflicts	Foreign NGOs promote ideologies (e.g., LGBTQ+, evangelicalism) that may clash with local norms
Transparency Gap	Lack of standardized reporting on foreign aid utilization breeds mistrust

7. Way Forward: Balancing Aid and Autonomy

🛠️ A. Strategic Partnerships, Not Dependency

- Accept **untied aid** (e.g., Japan's ODA for metros), aligned with national priorities
- Prioritize foreign assistance in **healthcare, climate change**, and **disaster resilience**

⚖️ B. Uphold Sovereignty and Neutral Diplomacy

- Maintain **strategic autonomy** by engaging diverse partners without compromising on **national interests**
- Diversify partnerships to **mitigate over-reliance on Western aid**

🤝 C. Strengthen South-South Cooperation

- Empower **Development Partnership Administration (DPA)** for structured aid outreach
- Promote initiatives like **ITEC**, and expand concessional finance and Lines of Credit
- Budget 2025: ₹6,750 crore for development projects in **Asia & Africa**

📊 D. Improve Transparency & Monitoring

- Enforce **audit-based mechanisms** (e.g., CAG review of World Bank programs)
- Launch **public dashboards** for real-time tracking of aid utilization
- Periodic review of NGOs' performance, funding source, and impact assessment

8. India's Foreign Aid Profile: From Recipient to Strategic Donor

Period	Role	Key Milestone
1950s–1970s	Aid Receiver	India Emergency Food Act (USAID)
1980s	Self-reliant Model	Green Revolution, FCRA 1976
1990s–2010s	FDI-Focused Economy	Liberalization reforms, ODA decline
2020s	Strategic Donor	Vaccine Maitri, Aid to Maldives, DPA formation

🔚 Conclusion: From Dependency to Leadership

India's engagement with foreign aid is no longer transactional but **strategically calibrated**. While aid continues to support critical sectors, **self-reliance, transparency**, and **global cooperation** define the new approach.

By leveraging aid where necessary—while preserving **policy sovereignty and national priorities**—India can ensure that foreign funding becomes a **catalyst**, not a constraint, in its journey toward inclusive and sustainable development.

China's Critical Mineral Curbs & India's Strategic Response

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Industrial Policy | Resource Mobilization | Planning & Strategic Industries**
✅ **GS Paper 2 – Bilateral Relations & Global Trade Policies**

1. Why in News?

- **China** has imposed **export restrictions on Germanium**, a **critical mineral** crucial for semiconductors, fiber optics, and solar cells.
- The move has raised alarms in **India**, which depends heavily on Chinese imports for such minerals, impacting its **tech, defence, renewable energy**, and **semiconductor** industries.

2. What is Germanium and Why is it Critical?

Feature	Details
Type	Lustrous, hard, silvery-white semi-metal
Applications	• Fiber-optic cables • Infrared imaging and night vision devices • Semiconductors • Solar panels (due to heat resistance & high conversion efficiency)
Global Production	• China produces over 60% of global germanium • India has no domestic sources – entirely import-dependent

3. What are Critical Minerals?

- **Definition**: Minerals essential for **emerging technologies** (e.g., semiconductors, EVs, renewables, aerospace), with **high supply risk** and **strategic significance**.
- **Examples**: Lithium, Cobalt, Nickel, Rare Earth Elements, Germanium, Graphite

🔹 India's Critical Mineral List (2023)

- Includes **30 critical minerals**, e.g., Antimony, Beryllium, Bismuth, Cobalt, Gallium, Germanium, Lithium

🔹 Global Dynamics

Player	Control in Supply Chain
China	• 80–90% of processing for rare earths • Over 60% of global germanium production
India	• High import dependence, especially for batteries, electronics, and aerospace industries

4. Strategic Importance of Critical Minerals for India

⚡ Energy & Green Technology

- Core to **solar panels**, **EV batteries**, **wind turbines**
- **India's EV market** projected to grow at **49% CAGR till 2030**, reaching **10 million units annually**

🛰️ Technological Sovereignty

- Germanium and rare earths are key to:
  - **Semiconductors**
  - **AI and robotics**
  - **Defence and aerospace**
  - **5G and satellite communications**

🌍 Geopolitical Significance

- Economic Survey 2022–23 warns of critical minerals becoming **"new oil"**
- Global supply chains increasingly weaponized for **strategic and diplomatic leverage**

5. Sector-wise Applications & Availability in India

Mineral	Key Applications	Indian Availability
Germanium	Optics, solar, IR imaging	❌ No known deposits
Cobalt	EVs, aerospace	❌ Fully imported
Gallium	Semiconductors, LEDs	✅ By-product of alumina production (NALCO & HINDALCO)
Lithium	Batteries, ceramics	✅ 5.9 MT in J&K (inferred resources)

Graphite	Lubricants, EVs	✅ 9 MT reserves
Rare Earths (REEs)	Wind, aviation, defence	✅ Monazite deposits in beach sand
Copper	Wiring, EVs	⚠️ Domestic output meets **only 4%** of demand
Nickel	Steel, EVs, solar	✅ Vedanta's NICOMET plant
Silicon	Electronics	✅ India ranks **12th globally** in production

6. Challenges for India

- **Heavy import dependence** from China & other suppliers
- **Lack of processing infrastructure** for critical minerals
- **Inadequate exploration & mapping** of mineral-rich zones
- **Weak domestic industry linkages** between mining and tech sectors
- **Geopolitical risks** from export restrictions, trade wars, and sanctions

7. India's Strategic Initiatives for Mineral Security

🛡️ **Institutional & Policy Framework**

Initiative	Description
National Critical Mineral Mission	Launched to ensure supply security and reduce dependence on imports
KABIL (Khanij Bidesh India Ltd)	JV between NALCO, HCL & MECL to secure mineral assets abroad
Mineral Security Partnership (MSP)	India joined the US-led MSP with Australia, Japan, South Korea, etc., to ensure global supply chain resilience
MMDR Act Amendment (2023)	Expanded private sector entry and auctioned 24 critical mineral blocks
Exploration Projects	Conducted by **Geological Survey of India (GSI)** in lithium, REEs, and other strategic minerals

8. What More Can Be Done?

🔍 **Exploration & Mapping**

- Accelerate **aeromagnetic and satellite surveys**
- Incentivize **private exploration companies** through PPP models

🏭 **Processing & Refining Capacity**

- Set up **dedicated refining hubs** for lithium, cobalt, gallium
- Develop **Greenfield processing units** near mining zones

🌐 **Diversify Imports**

- Secure long-term **bilateral mining partnerships** with:
  - **Australia** (Lithium, REEs)
  - **Chile** (Copper, Lithium)
  - **Argentina** (Lithium Triangle)
  - **African nations** (Cobalt, Nickel)

🚀 **Support Innovation & Startups**

- Promote **recycling of e-waste** for rare earth recovery
- Encourage **startups in battery chemistries** using alternate materials

9. Conclusion: Strategic Minerals for Strategic Autonomy

China's export restrictions on germanium are a **wake-up call** for India to accelerate its transition from **import dependence to strategic mineral self-reliance**.
With critical minerals being the **bedrock of 21st-century technologies**, India must integrate **mineral diplomacy, domestic production, and technological innovation** to achieve its **Net Zero goals** and **Atmanirbhar Bharat vision**.

Reforming the G20: Towards a More Inclusive Global Governance

📌 **Syllabus Mapping:**
✅ ***GS Paper 2*** **– International Institutions, Global Groupings, Bilateral & Regional Agreements, Effect of Global Politics on India's Interests**

1. Why in News?

- As **South Africa chairs the G20 in 2025**, debates intensify over its **limited representativeness**, exclusivity, and inability to address **inclusive global challenges**.
- Rising calls urge **structural reforms** to make G20 more reflective of the **global South and multilateral needs**.

2. What is the G20 and Why Is It Significant?

Aspect	Details
Formation	1999 post-Asian Financial Crisis as a forum for finance ministers.
Upgrade	Elevated to **leaders' summit level in 2008** post global financial crisis.
Membership	19 countries + **European Union (EU)** + **African Union (AU)** (from 2023).
Coverage	Represents **85% of global GDP**, **75% of trade**, and **67% of population**.
Structure	No permanent secretariat; governed by **rotating presidency** and **troika system**.

Major Contributions:

- **Basel III Norms** (2010): Global banking regulation reform
- **Debt Service Suspension Initiative** (2020): Covid-era debt relief
- **Global Minimum Corporate Tax** (2021): 15% floor for MNCs
- **Global Hunger & Poverty Alliance** (2024): Cash transfer + school meals
- **India-Middle East-Europe Corridor (IMEC)** (2023): Connectivity boost
- **Global Biofuels Alliance** (2023): Sustainable fuel cooperation

3. What are the Limitations of the G20?

A. Lack of Representation

- Over **170+ countries** (90% of global sovereigns) are excluded.
- Non-members attend as **special invitees**, lacking consistent voice or voting rights.

B. Decision-Making Exclusivity

- **No legal framework** binds decisions; limited accountability mechanisms.
- **Informal nature** limits follow-through on key declarations.

C. Global Challenges Demand Global Consensus

- Crises like **climate change, pandemics, debt distress** affect all nations.
- Exclusive G20 decisions often neglect **Global South priorities** like concessional finance, food security, and tech transfer.

D. Divergent Interests

Developed Economies	Developing Economies
Green technology, debt ceilings	Energy access, equitable financing
AI and cyber security standards	Market access, vaccine equity, remittances

E. Geopolitical Roadblocks

- **US-China**, **Russia-West**, and **Israel-Iran** tensions stall consensus.
- Focus on bloc rivalries undermines multilateral cooperation (e.g., climate finance gridlock in G20 2023).

4. What Reforms Can Strengthen the G20?

A. Adopt Regional Consultative Models

- Emulate the **Financial Stability Board's RCG model**, integrating regional feedback.
- Enable **G20–non-G20 co-chairing** of regional dialogues (e.g., Asia-Pacific, Sub-Saharan Africa, Latin America).

B. Expand Participation

- Grant **Permanent Observer Status** to key blocs:
  - **ASEAN**, **CARICOM**, **Pacific Island Forum**, etc.
- **Rotate invitees** from underrepresented regions—formalize criteria beyond ad hoc selection.

C. Create a Permanent Secretariat

- Institutionalize memory, continuity, and follow-up via:
  - **Annual review mechanisms**
  - **Monitoring taskforces** on climate finance, digital economy, and debt relief

D. Strengthen Accountability and Delivery

- Introduce **mandatory reporting** on commitments (like climate funding and vaccine equity).
- **Formalize role of Troika** in overseeing long-term policy coherence across presidencies.

E. Address Global South Priorities

Global Concern	Reform Suggestion
Debt Crisis	Restructure **global debt architecture**; expand IMF's SDR pool
Climate Adaptation	Create a **G20 Green Development Fund** for low-income countries
Food Insecurity	Strengthen **Global Hunger and Poverty Alliance** with binding funding pledges and tech sharing for resilient agriculture

5. India's Role in Reforming G20

- India's **2023 G20 Presidency** emphasized:
  - **Voice of the Global South**
  - Digital public infrastructure (DPI) model
  - Global Biofuels Alliance & IMEC
- With India in the **G20 troika (2023–2025)**, it can advocate:
  - Institutional reforms for inclusivity
  - Equitable digital transition
  - Support for Africa and small island developing states (SIDS)

6. Conclusion: G20 at a Crossroads

To maintain its relevance in a multipolar world, **G20 must evolve** into a platform that:

- **Listens to and includes** the **Global South**
- Builds **consensus beyond elite clubs**
- Addresses **planetary and people-centered challenges** like **climate resilience**, **hunger**, and **digital equity**

A reformed G20, rooted in **democratic multilateralism**, can bridge global divides and fulfil its promise of **equitable global economic governance**.

Bhutan Launches First National Crypto-Tourism Payment System

📌 **Syllabus Mapping:**
✅ ***GS Paper 2*** **– International Relations | Bilateral Initiatives**
✅ ***GS Paper 3*** **– Economy | E-Governance | Digital Currency**

1. Why in News?

Bhutan has become the **first country in the world** to launch a **national-level cryptocurrency-based tourism payment system**, enabling **cashless travel for foreign visitors** using over **300 cryptocurrencies** in collaboration with **Binance Pay** and **DK Bank**.

2. What is the Crypto-Tourism Initiative of Bhutan?

Feature	Details
Launched By	Bhutan Government in partnership with **Binance Pay** and **DrukPay/DK Bank**
Objective	To promote **cashless tourism**, **financial inclusion**, and reduce transaction costs
Technology	Uses **QR-code-based payment gateways** for real-time crypto transactions
Cryptocurrencies Supported	Includes **Bitcoin (BTC), Binance Coin (BNB), USD Coin (USDC)** and 300+ others
Use-Cases	Payments for hotels, transport, guides, souvenirs, entry fees, etc.
Security Layer	Backed by **blockchain ledger** for transparency and tamper-proof records

3. Significance of Bhutan's Initiative

- **First-of-its-kind Globally:** Establishes Bhutan as a **crypto innovation hub** in tourism finance.
- **Tourism Boost:** Eases payment systems for foreign crypto holders, making Bhutan a **convenient destination**.
- **Digital Finance Promotion:** Encourages **blockchain integration** in everyday transactions.
- **Financial Inclusion:** Promotes access to alternative payment systems in remote and rural areas.
- **Sovereign Digital Infrastructure:** Enhances Bhutan's **FinTech credibility** and aligns with **sustainable digital development**.

4. Key Facts: Bhutan for Prelims

Parameter	Details
Capital	**Thimphu**
Currency	Ngultrum (pegged to Indian Rupee)
Geography	Landlocked between **India and China**
Major River	**Manas River** (transboundary with Assam, India)
Unique Identity	First **carbon-negative** country
National Philosophy	Measures success using **Gross National Happiness (GNH)**

5. About Cryptocurrency (For Prelims)

- **Definition:** Cryptocurrency is a **decentralized digital currency** based on **blockchain** technology, using cryptographic techniques for security and transaction validation.
- **Examples:** Bitcoin (BTC), Ethereum (ETH), Binance Coin (BNB), USD Coin (USDC)
- **In India:**
  - Not considered **legal tender** (cannot be used to legally discharge debts)
  - But also **not banned** – falls under gray regulatory zone.
  - **Taxation:** 30% tax on profits from crypto assets, plus 1% TDS under Income Tax Act since FY 2022–23.

END Conclusion

Bhutan's **crypto-tourism payment system** sets a global benchmark in **financial innovation**, blending **blockchain technology** with **sustainable tourism**. As India and other countries watch closely, this move could influence **future digital currency policies**, particularly in enhancing **cross-border tourism** and **crypto adoption**.

INTERNAL SECURITY & DEFENCE

Strategic Defence Technologies in India

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Defence Technology | Security Challenges | India's Internal & External Security**
✅ **Prelims Focus – BrahMos, S-400 Triumf, COMPACT Initiative, Kinetic & Non-Kinetic Warfare, Defence Agreements**

1. Why in News?

- Defence Minister **Rajnath Singh** inaugurated the **BrahMos Integration and Testing Centre** in Lucknow, reinforcing India's focus on indigenous missile capability.
- Meanwhile, the **S-400 Triumf** system demonstrated its operational efficiency by intercepting **Pakistani drones and missiles**, showcasing India's integrated air defence prowess.

2. BrahMos: India's Supersonic Precision Weapon

🔹 **Overview**
• Jointly developed by **India's DRDO (50.5%)** and **Russia's NPOM (49.5%)** under **BrahMos Aerospace**
• Name derived from **Brahmaputra (India)** and **Moskva (Russia)** rivers
• First tested in **2001**, off **Chandipur, Odisha**

🔹 **Key Features**

Feature	Description
Type	Two-stage **supersonic cruise missile** with 'fire and forget' capability
Speed	Mach 2.8 to Mach 3
Range	Upgraded from **290 km to 400 km**; next-gen aiming at **800 km** and **hypersonic (Mach 5+)** speeds
Flight Profile	Launch altitude: up to 15 km; target strike altitude: as low as 10 m
Strike Strength	3× faster, 2.5× longer range, 9× more kinetic energy than subsonic missiles

🔹 **Variants and Deployment**

- **Ship-Based**: Deployed on **INS Rajput**, capable of sea-to-sea and sea-to-land strikes in salvos
- **Land-Based**: Mobile launchers with simultaneous multi-target firing; operational since **2007**
- **Air-Launched**: Integrated with **Sukhoi-30MKI** fighters; extended strike range of **1,500 km**
- **Submarine-Launched**: Launched from depths of **50 meters**, using split trajectory modes
- **BrahMos-NG**: Under development; lighter, stealthier variant for air, naval, and underwater deployment

3. S-400 Triumf: India's Strategic Air Defence Umbrella

🔹 **System Overview**
• Developed by **Russia**; NATO calls it **SA-21 Growler**
• Entered service in **2007**; India signed a **$5.4 billion deal** for **five squadrons** in **2018**

🔹 **Operational Capability**

Parameter	Specification
Range	Engages aerial targets up to **400 km**
Altitude	Can intercept at heights up to **30 km**
Speed Interception	Up to **Mach 14 (~17,000 km/h)**
Radar Reach	Tracks up to **600 km**; engages 36 targets simultaneously
Missile Types	40N6 (400 km), 48N6 (250 km), 9M96E/E2 (40–120 km)

🔹 **India-Specific Role**
• Three squadrons deployed; remaining two expected by **2026**
• Dubbed **Sudarshan Chakra** by India
• Played a key role in neutralising **Pakistani drone threats** post-2025 escalations

4. Warfare in the Modern Era: Kinetic vs Non-Kinetic Capabilities

Warfare Type	Features	Examples

Kinetic Warfare	Direct physical attacks via missiles, bombs, armed conflict	**Balakot Airstrike (2019)**, **Operation Sindoor (2025)**
Non-Kinetic Warfare	Use of cyber, electronic, psychological, and economic tactics	**Cyber attacks**, **Revocation of MFN to Pakistan**, **Divya Drishti EW system**

5. India's Recent Strategic Defence Agreements

🔹 **India–Russia**
- Deals: S-400, BrahMos, AK-203 rifles, MiG-29s, Kamov helicopters
- Production under license: **T-90 tanks**, **Su-30MKI fighters**
- BrahMos integration remains a major collaborative effort

🔹 **India–US**
- **US–India COMPACT Initiative**: Military and tech collaboration
- Agreements: **SOSA**, Liaison Officer pact
- Key Equipment: **C-130J, C-17, Apache**, and potential **F-35 acquisition talks**

🔹 **India–UK**
- **FTA signed**; Defence focus on **MANPADs**, **STARStreak missiles**
- Collaboration: **Air-to-air missile facility** in Hyderabad (Thales UK–BDL)

🔹 **India–France**
- Inter-Governmental Agreement (IGA) for **26 Rafale-M** for Navy
- Industrial roadmap covers **Scorpene submarines**, Rafale, and joint manufacturing

6. Technological Edge and Indigenous Capacity Building

Technology	Role in India's Strategy
BrahMos	Strike deterrence and deep-strike precision across land, sea, and air
S-400	Multi-layered air defence against drones, aircraft, and ballistic threats
Electronic Warfare (Divya Drishti)	Non-kinetic battlefield awareness and jamming
Unmanned Aerial Systems (UAS)	Counter-drone and surveillance operations (e.g., Turkish Songar drone interception)
Indigenous Integration	DRDO-led systems and private sector facilities (e.g., BrahMos facility in Lucknow)

7. Conclusion: Towards a Multi-Domain Military Posture

India's strategic preparedness is evolving with **advanced defence systems**, combining **kinetic capabilities** like **BrahMos**and **S-400**, and **non-kinetic warfare** tools like **cyber and electronic warfare**.
Through **defence partnerships with Russia, the US, France, and the UK**, and growing indigenous manufacturing, India is reinforcing its ability to respond decisively to threats from **both Pakistan and China**.
The future lies in building a **multi-domain force**—integrated, indigenous, and technologically superior—to ensure **strategic deterrence and regional dominance**.

IMDEX Asia 2025

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – International Relations: Bilateral & Multilateral Groupings Involving India**
✅ **GS Paper 3 – Security: Maritime Security and Defence Technology**

1. Why in News?

- **INS Kiltan (P30)** participated in the **International Maritime Defence Exhibition (IMDEX) Asia 2025**, held at **Singapore's Changi Exhibition Centre**, reaffirming **India's strategic commitment** to **Indo-Pacific maritime security** and naval diplomacy.

2. About IMDEX Asia

Feature	Description
Founded	**1997**; held **biennially** in **Singapore**
Nature	A premier **maritime and defence exhibition** in the **Asia-Pacific region**
Participants	Global **navies**, **coast guards**, and **maritime defence industries**

🔹 **Key Components**

- **International Maritime Security Conference (IMSC)**:
  - Attended by **navy chiefs, coast guard leaders, and policy experts**
  - Focus: **Strategic dialogue**, **cooperative maritime solutions**, **shared security**
- **Maritime Information Sharing Exercise (MARISX)**:

- Scenario-based **multilateral coordination drill**
- Objective: Enhance **information-sharing**, **crisis response**, and **regional maritime domain awareness**

3. INS Kiltan: India's Indigenous Stealth Power

Specification	Details
Class	**Kamorta-class anti-submarine warfare (ASW) stealth corvette**
Project	Built under **Project 28**
Commissioned	3rd ship in the Kamorta-class series
Builder	**Garden Reach Shipbuilders & Engineers (GRSE)**, Kolkata

🔹 **Unique Features**

- **Carbon Fibre Composite Superstructure**:
  - First Indian warship with this design
  - Offers **enhanced stealth**, **lower radar signature**, **reduced weight**, and **lower maintenance**
- **Anti-Submarine Warfare Capabilities**:
  - Equipped with advanced **sonar, torpedoes**, and **ASW sensors**
  - Suited for **blue-water and littoral zone combat operations**

🔹 **Legacy Connection**

- Named after **Kiltan Island** in the **Aminidivi group** (Lakshadweep)
- **Carries forward the name of Kiltan (P79)**, a Petya-class corvette that served in **Operation Trident** during the **1971 Indo-Pak war**

4. Strategic Significance of IMDEX Asia for India

Dimension	Significance
Maritime Diplomacy	Strengthens India's role in **multilateral maritime forums** and showcases its **indigenous defence capability**
Indo-Pacific Outreach	Reinforces India's vision of **SAGAR** (Security and Growth for All in the Region)
Technological Showcasing	Offers platform to promote **Make in India naval projects** like INS Kiltan
Regional Security Engagement	Builds **trust and interoperability** among Indo-Pacific navies amid growing Chinese maritime assertiveness

5. Conclusion: Advancing Naval Diplomacy Through Defence Exhibitions

IMDEX Asia 2025 reflects **India's proactive maritime engagement** and showcases its **indigenous defence capabilities**like **INS Kiltan**, which symbolize the nation's shift towards **self-reliant defence manufacturing**.
Participation in such platforms not only enhances **strategic visibility** but also strengthens **multilateral maritime cooperation** essential for **Indo-Pacific stability**.

India's Defence Sector

📌 **Syllabus Mapping:**
✅ ***GS Paper 3*** **– Defence Technology, Indigenization, Security**
✅ ***GS Paper 2*** **– Government Policies & Interventions, Bilateral Relations**

1. Why in News?

India is witnessing a **strategic shift** in its defence landscape—from a traditionally **import-dependent model** to one focused on **innovation, indigenous capability, and exports**. The rise of schemes like **iDEX**, expansion in **defence exports**, and a growing role of the **private sector** reflect this transition under the vision of **Aatmanirbhar Bharat**.

2. Key Developments in India's Defence Sector

🛡️ **Indigenous Defence Production**

- **Indigenization rate rose** to **65% in FY24**, up from 30–35% in FY15.
- **Domestic defence production** reached an all-time high of **₹1.27 lakh crore in FY24**, with a **target of ₹3 lakh crore by 2029**.
- **Private sector share:** 21%, showing growing participation in military hardware innovation.

🌍 **Defence Exports Expansion**

- **Exports surged 34x** from FY14 to FY25, reaching **₹23,622 crore**.
- **India exports to 100+ countries**, including the **US, France, and Armenia**.
- Major exports: **Do-228 aircraft**, **Chetak helicopters**, **torpedoes**, **interceptor boats**, **bulletproof jackets**.

- **Export target**: ₹50,000 crore by 2029.

🚀 Defence R&D and iDEX Growth

- iDEX (Innovations for Defence Excellence):
  - Recognised by **PM's Award for Innovation (2021)**.
  - Key projects: **SkyStriker drones**, **AI surveillance bots** (used in Operation Sindoor).
  - Funds: ₹1.5 Cr (SPARK), ₹10 Cr (iDEX Prime), ₹25 Cr (ADITI - 2024).

🏭 Defence Industrial Corridors (DICs)

- **Tamil Nadu and Uttar Pradesh DICs** aim to attract MSMEs and FDI in defence.
- Offer policy incentives and infrastructure for production hubs.

✈️ Modernisation of Armed Forces

- Indigenous systems:
  - **Tejas LCA, Arjun Mk-1A tanks, Astra missiles, Pinaka systems**.
- **Imported precision systems**:
  - **SCALP, HAMMER, and loitering munitions** deployed during **Operation Sindoor**.
- Defence R&D focus: **Hypersonics**, **UAVs**, **anti-satellite weapons**, **space-based ISR**.

📜 Policy Reforms

- **FDI policy relaxed**: Up to **74% via automatic route**.
- **Defence Acquisition Procedure (DAP) 2020**: Boosts *Make in India*.
- **Positive Indigenisation Lists**:
  - Fifth list: 346 items with ₹1,048 crore import substitution value.
- **SRIJAN portal**: Connects Indian industries with armed forces & DPSUs for indigenisation.

3. Key Challenges in Defence Sector

Challenge	Explanation
Tech Gaps	Lack of core technologies like **jet engines**, **semiconductors**, **AESA radars**.
Procurement Delays	Complex & slow; e.g., **Tejas took 20 years**, delays in **Rafale** and **Scorpene** procurement.
Low R&D Budget	India spends **0.7% of GDP on R&D** vs **2.4% (China)** and **3.5% (US)**. DRDO's share is only 3.94% of defence budget.
Limited Private Role	Only **21% share** in defence production; hampered by low risk appetite & public-private disconnect.
Cybersecurity & Testing	Weak infrastructure for **cyber warfare**, **UAV testing**, **EW systems**, with delays under **DTIS**.
Legacy Systems	Older systems like **MiG-21s** still operational; **lack of timely upgrades** and retirements.

4. Strategic Measures to Strengthen Defence Innovation & Export

🔬 Boost R&D and Innovation

- Expand **public-private R&D grants** and create **Defence Innovation Zones**.
- Promote **quantum tech, hypersonics, autonomous systems, and cyber defence**.
- Example: **HAL's 3D-printed aerospace parts** cut costs and production time.

🧩 Empower Private Sector and MSMEs

- **Procurement reservations** for firms in Tier-2/Tier-3 cities.
- **Seed capital**, hand-holding support for defence startups under iDEX and ADITI.

🧪 Expand Testing & Certification

- Establish new **Defence Testing Facilities** for:
  - **UAVs**, **electronic warfare**, **AI platforms**.
- Modernise cybersecurity with a **National Defence Cyber Command**.

🌐 Leverage Global Partnerships

- Joint ventures for tech transfer:
  - **France** (Rafale offsets), **Russia** (BrahMos), **Israel** (missiles & UAVs).
- Tap **Africa, ASEAN, Latin America** through:
  - **Defence Export Facilitation Cell**, **Quad**, and **I2U2 platforms**.

📊 Institutionalise Indigenisation Monitoring

- Launch **Defence Indigenisation Dashboard** & **Performance Index**.
- Track localisation targets under **Defence Production and Export Promotion Policy (DPEPP)**.

🛠️ **Set Up Global MRO Hubs**

- Set up **Maintenance & Overhaul centres** in strategic locations (e.g., **Vietnam**, **UAE**).
- Build post-sale confidence and **boost export-linked services**.

⬅ END Conclusion

India's defence transformation is no longer a distant aspiration but a **real-time strategic shift**. With the synergy of **iDEX, private sector expansion**, and **policy alignment**, India is poised to become a **net defence exporter** and **technology innovator**. For long-term impact, India must **bridge technological gaps**, **institutionalise reforms**, and **globalise its manufacturing & support chains**, ensuring not just security, but **strategic autonomy and influence** on the world stage by **2047**.

ECONOMY

Microfinance Sector Crisis

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Indian Economy: Banking Sector, Financial Inclusion, NBFCs**
✅ **GS Paper 2 – Governance and Policy Interventions for Inclusive Development**
✅ **GS Paper 1 – Indian Society: Poverty and Development Issues**

1. Why in News?

- India's **microfinance sector** is under severe stress as **gross NPAs (Non-Performing Assets)** spiked to **16% by March 2025**, almost doubling from **8.8% in 2024**.
- This sharp deterioration in asset quality has led to **tightening of credit**, **regulatory interventions**, and **questions about the viability** of microfinance institutions (MFIs).

2. What is Microfinance and Why is it Important?

🔹 **Definition & Role**
• Microfinance involves **provision of small loans**, savings, insurance, and remittances to **low-income individuals** and **underserved communities**, especially in **rural areas**.
• It empowers **women**, fosters **financial inclusion**, and aids **poverty alleviation**.

🔹 **Impact on Rural India**
• Improved livelihoods for over **100 million rural households** over the past three decades.
• Promoted **women's financial empowerment**:

- In 2022–23, **80 lakh women clients added**
- By 2023, **6.64 crore women borrowers**, with **12.96 crore active loans** (India Microfinance Review FY23)

🔹 **Historical Evolution**

Year	Development
1974	SEWA Bank established in Gujarat – first formal MFI
1992	NABARD launched SHG-Bank Linkage Programme
2010	Andhra Pradesh crisis led to Malegam Committee
2015	MUDRA Bank launched under PMMY

3. What Led to the Crisis in 2025?

🔹 **Structural & Economic Shocks**
• Economic slowdown with **GDP at 6.4% (4-year low)**
• Natural disasters (heatwaves, floods) disrupted rural incomes
• Election-related disruptions affected borrowers' liquidity

🔹 **Over-Leveraging & Credit Saturation**
• MFIs aggressively extended loans without assessing debt burden

• Borrowers took multiple loans from **several MFIs**, leading to **chronic indebtedness**
• Rise in **credit card dues** (₹2.30 lakh cr in 2023 → ₹2.71 lakh cr in 2024) mirrors broader **consumer credit overreach**

🔹 **Weakening of JLG Model**
• The **Joint Liability Group (JLG)** model depends on peer accountability, now diluted by:

- **Individualized behavior**
- **Changing borrower profile**
- **Reduced social cohesion**

🔹 **Regulatory Tightening & Political Interventions**
• RBI's new guidelines aimed at curbing **aggressive lending**
• State laws prohibiting coercive recovery practices:

- Tamil Nadu's *Money Lending Entities (Prevention of Coercive Actions) Act*
- Karnataka's draft bill with **stringent penalties**
  • **Loan waiver campaigns** like *Karja Mukti Abhiyan* eroding repayment culture

4. Current Status of Microfinance in India

Indicator	Status (as of 2024)
Portfolio Size	₹4.08 lakh crore
Growth Rate	16% in FY 2023–24 (down from 21% in FY 2022–23)
Geographic Coverage	28 States, 8 UTs, 730 districts
Top 5 States by Loan Outstanding	Bihar, Tamil Nadu, UP, Karnataka, West Bengal (58% of total exposure)

5. What Can Be Done? A Blueprint for Recovery

🔹 **A. Shift from Credit-only to Holistic Models**
• Adopt frameworks like **Basix's Triad Model**, which includes:

- **Livelihood support**
- **Financial services**
- **Institutional development**
  • Ensures loans are used for **productive purposes**, reducing misuse

🔹 **B. Reform Credit Appraisal and Lending Practices**
• Transition from group lending to **individual credit risk assessments**
• Improve borrower evaluation using **KYC**, **real-time credit scores**, and **household income metrics**

🔹 **C. Embrace Digital Infrastructure for Risk Mitigation**
• Implement **end-to-end Loan Origination and Management Systems (LOS/LMS)**
• Use **Big Data analytics** for dynamic credit scoring
• Open API frameworks to track credit across lenders

🔹 **D. Humane and Transparent Recovery Methods**
• Replace coercive recovery with **borrower engagement models**
• Provide **flexible repayment structures** (e.g., income-based EMIs)

🔹 **E. Financial Literacy and Counselling**
• Promote awareness on:

- Debt management
- Credit responsibility
- Repayment obligations
  • Can reduce defaults caused by misinformation or unrealistic expectations

6. Arguments Around the Sector's Crisis

Aspect	✅ Supportive View	❌ Critical View
Over-Leveraging	Reflects poor borrower profiling and credit indiscipline	Indicates systemic failure in financial literacy and MFI accountability
Regulation	Necessary to protect borrowers from exploitation	May stifle credit flow and innovation in the sector
Debt Waivers	Morally justifiable in genuine distress	Erodes repayment culture and weakens institutions
JLG Model	Needs transformation, not abandonment	Still effective in high-cohesion rural areas

7. Long-Term Implications and Way Forward

🔹 **A. A Test Case for Inclusive Financial Architecture**
- If successful, MFI reforms could serve as a model for **last-mile financial delivery**
- Balances **market-led approaches** with **social equity**

🔹 **B. Need for a Microfinance Policy Overhaul**
- Define sector-specific NPAs, reporting norms, and borrower profiling standards
- Encourage **credit bureaus for low-income borrowers**

🔹 **C. Coordination between States and RBI**
- Joint regulatory frameworks
- Grievance redressal mechanisms, borrower helplines, and institutional monitoring

⬅ END Conclusion: Reinventing Microfinance to Empower the Bottom of the Pyramid

India's microfinance crisis is not a collapse, but a correction. It highlights the sector's **fragility**, but also its **untapped potential** for driving **financial inclusion**.
With **data-driven reforms**, **borrower-centric policies**, and **robust institutional frameworks**, MFIs can transition from a volume-centric industry to a truly **transformative force** in rural development and poverty alleviation.

Private Sector Capex in India

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Growth and Development | Investment Models | Infrastructure**
✅ **GS Paper 2 – Government Policies and Interventions**

1. Why in News?

- The **National Statistics Office (NSO)** released its first **'Forward-Looking Survey on Private Sector Capex Investment Intentions'**, tracking corporate investment trends from **2021–22 to 2025–26**.
- It highlights the evolution and future outlook of **private capital expenditure (capex)** amid economic uncertainties.

2. What is Capex?

🔹 **Definition and Nature**
- **Capital Expenditure (Capex)** refers to investments in long-term physical assets such as **machinery, buildings, technology, and infrastructure**.
- Unlike **Operating Expenses (Opex)**, capex is a **non-recurring, asset-generating expense** that depreciates over time.

🔹 **Government Capex Focus (FY 2025–26)**
- Government allocated ₹**11.21 lakh crore** (3.1% of GDP) towards capex in FY26 to boost **infrastructure and economic growth**.

🔹 **Significance of Capex**
- **High multiplier effect**: Stimulates employment, ancillary industries, and productivity
- Promotes **counter-cyclical fiscal stability** and catalyzes private investment
- Enhances long-term **revenue generation and asset creation**

3. Trends in Private Sector Capex (FY22–FY26)

Indicator	Insights
Capex Growth (FY22–FY25)	Increased by **66.3%**
Capex Decline (FY26 Projected)	Expected **drop of 25.5%** due to **high interest rates, global tensions, and demand weakness**
Investment Purpose (FY25)	49.6% for **income generation**, 30.1% for **upgradation**, 2.8% for **diversification**
Capex Per Enterprise (FY25)	₹**172.2 crore** for new asset purchases

4. Sectoral and Asset Distribution

Category	Share in FY25
Sectors	Manufacturing (43.8%), Information & Communication (15.6%), Transportation & Storage (14%)
Asset Types	Machinery & Equipment (53.1%), Capital Work-in-Progress (22%), Buildings (9.7%)
Gross Fixed Assets (GFA)	↑ 27.5% YoY from ₹3,279.4 crore (FY23) to ₹4,183.3 crore (FY24)
Highest GFA in Electricity & Manufacturing sectors	

5. Key Challenges Hindering Private Capex

Challenge	Explanation
Geopolitical Uncertainty	Trade restrictions, global conflict, and supply chain risks (e.g., US-China tariffs)
High Borrowing Costs	Elevated interest rates → increased cost of credit → preference for internal accruals
Weak Consumer Demand	Low consumption = low business confidence → reduced incentive for greenfield expansion
Lack of Greenfield Projects	Dominance of brownfield investments limits new employment and capex visibility
Structural Bottlenecks	Land acquisition delays, labour shortages (e.g., L&T's 40,000-worker shortfall)
IBC-Induced Caution	Insolvency cases (e.g., Jet Airways) deter aggressive risk-taking
Low Capacity Utilization	Overall CU dropped from 76.3% (Q4 FY23) to 74.7% (Q3 FY24)
Investment Concentration	Skewed towards conglomerates (e.g., Reliance, Tata); limited mid-sector participation

6. What Can Be Done to Enhance Private Sector Capex?

🏗️ **Strengthen Institutional Mechanisms**

- Revamp and empower the **Project Monitoring Group (PMG)** for faster clearances
- Expand **Emergency Credit Line Guarantee Scheme (ECLGS)** to mid-sized manufacturers
- Leverage **Credit Guarantee Scheme for Startups (CGSS)** to fund tech and early-stage ventures

⚙️ **Broaden and Optimize PLI Schemes**

- Extend **PLI coverage** to defence, precision engineering, green technology
- Ensure **timely disbursements** and process transparency to build trust

💸 **Improve Tax and Regulatory Incentives**

- Reintroduce **accelerated depreciation benefits** on plant & machinery
- Expedite implementation of the **National Logistics Policy (2022)** to cut costs (13–14% to 8–9% of GDP)

🧩 **De-Risk Private Investments**

- Promote **Infrastructure Investment Trusts (InvITs)** and **REITs** to mobilize private capital while managing risk
- Encourage public-private partnerships in **roads, railways, and renewables**

7. Long-Term Strategic Measures

Area	Recommendation
Digital Infrastructure	Expand **Digital Public Infrastructure** (UPI, ONDC, DEPA) to support MSMEs and startups
Labour Market	Address skill mismatch through **Skill India**, digital reskilling, and vocational education
Inclusive Investment	Encourage **regional diversification** and **FPO-led agri-industrial clusters**

8. Conclusion: Resetting India's Investment Engine

The private sector's capital expenditure in India has shown encouraging growth post-COVID. However, the projected slowdown in FY26 signals **investment fatigue amid macroeconomic headwinds**.
To sustain long-term growth, India must enable broader private participation, **reduce risk perception**, and create **robust credit and regulatory ecosystems**.
Blending policy reforms with innovation financing and infrastructure modernisation will be key to reviving private capex and achieving India's $5 trillion economy vision.

Breaking the 6% Trap

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Growth & Development, Inclusive Growth, Investment Models**
✅ **GS Paper 2 – Government Policies & Interventions**

1. Why in News?

- India's GDP growth has averaged **around 6% between 2000 and 2025**, barring the **brief 8% growth phase from 2006 to 2010**.
- This pattern is referred to as the **"6% GDP growth trap"**, and overcoming it is vital for **avoiding the middle-income trap** and **ensuring equitable development**.

2. Current State of the Indian Economy (2025 Snapshot)

Indicator	Status
GDP Growth	Projected at **6.2% (2025)** and **6.3% (2026)** – highest among major economies (IMF)
Forex Reserves	USD **688.13 billion**, close to record high
Unemployment	**4.9% overall**; **rural 4.2%**, **urban 6.7%** (2024 data)
Infrastructure	Operational airports: **74 (2014) → 159 (2025)**
Manufacturing CU	Capacity utilisation at **75.3%**, indicating strong demand

3. Key Challenges to Achieving Higher Growth

🔻 **1. Declining Investment-to-GDP Ratio**

- Fell from **39-42% (2006–2010)** to **33% (2023)**
- **Private investment** dropped from **18%** to **9.8%**
- **Job creation slowed** as employment elasticity declined from **0.44 to 0.21**

🔻 **2. Fiscal Constraints**

- **25% of government revenue** goes to **interest payments**
- Low **tax-to-GDP ratio (11.7%)** limits spending on infrastructure, health, and education

🔻 **3. Trade & Infrastructure Bottlenecks**

- **Logistics cost**: 14–18% of GDP (vs. 8% global benchmark)
- **Export-to-GDP ratio** stagnant at **19.5%** due to tariffs, weak FTAs, and slow reforms

🔻 **4. Socio-Institutional Inequality**

- Top **10% own 77% of wealth**, bottom 50% earn **only 13%** of national income
- India ranks **96th on the Corruption Perceptions Index (2024)**

🔻 **5. External Shocks**

- Vulnerability to **oil prices**, **geopolitical tensions**, and **global demand dips**
- Heavy reliance on **foreign investment and global trade cycles**

4. Key Drivers of Growth for India

✅ **1. Domestic Demand & Consumption**

- **Private consumption** rose by **6.9% in Q3 FY25**
- Rural FMCG sales up **4% (Apr–Jun 2024)**, driven by farm output and schemes

✅ **2. Infrastructure Push**

- **₹11.21 lakh crore** allocated for **capital expenditure (FY26)**
- Driven by **NIP, Gati Shakti, Bharatmala**
- Capex growth at **38.8% CAGR (FY20–FY24)**

✅ **3. Digital Economy & Fintech**

- Digital economy at **11.74% of GDP (2022-23)**
- **UPI** hit a record **₹23.48 lakh crore** in Jan 2025

✅ **4. Manufacturing & PLI**

- Electronics exports: **USD 23.6 billion** in FY23
- Mobile phones: 43% of the sector's exports
- **China+1 strategy** is pushing global firms to invest in India

✅ **5. Services Sector**

- **Services exports** grew **12.8% in FY25** vs. 5.7% in FY24
- Strength in **IT, fintech, healthcare, consulting**

✅ **6. Green Growth**

- **Renewables** reached **203.18 GW (Oct 2024)** = 46.3% of installed capacity
- Target: **USD 8 billion** green hydrogen market by 2030

✅ **7. Macro Stability**

- **Fiscal deficit** to decline to **4.9% of GDP (FY25)**
- **Retail inflation** eased to **4.9%**, though food inflation remains elevated (8.4%)

5. Strategy for Accelerating and Sustaining 8%+ Growth

🔧 **A. Boost Private Investment & Job Creation**

- Focus on **labour-intensive sectors**: Textiles, leather, food processing
- **Zero-duty imports** on key inputs
- **Sector-specific FDI incentives** (e.g., Germany in leather, Taiwan in semiconductors)

📈 **B. Tax and Fiscal Reform**

- Raise **tax-to-GDP to 15%** via base broadening and phasing out exemptions
- **Disinvest strategically** to lower debt and fund infrastructure
- Improve **public spending efficiency** through outcome-based monitoring

🌐 **C. Expand Trade and Export Share**

- Target **25% export-to-GDP** ratio
- Fast-track **FTAs with EU, US, UK**
- Eliminate **non-tariff barriers (e.g., QCOs)**
- Encourage **export-oriented FDI** in MSMEs, electronics, and agri-processing

6. Measures to Sustain Growth Amid Global Uncertainty

- **Diversify trade partners** to reduce reliance on any single region
- Build **resilient supply chains** through domestic manufacturing
- **Expand social safety nets** to cushion consumption dips
- Strengthen **institutional reforms**: Judiciary, bureaucracy, anti-corruption
- Promote **skilling, upskilling, and women's workforce participation** (currently at ~24%) to unlock demographic dividend

7. Conclusion: A Roadmap for High-Income India

India's potential to grow at **8%+** annually is real but **contingent on structural reforms**, **productive investments**, and **inclusive strategies**. Breaking the 6% trap requires more than fiscal push—it demands **institutional efficiency**, **human capital development**, and **globally competitive exports**.
With a **strategic policy mix**, India can avoid the **middle-income trap** and transform into a **high-income, inclusive, and resilient economy** by the mid-21st century.

Digital Banking Units in India: Promise, Progress, and the Path Forward

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Banking Sector & NBFCs | Inclusive Growth | Infrastructure in Financial Sector**
✅ **GS Paper 2 – Government Policies & Interventions | E-Governance | Welfare of Vulnerable Sections**

1. Why in News?

- India's **Digital Banking Units (DBUs)**, launched in **2022** to promote **digital financial inclusion**, have shown limited expansion due to **operational challenges, poor planning**, and **low adoption** in rural areas.
- These issues have triggered a national conversation on the **effectiveness and sustainability** of DBUs.

2. What is a Digital Banking Unit (DBU)?

Feature	Description
Launched In	2022 (75 DBUs across 75 districts for 75 years of independence)
Objective	To provide **end-to-end digital banking services** in remote areas
Set Up By	**Scheduled Commercial Banks (SCBs)** – no RBI approval needed (except in restricted areas)

Key Infrastructure	Self-service kiosks, **ATMs**, **cash recyclers**, **interactive teller machines**, **e-KYC services**, **passbook printers**, etc.
RBI Guidelines	DBUs must be **physically separate from bank branches**, with **dedicated staff and digital support systems**

🔹 **DBUs vs. Digital Banks**

Digital Banking Units (DBUs)	Digital Banks
Extensions of existing banks	Licensed as standalone digital banks
Offer limited services in physical locations	Provide **end-to-end digital banking** with full legal identity
Governed by existing bank's structure	Independent legal and balance sheet entity
Limited innovation and competition	More scope for innovation and competition

3. Significance of DBUs in Financial Inclusion

- **Bridge the digital divide** in banking services
- Extend government schemes like **PMJDY**, **PMSBY**, **APY**, **PMJJBY**, **UPI**, and **DBT** to rural citizens
- Support **SHGs, MSMEs, gig workers**, and **rural entrepreneurs** through digital credit and insurance
- Reduce transaction costs and dependency on brick-and-mortar branches

4. Challenges Hindering the Effectiveness of DBUs

Challenge	Details
Hasty Implementation	Banks were given only **45 days** to set up DBUs, with **little local demand analysis**
High Operational Costs	Infrastructure like interactive teller machines, physical setup, and manpower is costly, especially in **low-traffic areas**
Low Financial & Digital Literacy	Limited tech familiarity among **rural residents and the elderly**; absence of human assistance hinders engagement
Connectivity Issues	**Unstable internet and power outages** in remote areas disrupt digital transactions
Inadequate Local Integration	Lack of coordination with **panchayats, SHGs, and local institutions** lowers trust and usage

5. Related Government Initiatives

- **Pradhan Mantri Jan Dhan Yojana (PMJDY)** – Bank accounts for all
- **UPI**, **BHIM**, **AEPS** – Promote digital payments
- **PMSBY**, **PMJJBY**, **APY** – Social security and insurance
- **PM Mudra Yojana** – Micro-loans for small entrepreneurs
- **PMGDISHA** – Digital literacy for rural households
- **BharatNet** – Internet infrastructure for Gram Panchayats

6. Steps to Strengthen DBUs and Ensure Long-Term Impact

🧭 **1. Demand-Driven Expansion**

- Adopt **decentralised, data-based models** to set up DBUs in areas with **actual demand and digital readiness**
- Use **district-level digital inclusion indices** for targeted rollout

📶 **2. Infrastructure Enhancement**

- Use **BharatNet** to ensure stable connectivity
- Install **solar panels and backup power** systems for uninterrupted operations

🧠 **3. Strengthening Digital & Financial Literacy**

- Leverage **PMGDISHA**, NGOs, and SHGs to train users
- Special focus on **women, elderly, and first-time users**
- Introduce **digital onboarding workshops** with multilingual support

🏦 **4. Human-Centric Support**

- Appoint **local facilitators** to assist users with onboarding, KYC, and grievance redressal
- Develop **voice-guided kiosks** and **vernacular interfaces**

🛡️ **5. Expand Financial Products**

- DBUs should enable:
  - Enrolment in **PMSBY, PMJJBY, and APY**
  - Access to **e-Mudra loans**, MSME credit lines
  - Insurance and pension services for informal sector workers

🛠️ **6. Monitoring and Impact Evaluation**

- Periodic **third-party audits** to assess DBU effectiveness
- Introduce **real-time dashboards** for usage tracking and feedback

7. Conclusion

Digital Banking Units have the **potential to transform rural banking** by making financial services **accessible, paperless, and inclusive**. However, to **move from intent to impact**, India must focus on **bottom-up planning, capacity building, robust infrastructure**, and **human support systems**.
Only then can DBUs fulfill their promise of **bridging the last-mile gap** in financial inclusion.

Bond Forwards: A New Tool in India's Interest Rate Derivatives Market

📌 **Syllabus Mapping:**
✅ ***GS Paper 3*** **– Indian Economy: Monetary Policy, Government Securities, Banking and NBFC Sector, Capital Market Reforms**

1. What are Bond Forwards?

Feature	Description
Definition	A **customized forward contract** where two parties agree to **buy/sell government bonds** at a predetermined price on a future date.
Underlying Asset	**Government securities (G-Secs)** – including **Central Government Bonds** and **State Development Loans (SDLs)**.
Settlement	**Physical delivery** of the bond (unlike Forward Rate Agreements which are cash-settled).
Nature	**Over-the-counter (OTC)** agreements tailored to investors' needs.

2. Purpose and Significance

- ✅ **Hedging Tool**: Helps **long-term investors** (e.g. insurance companies, pension funds) **manage interest rate risk**.
- ✅ **Liquidity Enhancement**: Enhances depth in the **bond derivatives market**.
- ✅ **Better Cash Flow Planning**: Offers predictability in future bond prices and yields.
- ✅ **Market Development**: Complements India's growing **government securities** market infrastructure.

3. Comparison with Other Interest Rate Derivatives

Feature	Bond Forwards	Forward Rate Agreements (FRAs)
Underlying Asset	Government Bonds (e.g., SDLs)	Interest Rates
Settlement	Physical Delivery	Cash Settled
User Preference	Long-term investors	Short-term speculation/hedging
Regulatory Framework	Regulated under RBI norms	Largely unregulated in India

4. Market Implications

- 🔷 **State Development Loans (SDLs)** to gain traction:
  - SDLs with **10–15-year tenure** offer **higher yields** than central bonds.
  - Example: SDL yield ~**6.71%**, while Central G-Sec ~**6.41%**.
- 🔷 This yield spread makes SDLs **more attractive** for forward contracts.

5. Eligible Participants

Can Participate	Excluded Entities
✅ **Scheduled Commercial Banks (SCBs)**	❌ Small Finance Banks (SFBs)
✅ **Primary Dealers (as market makers)**	❌ Payment Banks
✅ **Institutional Investors (e.g., LIC, Mutual Funds)**	❌ Local Area Banks (LABs), Regional Rural Banks (RRBs)
✅ **Non-Retail Users under FEMA (Debt Instruments), 2019**	

6. Regulatory Framework

- 🏛️ **Issued by**: Reserve Bank of India (RBI)
- 📝 **Legal Backing**: Under **Foreign Exchange Management (Debt Instruments) Regulations, 2019**
- 🎯 **Objective**: Strengthen interest rate derivative ecosystem aligned with **G-Sec market reform agenda**

⬅ END Conclusion

Bond forwards mark a **progressive reform in India's fixed-income market**, enabling institutional investors to hedge risks and plan finances more efficiently. By bringing **physical settlement and regulatory oversight**, RBI aims to deepen the **derivatives ecosystem**, attract long-term capital, and **enhance SDL liquidity**—vital for federal financing and capital market development.

India's Gig Economy

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Development & Welfare of Vulnerable Sections, Government Policies & Interventions**
✅ **GS Paper 3 – Employment, Inclusive Growth, Digital Economy**

1. Why in News?

A recent meeting by the **Gig Workers Association** flagged key concerns about **low wages**, **lack of social protection**, and **legal vulnerability** of India's gig workers. It advocated for **minimum wages**, **tripartite welfare boards**, and **stronger legal safeguards**.

2. What is the Gig Economy?

- **Definition (Labour Codes, 2019):** A gig worker performs work outside the traditional employer-employee relationship.
- **Nature of Work:** Short-term, task-based, often mediated through **digital platforms** (e.g., Uber, Swiggy, Urban Company).
- **Status in India:**
  - **7.7 million gig workers (2020–21)** – projected to rise to **23.5 million by 2029–30**.
  - Concentrated in **medium-skilled sectors** – logistics, delivery, app-based services.

3. Growth Drivers of India's Gig Economy

Factor	Description
Digital Penetration	~936 million internet users, smartphone surge
E-Commerce Boom	Growth of logistics, content, and delivery services
Youth Preferences	Flexibility and project-based work are attractive
Low Entry Barriers	High unemployment and weak formal job creation
AI and Automation	Predictive analytics, AI enhance task allocation efficiency

4. Significance of the Gig Economy

- **Employment Generation:**
  By **2030**, can create **90 million jobs**, contribute **1.25% to GDP**, and comprise **4.1% of the workforce**.
- **Women Empowerment & Inclusion:**
  Flexible work schedules enable **workforce participation for women** and differently abled.
- **Boost to Informal Sector:**
  Platforms help integrate informal workers (e.g., drivers, vendors) into the **digital economy**.
- **Entrepreneurship Opportunities:**
  Freelancers and micro-entrepreneurs find new markets via platforms.

5. Major Challenges Facing Gig Workers in India

Issue	Description
Legal Exclusion	No access to **minimum wages, sick leave, maternity benefits**
Social Security Gaps	**Code on Social Security, 2020** remains unimplemented in most states
Algorithmic Exploitation	App-based ratings, opaque algorithms determine work and earnings
Income Instability	**Rs 15k–20k/month** (Fair Work India, 2023); 90% lack savings (NITI Aayog, 2024)
Delayed Payments	Over **25% face irregular wages**, affecting financial well-being
Gender Bias	Women face **harassment, wage disparity, lack of support systems**

6. Government Initiatives

- **Code on Social Security, 2020** – Provides a framework for gig/social security boards
- **e-Shram Portal** – Registers informal workers for social benefits
- **PM Shram Yogi Maandhan** – Voluntary pension scheme for unorganized workers
- **Rajasthan Gig Workers' Act, 2023** – 1st state law to mandate gig worker registration and welfare boards

7. Global Practices for Gig Worker Protection

Country	Measure
UK	*Uber drivers reclassified as workers*, entitled to minimum wage and paid leave
California (USA)	*AB5 Law* – limits use of independent contractors
Netherlands	Gig workers can join **collective bargaining units**
Spain	*Rider Law* – mandates platform riders be treated as employees

8. The Way Forward

A. Strengthen Legal and Policy Framework

- Implement **Labour Codes** with **tripartite welfare boards** (state & central level).
- Redefine "worker" to include platform-based and part-time workers.
- Ensure **minimum wage guarantees** and **mandatory insurance coverage**.

B. Build a Portable Benefits System

- Create **Universal Digital IDs** (via e-Shram) to link gig workers to:
  - Health insurance
  - Maternity leave
  - Pension (through PM-SYM)

C. Ensure Transparency and Accountability

- Mandate **clear algorithm disclosures** from platforms.
- Establish **redressal mechanisms** for unjust deactivations or wage disputes.

D. Upskilling and Digital Inclusion

- Collaborate with Skill India, NSDC to **upskill gig workers** in digital tools, customer service, and financial literacy.
- Special focus on **Tier-2/3 cities** and **rural areas**.

E. Gender-Sensitive Safety Mechanisms

- Introduce **panic buttons**, secure routes, and **anti-harassment grievance cells** for female gig workers.
- Provide **childcare support**, especially for single mothers.

F. Expand Platform Accountability

- Encourage platforms like **Swiggy, Zomato, Flipkart** to offer:
  - **Rest facilities**
  - **Protective gear**
  - **Insurance & accident coverage**

9. Conclusion

The gig economy in India offers **immense potential** to reshape employment, especially for youth, women, and rural workers. However, to prevent **digital exploitation**, India must ensure **worker-centric governance**, **equitable platform practices**, and **robust welfare systems**.

AGRICULTURE

Enhancing Agricultural Diversification in India

📌 **Syllabus Mapping:**
✅ **GS Paper 1 – Agricultural Resources**
✅ **GS Paper 3 – E-Technology in the Aid of Farmers | Agricultural Reforms | Food Security**

1. Why in News?

- Recent data reveals a **continued expansion in rice and wheat cultivation**, particularly in **Punjab, Telangana, and Madhya Pradesh**, while **acreage under pulses, oilseeds, and cotton** has declined.
- The trend raises concerns about **monoculture**, **soil health**, **water stress**, and **nutritional security**, prompting calls for **agricultural diversification**.

2. Trends in Crop Cultivation: A Skewed Landscape

Crop	State(s)	Acreage Trend (2015–2025)
Rice	Punjab ↑ 9%, Telangana ↑ 348%, MP ↑ 92%	
Wheat	MP ↑ 32%	
Cotton	Punjab ↓ 71%, Telangana ↓ 23%	
Chickpea (Chana)	MP ↓ 34% (from 30.2 to 20.1 lakh ha)	
Soybean	MP ↓ 2.2% (peak: 66.7 lakh ha in 2020–21, now 57.8 lakh ha)	

3. Why Are Rice and Wheat Dominant?

🔹 **1. MSP Procurement System**
• Assured procurement at **Minimum Support Price (MSP)** incentivizes cereal production over other crops.
• Ensures income stability and **reduced market risk**.

🔹 **2. Strong Irrigation Infrastructure**
• Rice and wheat benefit from **canal and groundwater irrigation**, reducing monsoon dependence.

🔹 **3. Superior R&D and Genetic Gains**
• **ICAR** innovations like:

- **Kamala Rice (Samba Mahsuri)**: 450–500 grains/panicle, 15–20 days earlier maturity
- **Pusa DST Rice 1**: Improved salinity, heat, and drought resistance
- **Green Revolution Varieties**: Wheat yields increased from 1.5 to 3.8 tonnes/hectare

🔹 **4. Policy and Infrastructure Bias**
• Government schemes like **PM-KISAN**, **fertilizer subsidies**, and **mandi procurement systems** disproportionately benefit rice-wheat growers.

🔹 **5. High Demand & Utilization**
• Staple role in **Public Distribution System (PDS)**, **Mid-Day Meals**, and **welfare schemes** ensures consistent demand.

4. What Are the Implications of Over-Reliance on Rice and Wheat?

Concern	Impact
Nutritional Imbalance	Dominance of carbohydrate-rich cereals → **protein & micronutrient deficiencies**
Soil Degradation	**Salinity, nutrient imbalance**, and over-fertilization
Water Scarcity	Rice requires 4,000–5,000 litres of water/kg grain → depletion in **Punjab, Rajasthan, Haryana**
Market Distortions	**Neglect of pulses, oilseeds**, leading to **import dependency** (e.g., 60% edible oil imported)
Regional Disparity	Benefits concentrated in **northwestern India**; tribal and rainfed regions excluded
Monoculture Risks	Increases **susceptibility to pests, disease, climate shocks**

- Example: **Wheat blast** caused by *Magnaporthe oryzae Triticum*

5. Government Initiatives Supporting Crop Diversification

🔹 **National Missions & Schemes**

- **Rashtriya Krishi Vikas Yojana (RKVY)**

- **Mission for Integrated Development of Horticulture (MIDH)**
- **National Food Security Mission (NFSM)**
- **National Mission on Oilseeds & Oil Palm (NMOOP)**
- **National Millet Mission**
- **Mission for Self-Reliance in Pulses**

6. What Measures Can Enhance Agricultural Diversification?

🔄 **Policy & Institutional Reforms**

• Extend **MSP and procurement** to **millets, pulses, oilseeds, and horticulture**
• Implement **Price Deficiency Payment Scheme (PDPS)** for price compensation
• Strengthen **Farmer Producer Organizations (FPOs)** and **decentralized mandis**

🌾 **Promote Climate-Resilient Crops**

• Boost **millet cultivation** (jowar, bajra, ragi) under **International Year of Millets** momentum
• Promote **drought-resistant pulses, oilseeds**
• Expand **horticulture clusters** and floriculture zones

📈 **Strengthen Market Linkages**

• Scale up **e-NAM** for digital price discovery
• Encourage **contract farming, value chains, agri-startups**
• Promote **exports of spices, herbs, and organic produce**

🏗️ **Infrastructure and Tech Support**

• Support via **PM Kisan SAMPADA Yojana** for cold chains, warehouses, and food processing
• Promote **Kisan Drones**, mechanization, and digital extension services

💸 **Financial Incentives**

• Broaden **PM Fasal Bima Yojana** to cover non-cereal crops
• Lower **credit interest rates** for pulses, oilseeds, horticulture
• Conduct farmer training through **Skill India**

🌍 **Region-Specific Interventions**

Region	Strategy
Punjab–Haryana	Shift to **cotton, maize, agroforestry** to reduce water stress
Eastern India	Promote **flood-resistant rice**, **aquaculture**, and **pulses**
Rainfed Areas	Focus on **dryland farming**, **millets**, and **livestock integration**

7. Conclusion: Redesigning the Agricultural Future

India's current cropping pattern, heavily skewed toward rice and wheat, is **ecologically unsustainable**, **nutritionally imbalanced**, and **economically limiting**.
A **strategic shift toward diversified agriculture** through policy support, R&D investment, infrastructure, and tailored regional planning can:
• **Enhance farm incomes**
• **Promote nutritional security**
• **Ensure long-term ecological sustainability**

Agricultural diversification is not just a reform—it is **imperative for inclusive rural transformation** and **climate-resilient food systems**.

Minimum Support Price (MSP) for Jute: Safeguarding Farmers' Income

📌 **Syllabus Mapping:**
✅ ***GS Paper 3*** **– Cropping Patterns | Agricultural Pricing | Agricultural Marketing**

1. Why in News?

The **Jute Corporation of India (JCI)** has increased the **Minimum Support Price (MSP)** for **jute for the 2025–26 crop year**, aiming to **prevent distress sales** and provide assured income to jute farmers.

2. About Jute in India

- **Golden Fibre:** Jute is known as the **"golden fibre"** due to its natural luster and economic value.
- **Second Most Important Cash Crop:** After **cotton**, jute is India's most significant cash crop in terms of area and usage.
- **Top Producer:** India is the **largest jute producer** globally.
- **Major Jute-Growing States:**
  - **West Bengal** (dominates with ~75% of output)
  - **Assam**
  - **Bihar**
  - **Odisha** and **Tripura** (to a lesser extent)

3. Ideal Conditions for Jute Cultivation

Parameter	Requirement
Temperature	17°C to 41°C
Rainfall	>120 cm, well-distributed
Soil	Well-drained alluvial soil
Humidity	40%–90%

4. What is MSP?

- **Definition:** MSP is the **minimum price** at which the **government procures crops** from farmers to ensure a fair return, regardless of market fluctuations.
- **Purpose:** To protect farmers from sharp price falls and **discourage distress sales**.
- **Announced By:**
  - **Cabinet Committee on Economic Affairs (CCEA)**
  - Based on recommendations from the **Commission for Agricultural Costs and Prices (CACP)**
- **Nature:** It is **not legally enforceable**, but operationalized via government procurement agencies.

5. About the Jute Corporation of India (JCI)

Feature	Details
Parent Ministry	Ministry of Textiles
Function	Acts as a **price support agency** for raw jute procurement
Key Role	Ensures MSP operations **without any quantity restrictions** from farmers
Additional Role	Also supplies raw jute to mills during shortages to stabilize the market

6. Significance of MSP for Jute

- **Reduces Farmer Vulnerability:** Helps farmers resist selling to middlemen at lower prices.
- **Promotes Cultivation:** Stable prices encourage continued jute farming.
- **Sustains Jute Industry:** Ensures raw material supply for India's **jute-based textile and packaging sectors**.
- **Supports Employment:** Jute farming and processing are major rural employment sources in eastern India.

END Conclusion

The MSP hike for jute reflects the government's commitment to **income security for farmers**, particularly in eastern India. Strengthening support mechanisms like the **JCI's procurement operations** can empower jute growers and ensure **sustainable agricultural livelihoods**.

ETHICS, SOCIETY AND SOCIAL ISSUES

Youth and Social Media

📌 **Syllabus Mapping:**
✅ **GS Paper 1 – Effects of Globalization on Indian Society**
✅ **GS Paper 2 – Issues Related to Children | Government Policies and Interventions**
✅ **GS Paper 3 – Cyber Security | Information Technology | Social Media Governance**

1. Why in News?

- The **growing impact of social media on youth identity and mental health** has raised serious concerns.
- As online validation increasingly defines young people's **sense of self-worth**, mental health issues like anxiety and low self-esteem are rising—calling for **urgent policy and social intervention**.

2. Role and Significance of Social Media in India

🧠 **Societal Influence**

- **Democratizes information**: Empowers citizens to share real-time updates and voice dissent (e.g., doctors during COVID-19 oxygen shortage).
- **Civic engagement**: Used by politicians for **grievance redressal and campaigning**, as seen in **Lok Sabha Elections 2024**.
- **Amplifies marginalized voices**: Movements like **#MeTooIndia** emerged through social platforms.

💹 **Economic Transformation**

- **Digital economy support**: Boosts **e-commerce, gig economy**, and **micro-entrepreneurship**.
- **Creator economy boom**: Grew from **962,000 creators (2020)** to **4.06 million (2024)**, now supports **8% of the workforce**.
- **Startup visibility**: Brands like **boAt** and **Patanjali** gained traction through **social media marketing**.
- **Ease of digital transactions**: UPI, WhatsApp Pay simplify small transactions and promote formalization.

3. Legal and Regulatory Framework in India

Law / Judgment	Purpose
IT Act, 2000	Core legal framework for electronic communication and social media regulation
Intermediary Guidelines 2021	Mandates platforms to remove harmful content, protect privacy, ensure transparency
DPDP Act, 2023	Protects **digital personal data**, restricts misuse, mandates informed consent
Shreya Singhal v. UOI (2015)	Struck down **Section 66A** for curbing free speech online
K.S. Puttaswamy v. UOI (2017)	Declared **right to privacy** as fundamental under Article 21

4. Key Concerns Associated with Social Media for Youth

Concern	Description
Mental Health Issues	Validation-seeking, FOMO, comparison lead to **anxiety, loneliness**, and **depression**
Digital Identity Crisis	Youth shape identity based on likes/followers; **real vs. virtual self** becomes blurred
Filter Bubbles	Algorithmic content limits exposure to diverse opinions, reinforces echo chambers
Parental Disconnect	Parents unaware of digital realities; teens create **fake accounts** to avoid monitoring
Child Exploitation & Pressure	Child influencers are exposed to **public scrutiny and emotional stress** prematurely
Cyberbullying & Trolling	Includes **anonymous hate**, **deepfakes**, and **child grooming**
Addiction & Misinformation	Apps exploit **infinite scroll**, causing addiction; influencers may **mislead youth** via fake endorsements (e.g., online betting)

5. Measures to Mitigate Social Media Risks for Youth

🛡️ **Policy and Platform Regulations**

- Modify **recommendation algorithms** to prioritize **educational and skill-based content** for minors
- Prohibit **behavioral profiling** and **targeted advertising** for users under 18

- Enforce **ethical design norms** to limit amplification of **harmful or adult content**

🧠 **Promoting Digital Literacy**

- Integrate **cyber safety curriculum** in schools (aligned with **NEP 2020**)
- Train **teachers and parents** to recognize online dangers and offer digital support
- Use **National Digital Literacy Mission** to widen access to responsible internet usage

📜 **Strengthening Governance**

- Implement **DPDP Act 2023** to penalize child data misuse and enforce third-party audits
- Speed up grievance redressal for **online harassment and data abuse cases**

👨‍👩‍👧 **Parental & Community Empowerment**

- Promote use of **parental control tools** like Google Family Link, Apple Screen Time
- Introduce **Teen Account features** on social platforms for minors
- Encourage **offline engagement** via sports, arts, community events

💬 **Mental Health Integration**

- Collaborate with platforms to offer tools like:
  - **Screen time alerts**
  - **Mental health check-ins**
  - **Well-being resources**
- Promote existing services: **Kiran Mental Health Helpline**, **MANAS App**, counselling in schools

6. Way Forward

Focus Area	Actions Needed
Policy	Update IT rules, enforce DPDP Act, ban exploitative ad targeting for children
Education	Embed digital literacy & emotional resilience into school pedagogy
Tech Design	Shift from engagement-maximizing to **well-being-first platform design**
Societal Role	Build collective awareness through schools, NGOs, civil society, and youth forums

7. Conclusion

The impact of **social media on youth** is both enabling and dangerous. While it fosters creativity, entrepreneurship, and community-building, it also exposes young minds to **mental stress, identity distortion**, and **cyber exploitation**.
A **balanced approach**—rooted in **regulation, education, digital ethics**, and **parental support**—is essential to ensure social media becomes a **tool for empowerment, not harm**.

Indore Becomes India's First Beggar-Free City

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Government Policies & Interventions | Welfare of Vulnerable Sections | Social Justice**
✅ **GS Paper 1 – Issues Related to Marginalized Communities**

1. Why in News?

- **Indore**, Madhya Pradesh, has been officially declared **India's first beggar-free city** under the **Bhiksha Vriti Mukta Bharat** initiative of the **Ministry of Social Justice and Empowerment**.
- The achievement has been **recognized by the World Bank** and marks a major success under the **SMILE Scheme**, especially its sub-component: **Comprehensive Rehabilitation of Persons Engaged in the Act of Begging**.

2. What is Begging and How Prevalent is it in India?

Indicator	Details
Definition	Begging includes soliciting alms through singing, selling, displaying disabilities or dependency
Population Data	• Census 2011: 4.13 lakh beggars • SECC 2011: 6.62 lakh rural households depend on begging
Top States (by numbers)	Uttar Pradesh, Bihar, Maharashtra, Madhya Pradesh

🔷 **Constitutional Basis**

- **Vagrancy**, including begging, falls under **Entry 15, Concurrent List** – both Centre and States can legislate.

🔹 **Existing Legal Framework**

- No central law criminalising or regulating begging uniformly.
- **Bombay Prevention of Begging Act, 1959** (followed by many states) criminalizes begging and defines it broadly, raising concerns over **criminalisation of poverty**.

3. What is the SMILE Scheme?

Component	Focus Area
SMILE (Support for Marginalized Individuals for Livelihood and Enterprise)	Launched in **2022** to rehabilitate **transgender persons and individuals engaged in begging**
Sub-Scheme 1	**Rehabilitation of Persons Engaged in Begging**
Sub-Scheme 2	**Empowerment of Transgender Persons**

🔹 **Objective**

- To identify, **rehabilitate with consent**, and reintegrate individuals involved in begging
- Target: **8,000 persons** to be rehabilitated from **FY 2023–24 to FY 2025–26**

4. How Did Indore Achieve Beggar-Free Status?

🛠️ **Implementation Strategy**

- Identification & profiling of beggars using **video/photo documentation**
- Empathetic **outreach by NGOs**, local bodies, **SHGs**, and **Temple Trusts**
- **Counselling, education**, skill training, and **socio-economic reintegration** of identified individuals

🤝 **Stakeholders Involved**

- **District Administration**
- **Urban Local Bodies**
- **Non-Governmental Organizations (NGOs)**
- **Community institutions**, including temples and SHGs

5. Why Is This Recognition Significant?

- First city to **institutionalize beggar rehabilitation** as part of **urban governance**
- Promotes **dignity, self-sufficiency, and inclusion** of marginalized citizens
- Serves as a **model for replication** in religious/tourist cities where begging is often visible and persistent
- Aligns with **SDG Goal 1 (No Poverty)** and **Goal 10 (Reduced Inequalities)**

6. Way Forward: Making Urban India Beggar-Free

✅ **Legislative Reforms**

- Decriminalize poverty-linked begging by repealing outdated laws
- Introduce a **comprehensive national rehabilitation policy** ensuring rights-based approach

✅ **Holistic Rehabilitation**

- Link with schemes like **PM-SVANidhi**, **Skill India**, **PMAY**, and **UDAN** for sustainable livelihood support
- Provide **psycho-social counselling**, **de-addiction**, and **housing** where needed

✅ **Community Engagement**

- Mobilize local youth, SHGs, and religious institutions for continuous follow-up
- Promote **corporate and philanthropic CSR investment** in urban rehabilitation

7. Conclusion

The recognition of **Indore as India's first beggar-free city** is a **transformative leap in urban inclusion and dignity-led rehabilitation**. This success, powered by the **SMILE scheme**, reflects a **compassionate model of governance** where poverty is met not with punishment but with opportunity, care, and empowerment.
Replicating this approach across cities can help achieve a **truly inclusive and humane urban India**.

Kendu Leaf Trade & Tribal Rights

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Welfare of SCs & STs | Government Policies & Interventions**
✅ **GS Paper 3 – Agriculture Pricing | Environmental Governance | Forest Rights Act**

1. Why in News?

- **Tribal communities in Odisha** are demanding **deregulation** of the **kendu leaf trade** to manage and sell it **independently**, invoking their rights under the **Forest Rights Act (FRA), 2006**.
- The issue brings into focus the **conflict between state monopoly laws** and **community forest rights**.

2. What is Kendu Leaf?

Feature	Description
Botanical Name	*Diospyros melanoxylon*
Common Name	Also known as **Tendu Leaf** in many parts of India
Primary Use	**Wrapper for beedis** (traditional hand-rolled cigarettes)
Category	A **nationalised Non-Timber Forest Produce (NTFP)**
Nickname	Often called "**Green Gold**" for its **economic value**

3. Economic Significance

- **Vital livelihood source** for **Scheduled Tribes, women**, and **widows**
- Provides **seasonal employment** in **collection, sorting, bundling, and sale**
- In Odisha, it contributes **~4.5–5 lakh quintals** annually (nearly **20% of India's total output**)
- **India's largest producers**:

1. **Madhya Pradesh**
2. **Chhattisgarh**
3. **Odisha**

4. Legal Framework Governing Kendu Leaves

✅ **Minor Forest Produce (MFP) – As per FRA, 2006**

- Recognised as **community-owned** produce
- Includes **kendu leaves, bamboo, sal seeds, lac, honey**, etc.

⚖️ **Forest Rights Act (FRA), 2006**

Provision	Details
Purpose	Recognises **individual and community rights** of forest-dwelling STs and OTFDs (Other Traditional Forest Dwellers)
MFP Rights	Legal right to **collect, manage, and sell NTFPs** without middlemen or state control
CFR Rights	Gram Sabhas empowered to **manage and conserve forests** through **Community Forest Resource (CFR) rights**
Legal Supremacy	**Overrides state laws** (e.g., Odisha Kendu Leaf (Control of Trade) Act) that contradict community forest rights
Consent for Land Use	Gram Sabha approval is **mandatory** before any diversion of forest land for development or commercial purposes

5. The Core Issue: Conflict of Rights

Conflict Point	Description
State Monopoly	Odisha follows the **Odisha Kendu Leaf (Control of Trade) Act**, maintaining **monopoly control over the trade**
Community Demand	Tribals seek **autonomy** to trade leaves independently via **Gram Sabha management**, as per FRA
Current System	State Forest Department handles **procurement and sale**, often criticized for **delayed payments and low rates**
Legal Tussle	Communities assert that **FRA overrides** state trade control laws, enabling them to **decide the price and buyer** directly

6. Key Demands of Tribal Communities

- **De-nationalisation** or **deregulation** of the kendu leaf trade
- **Direct market access** for collectors
- **Fair price determination** by **Gram Sabhas**
- Timely and **transparent payment systems**
- End to **state monopoly practices**

7. Way Forward

✅ **Harmonising State and Central Laws**

- Amend conflicting state laws like **Odisha Kendu Leaf (Control of Trade) Act** to align with **FRA, 2006**provisions.

✅ **Gram Sabha Empowerment**

- Strengthen **community forest governance** and provide support in **pricing, storage, marketing, and transport**

✅ **Institutional Support**

- Provide **training, infrastructure**, and **market linkages** through Tribal Co-operative Marketing Development Federation (TRIFED)

✅ **Fair Price and Timely Payments**

- Set **Minimum Support Price (MSP)** for kendu leaves, as done for other MFPs under **Van Dhan Yojana**

8. Conclusion

The demand for **kendu leaf trade deregulation in Odisha** highlights the broader struggle for **tribal autonomy and economic justice**. Empowering **Gram Sabhas** under the **Forest Rights Act** can foster **inclusive forest governance**, enhance **livelihood security**, and ensure **tribal dignity and self-determination** in natural resource management.

CSR in India

📌 **Syllabus Mapping:**
✅ ***GS Paper 1* – Society: Inclusive Growth**
✅ ***GS Paper 2* – Government Policies & Interventions, Role of NGOs**
✅ ***GS Paper 3* – Growth & Development, Corporate Governance, Social Sector Initiatives**

1. Why in News?

- As per **PRIME Database**, **CSR spending by listed companies increased by 16%** in FY 2023–24, rising to **₹17,967 crore** from ₹15,524 crore in FY 2022–23.
- Around **98% of companies fulfilled CSR obligations**, with nearly half exceeding the mandated 2% threshold.

2. Recent Trends in CSR Spending

A. Sectoral Allocation

Sector	FY 2023-24 Allocation
Education	₹1,104 crore (highest)
Healthcare	₹720 crore
Slum Development, Armed Forces Welfare, and Rural Projects	Significant decline

B. State-Wise Distribution

- **Top Recipients**: *Maharashtra*, *Rajasthan*, *Tamil Nadu*
- **Concentration**: Top 10 states received **60% of total CSR** funds.

3. What is CSR?

- **Definition**: CSR (Corporate Social Responsibility) involves **voluntary and statutory efforts** by companies to contribute to societal well-being, environmental protection, and sustainable growth.
- **Legal Mandate**: Under **Section 135 of the Companies Act, 2013**, India became the first country to mandate CSR:
  - Applies to companies with:
    - Net worth > ₹500 crore, or
    - Turnover > ₹1,000 crore, or
    - Net profit > ₹5 crore
  - Must spend **at least 2% of average net profits** of the preceding 3 years on CSR.

Eligible Areas under Schedule VII:

- Eradicating hunger and poverty
- Promoting education and gender equality
- Environmental sustainability
- Disaster relief
- PM CARES & PM National Relief Fund
- Protection of national heritage

4. Challenges in CSR Implementation

A. Geographical Imbalance

- Funds are skewed toward **industrially developed states**.
- **North-East**, **J&K**, and **UTs** receive minimal CSR due to fewer company presences.

B. Narrow Thematic Focus

- Over **75% of funds** go to education, healthcare, and rural development.
- Areas like **climate resilience**, **disaster management**, **slum development**, and **veterans' welfare** are underfunded.

C. Implementation Bottlenecks

- **Delayed approvals**, short project timelines lead to **preference for infrastructure** projects over sustainable ones.
- Lack of **community participation and contextual planning** weakens impact.

D. Monitoring and Evaluation Gaps

- Current focus is on **spending**, not **outcomes**.
- **Impact assessments are rare**, inconsistent, or poorly documented.

E. NGO Coordination Issues

- Weak **partnership frameworks**, limited **capacity-building funds**, and lack of long-term vision in collaborations.
- **Intermediaries reduce fund efficiency** and accountability.

F. Compliance Gaps

- 27 companies **did not meet spending mandates**, preferring low-risk, repetitive activities over innovative solutions.

5. Injeti Srinivas Committee (2019) – Key Recommendations

Recommendation	Purpose
Make CSR tax-deductible	Encourage participation and reduce financial burden
Allow carry-forward of unspent funds (3–5 years)	Support long-term projects
Register CSR agencies on MCA portal	Improve credibility and accountability
Mandatory impact assessment for CSR above ₹5 crore	Ensure effectiveness and measurable results
Create a CSR exchange portal	Connect donors, NGOs, and beneficiaries transparently
Align Schedule VII with UN SDGs	Balance local and national development priorities
Permit investment in social impact bonds	Innovate financing mechanisms for social outcomes
Promote social impact enterprises	Integrate profit with sustainable development goals

6. Steps to Improve CSR Outcomes

A. Regulatory Reforms

- Simplify rules and **expand scope** to include climate adaptation, heritage conservation, tech innovation.
- Recognize **innovative formats** like blended finance, social bonds, and sustainable business models.

B. Digital Platform Integration

- Develop a **centralized CSR portal** for:
  - Real-time fund tracking
  - Matchmaking between companies and grassroots organizations
  - Public disclosure of outcomes

C. Robust Audits and Evaluation

- Enforce **independent third-party audits**.

- Introduce **standardized impact metrics** (qualitative + quantitative) for comparability across sectors.

D. Foster Collaboration

- Encourage **cluster-based models** for pooled CSR funds across companies in similar industries or geographies.
- Institutionalize **Public-Private Partnerships** (PPPs) with State governments and Panchayats.

E. Incentivize Innovation and Inclusion

- Introduce **awards and recognitions** for:
  - Best CSR impact
  - Most inclusive CSR project
  - Most innovative CSR approach

F. Balanced Allocation

- Prioritize **backward regions**, **gender-responsive initiatives**, and **sustainability**.
- Include **climate-resilient infrastructure**, **slum redevelopment**, and **disaster risk reduction** in CSR portfolios.

7. Conclusion

CSR in India has evolved from a charitable act to a **legally backed development tool**. With rising corporate profits and expectations for corporate accountability, **strategic CSR** can significantly accelerate India's social and economic transformation.

The way forward lies in making CSR efforts more inclusive, impactful, transparent, and aligned with national and global goals.

Dongria Kondh Tribe

📌 **Syllabus Mapping:**
✅ ***GS Paper 2* – Welfare of SCs, STs & Vulnerable Sections, Constitutional Safeguards, Role of Gram Sabhas**
✅ ***GS Paper 1* – Indian Society: Tribal Communities and Cultural Heritage**

1. Who are the Dongria Kondh?

Feature	Description
Location	Niyamgiri Hills, **Kalahandi** and **Rayagada** districts of Odisha
Classification	*Particularly Vulnerable Tribal Group (PVTG)* under Ministry of Tribal Affairs
Language	**Kui** (Dravidian family); oral tradition without written script
Religion	Worship **Niyam Raja** (God of the Hills); animistic belief system
Cultural Practices	Podu (shifting) cultivation, forest protection, community-based rituals
Sub-groups	Kovi, Kuttia, Languli, Penga, Jharnia (*Jharnia = stream protector*)

2. Cultural and Ecological Significance

- **Eco-Spiritual Identity**: Hills are **sacred landscapes**, not just resources—Niyamgiri is seen as **living and divine**.
- **Biodiversity Stewards**: The community helps **protect biodiversity and water sources** of the Eastern Ghats.
- **Oral Heritage**: Songs and folklore encode environmental knowledge and collective memory.

3. Land Rights & Legal Victory (Vedanta Case)

Legal Milestone	Significance
Vedanta Mining Controversy	UK-based Vedanta Ltd. sought to mine bauxite in Niyamgiri for alumina refinery (early 2000s)
Resistance Movement	Tribe allied with activists, environmentalists, and legal advocates to oppose the project
2013 SC Judgment	Supreme Court upheld the **Gram Sabha's constitutional authority** to decide mining approval
Outcome	12 Gram Sabhas unanimously **rejected** the project – a major win for tribal rights

🔹 **Constitutional Basis**:

- Article **243**: Empowers **Gram Sabhas** in Scheduled Areas under PESA Act, 1996
- Article **21**: Right to life includes the right to a dignified cultural existence

4. What is a PVTG?

Criteria for Classification	Description
Pre-agriculture level technology	No modern agricultural practices
Stagnant/Declining population	Limited growth due to isolation or malnutrition
Low literacy levels	Education often restricted to oral traditions

Economic backwardness	Subsistence economy, dependence on forests

- **Total PVTGs in India**: 75
- **Top States**: Odisha (13), Andhra Pradesh (12), Chhattisgarh (7), Jharkhand (9)

5. Geographical Significance: Niyamgiri Hills

- **Eastern Ghats** biodiversity hotspot
- **Bordered by**: Karlapat and Kotgarh Wildlife Sanctuaries
- Source of rivers and streams feeding nearby regions
- Home to unique flora-fauna including **slender loris**, **Indian pangolin**, and endemic plants

6. Challenges and Way Forward

Challenges	Recommendations
Encroachment by mining and infrastructure	Strict implementation of **Forest Rights Act (2006)**
Limited access to healthcare and education	Establish **community health workers and mobile schools**
Exploitation by intermediaries	Encourage **direct market linkages** for forest produce
Cultural erosion	Recognize and **document tribal heritage and oral literature**

END Conclusion: Symbol of Tribal Assertion

The **Dongria Kondh** embody **ecological wisdom**, **tribal self-determination**, and the assertion of **constitutional rights** in India's democratic framework. Their victory against mining giants not only **strengthens the PESA and FRA frameworks**, but also **sets a global precedent for indigenous resistance rooted in culture and constitutional law**.

Their legacy calls for policies that move beyond token inclusion to **actual empowerment**—where **tribes are not just beneficiaries but custodians and decision-makers of their land and lives**.

Child Wellbeing in an Unpredictable World

📌 **Syllabus Mapping:**
✅ **GS Paper 2** – Issues Related to Children, Government Policies & Interventions
✅ **GS Paper 3** – Impact of Social Media, Globalization & Public Health

1. Why in News?

- A **UNICEF report** titled *"Child Wellbeing in an Unpredictable World"* reveals a global **decline in child wellbeing**, especially in academic performance, mental health, and physical health, **post-Covid-19**.

2. Global Impact of Covid-19 on Child Wellbeing

Academic Setbacks

- **School closures (3–12 months)** caused massive learning disruptions.
- Nearly **8 million 15-year-olds** lacked basic literacy/numeracy skills in 2022.
- Countries like **Colombia, Bulgaria, Mexico** saw >66% children below skill levels.

Mental Health Decline

- Life satisfaction dropped in **14 of 32 countries**; **Japan** saw a rise.
- Increased isolation, uncertainty, and screen time affected emotional well-being.

Physical Health Concerns

- Rise in **obesity and overweight** in **14 of 43 countries**.
- Decline in physical activity due to lockdowns and poor diets.

Top Performers in Child Wellbeing

- **Netherlands**, **Denmark**, and **France** lead across **mental, physical, and skill-based** wellbeing.

3. Status of Child Wellbeing in India

Mental Well-being

- **50 million** children suffer from mental issues; **80–90% untreated**.

- Suicide is **4th leading cause of death** among **15–19 years** group.
- Social stigma, lack of access, and poor awareness prevail.

Physical Health

- **Malnutrition & Obesity** co-exist.
  - India may have **27 million obese children by 2030** (UNICEF 2022).
- **Infant Mortality Rate (IMR):** Dropped from 39 (2014) → 27 (2021) per 1000 live births.
- **U5MR:** Dropped from 45 → 31 (2014–2021).

Academic Skills

- GER: **93% primary**, **77.4% secondary**.
- But **learning outcomes remain weak**, especially post-pandemic.
- **Learning Poverty Rate** rose to **70%** in 2023 (from 55% in 2019).

Social Skills

- **58% of teachers** reported **loss of social abilities** in children post-Covid (Smile Foundation Survey).

4. Causes of Declining Child Wellbeing

A. Economic Inequality

- Poor access to food, healthcare, education.
- **Rural/tribal children** face disproportionate disadvantages.

B. Social Factors

- **Gender bias, child marriage**, caste discrimination.
- **Migrant and refugee children** excluded from formal systems.
- Academic stress and social media addiction driving **anxiety, depression**.

C. Digital Divide

- Only **38% Indian households** digitally literate.
- Digital schooling excluded rural kids; rise in **cyberbullying, addiction**.
- **NCRB 2022:** ~1800 cybercrimes against children.

D. Climate Change

- **Extreme heat, air pollution, water scarcity** endanger child health.
- **Displacement and food insecurity** disrupt education and stability.

5. Measures to Improve Child Wellbeing in India

A. Strengthening Nutrition and Health

- Expand **ICDS** for nutrition + early education.
- Scale up **Poshan Abhiyaan**, **Mission Indradhanush**, and **Janani Suraksha Yojana**.

B. Mental Health Interventions

- Introduce **mental health programs in schools** using WHO's **mhGAP** model.
- Strengthen **Childline 1098**, and provide psychological aid.

C. Addressing Digital Divide

- Implement **National Digital Literacy Mission** (as part of NEP 2020).
- Train teachers/parents to recognize **online risks**.

D. Reducing Inequality and Abuse

- Strengthen **Beti Bachao Beti Padhao**, **direct cash transfers**, and **POCSO Act** enforcement.
- Promote **community vigilance** and fast-track child abuse cases.

E. Learning from Global Best Practices

- Replicate **Brazil's Bolsa Família model** – linking cash transfers to health & education.
- Adopt UNICEF-World Bank's **'First 1000 Days'** strategy for child development.
- Integrate **climate-resilient strategies** in child welfare programs.

6. Conclusion

UNICEF's report is a **timely warning**. India must adopt a **comprehensive, child-centric approach** to bridge gaps in **education, mental health, digital inclusion**, and **nutrition**. Without bold reforms and sustained investments, we risk the well-being of an entire generation.

GEOGRAPHY AND DISASTER

Geostrategic Passes Facilitating the Kailash Mansarovar Yatra

📌 **Syllabus Mapping:**
✅ **GS Paper 1 – Indian Culture: Pilgrimages and Religious Geography**
✅ **GS Paper 2 – International Relations: India-China Border Issues, Bilateral Agreements**
✅ **Prelims Focus – Himalayan Passes, Kailash Mansarovar Yatra, Strategic Routes**

1. Why in News?

- After a **five-year suspension**, the **Kailash Mansarovar Yatra (KMY)** is set to resume in 2025.
- The pilgrimage was halted by **China in 2020**, citing the **Covid-19 pandemic** and tensions along the **Line of Actual Control (LAC)**.
- Its resumption holds **religious**, **diplomatic**, and **geostrategic** significance for India.

2. About Kailash Mansarovar Yatra (KMY)

🔹 **Organised By:**
• **Ministry of External Affairs (MEA), Government of India**

🔹 **Pilgrimage Site:**
• **Mount Kailash (6,638 m)** and **Lake Mansarovar (4,600 m)**
• Located in the **Tibet Autonomous Region (TAR)** of China

🔹 **Religious Significance:**
• **Mount Kailash** is revered in **Hinduism** (abode of Lord Shiva), **Buddhism** (associated with Demchok), **Jainism** (as Mount Ashtapada), and **Bon** traditions
• Lake Mansarovar is believed to have been created by **Lord Brahma** and is considered a purifier of sins
• Source of major rivers: **Brahmaputra, Indus, Sutlej, Karnali (Ghaghara)**

🔹 **Operational Since:**
• **1981**, as a symbol of **cross-border religious diplomacy** and cultural ties with Tibet

3. Operational Routes Connecting the Yatra (as of 2025)

Pass	Location	Features	Significance
Lipulekh Pass	**Uttarakhand**	Shortest route (approx. 50 km from border), but involves a **200 km trek** over rugged terrain	First route opened for India-China border trade (1992); strategically located in the tri-junction of India-Nepal-China
Nathu La Pass	**Sikkim**	Fully **motorable route** (~1,500 km), no trekking needed	Part of ancient **Silk Road**; connects Sikkim to China's TAR; opened for pilgrims in 2015
Shipki La	**Himachal Pradesh**	No current KMY route, but opened for trade in 1994	Important for India-China trade and surveillance
Mount Kailash	**TAR, China**	Iconic black diamond-shaped peak	Sacred to four major religions and source of transboundary rivers

4. Strategic Significance of the Routes

🔹 **Geopolitical Context**
• Resuming KMY reflects an attempt to **stabilize India-China people-to-people ties** amidst ongoing LAC issues
• **Lipulekh Pass** lies near the **India-Nepal-China tri-junction**, where cartographic disputes have emerged (e.g., **Kalapani-Limpiyadhura region**)
• **Nathu La Pass** is crucial for **India's eastern border management** and **economic diplomacy** with the TAR

🔹 **Border Trade and Surveillance**
• The routes double as **logistical corridors** for **border trade, military access**, and **strategic monitoring**
• China's infrastructure expansion in TAR makes Indian access to these passes vital for **border parity**

5. Environmental and Logistical Challenges

Challenge	Description
Terrain and Climate	High altitude, sub-zero temperatures, and thin oxygen levels make the journey physically demanding
Medical Support	Needs robust infrastructure for **altitude sickness management**, **emergency evacuation**, and **logistical coordination**
Bilateral Diplomacy	The yatra depends on China's annual clearance and **bilateral coordination mechanisms**

6. Conclusion: Religious Diplomacy Meets Strategic Necessity

The **Kailash Mansarovar Yatra** is not merely a religious pilgrimage but a vital pillar of **India's strategic geography** and **diplomatic outreach**. The reopening of the yatra via **Lipulekh and Nathu La Passes** reaffirms India's presence in the **Himalayan frontier**, while promoting **cultural soft power** and **border infrastructure development**.

As geopolitical contestations continue, maintaining access to these **geostrategic Himalayan passes** remains crucial for both **national security** and **spiritual continuity**.

Tapti Basin Mega Recharge Project

📌 **Syllabus Mapping:**
✅ **GS Paper 1 – Physical Geography: River Systems & Drainage**
✅ **GS Paper 3 – Water Resources | Inter-State Coordination | Sustainable Development**

1. Why in News?

- **Madhya Pradesh** and **Maharashtra** have signed an **MoU** for the joint implementation of the **Tapti Basin Mega Recharge Project**—set to become the **world's largest groundwater recharge scheme**.
- The project aims to ensure **optimal inter-state water sharing** and address **groundwater stress** in critical districts across both states.

2. What is the Tapti Basin Mega Recharge Project?

🔹 **Overview**
• A **joint inter-state groundwater recharge initiative** under which **three Tapti River streams** originating in **Multai, Madhya Pradesh**, will be developed.
• It is the **third major inter-state river collaboration** involving MP, following:

- **Ken–Betwa Link Project** (with Uttar Pradesh)
- **Parbati–Kalisindh–Chambal Link Project** (with Rajasthan)

🔹 **Key Features**

Parameter	Details
Water Allocation	Total: **31.13 TMC**; MP: **11.76 TMC**, Maharashtra: **19.36 TMC**
Infrastructure	Includes **diversion weir** at MP-Maharashtra border; **left & right bank canals** in both states
Land Use	Covers **3,362 hectares** in MP; **no displacement or rehabilitation** required
Beneficiary Districts	**Burhanpur, Khandwa** (MP) and **Akola, Amravati, Buldhana** (MH) — known for **water scarcity & erratic rainfall**

3. Tapti River: Key Geographical Facts

🔹 **General Features**
• **Second-longest west-flowing river** in India after the Narmada
• Flows across **Madhya Pradesh, Maharashtra, and Gujarat**, draining into the **Arabian Sea** at the **Gulf of Khambhat**
• One of **three major west-flowing rivers** (others: **Narmada, Mahi**)

🔹 **Geographical Boundaries**
• Flows between the **Satpura Range (north)** and **Ajanta-Satmala Hills (south)**
• Runs **parallel to the Narmada River**, but separated by **central Satpura ranges**

🔹 **Basin Terrain & Drainage**
• Bounded by:

- **North**: Satpura Range
- **East**: Mahadeo Hills
- **South**: Ajanta and Satmala Hills

- **West**: Arabian Sea

🔹 **Major Tributaries**

Bank	Tributaries
Right-bank (4)	Vaki, Aner, Arunawati, Gomai
Left-bank (10)	Nesu, Amravati, Buray, Panjhara, Bori, Girna, Waghur, **Purna**, Mona, Sipna
• Purna River: Main left-bank tributary with perennial flow	

🔹 **Major Projects on Tapti**

- **Ukai Dam** (Gujarat)
- **Hathnur Dam** (Maharashtra)

4. Significance of the Project

Area	Impact
Water Security	Provides long-term **irrigation and drinking water** access to drought-prone districts
Groundwater Recharge	Supports **aquifer replenishment**, improving water table levels
Sustainable Development	Uses existing natural drainage with **minimal displacement** and **land disruption**
Regional Equity	Promotes balanced development in **north-eastern Maharashtra** and **southern MP**, reducing inter-state water disparity
Replicable Model	Can serve as a **blueprint** for other inter-state cooperative water-sharing projects across India

5. Conclusion: A Model for Water Federalism

The **Tapti Basin Mega Recharge Project** represents a **landmark initiative** in **cooperative federalism**, aimed at tackling **India's dual challenge** of **surface water underutilization** and **groundwater depletion**.
By integrating **inter-state planning**, **infrastructure development**, and **environmental sensitivity**, the project offers a pathway toward **sustainable, inclusive, and climate-resilient water management**.

Wadge Bank Dispute

📌 **Syllabus Mapping:**
✅ **GS Paper 1 – Geography (Marine Resources)**
✅ **GS Paper 2 – Government Policies & Interventions**
✅ **GS Paper 3 – Environmental Conservation | Resource Mobilization | Energy**

1. Why in News?

- **Fishermen in Kanyakumari, Tamil Nadu**, are protesting against the **Union Government's proposed hydrocarbon exploration** at **Wadge Bank** under the **Hydrocarbon Exploration and Licensing Policy (HELP)**.
- The proposed project is feared to threaten **marine biodiversity**, **livelihoods**, and **ecological balance** in one of the world's richest fishing grounds.

2. What is Wadge Bank?

Feature	Description
Location	~80 km southwest of **Cape Comorin (Kanyakumari)** in the **Indian Ocean**, within India's **Exclusive Economic Zone (EEZ)**
Type	A **submarine plateau** (or 'bank') on the **continental shelf**, shallower than 200 meters
Formation	Of **continental origin**, formed by **marine depositional and tectonic processes**

🌊 **Ecological & Economic Importance**

- Among the **world's most productive fishing grounds**
- Rich in **marine biodiversity**, including **commercial fish species**
- **High organic productivity** due to **seasonal upwelling**, which increases **nutrient availability**
- **Peak fishing season**: **July to October**
- Serves as a **breeding and feeding ground** for multiple marine species

⚖️ **Legal Status**

- The **1976 India–Sri Lanka Maritime Boundary Agreement**:
  - Grants **India sovereign rights** over Wadge Bank
  - **Sri Lankan fishing is prohibited** in this zone

- India retains rights to **explore and exploit petroleum and mineral resources**

3. Why is the Hydrocarbon Exploration Controversial?

🚫 **Fishermen's Concerns**

- Fear of **marine habitat destruction** and **disturbance to breeding grounds**
- Risk of **oil spills, pollution**, and long-term **impact on fish catch**
- Lack of **consultation with local communities**
- Threat to **traditional livelihoods** and **socio-economic stability**

🌿 **Environmental Risks**

- Seismic surveys and drilling can disturb **marine mammals, coral beds**, and **benthic ecosystems**
- Potential **conflict between energy security** and **biodiversity conservation**

4. About Hydrocarbons

Category	Details
Types	• **Based on Saturation: Alkanes, Alkenes, Alkynes** • **As Fossil Fuels: Petroleum, Natural Gas, Coal**
Importance	• **Backbone of energy sector** • **Used as industrial feedstock** • **Key source for transportation fuel**
Exploration Policy	• **Governed by Hydrocarbon Exploration and Licensing Policy (HELP)** • **Features:** – **Uniform licensing** – **Revenue-sharing contracts** – **Open acreage bidding system**

5. Way Forward: Balancing Development and Conservation

Recommendation	Rationale
Environmental Impact Assessment (EIA)	Conduct **comprehensive EIA** before approving any exploration activity in ecologically sensitive zones
Fisherman-Centric Policy Dialogue	Ensure **stakeholder consultation**, grievance redressal, and **livelihood protection**
Marine Spatial Planning (MSP)	Use **scientific zoning** to separate **conservation**, **livelihood**, and **industrial** activities
Alternative Livelihood Programs	In case of disruptions, provide **compensation and retraining programs**
Sustainable Blue Economy Strategy	Integrate marine ecology, coastal community welfare, and **resource extraction policies**

6. Conclusion

The dispute over **hydrocarbon exploration at Wadge Bank** underscores the need to **balance energy security with ecological sustainability and social justice**.
Given its **rich biodiversity and economic importance to coastal communities**, Wadge Bank should be treated as a **marine heritage zone**, and any development must align with **inclusive and sustainable governance** principles.

Geographical and Climatic Factors Influencing Heatwaves in India

📌 **Syllabus Mapping:**
✅ **GS Paper 1 – Geographical Phenomena (Heatwaves)**
✅ **GS Paper 2 – Government Policies & Disaster Management**
✅ **GS Paper 3 – Climate Change & Environmental Issues**

1. Why in News?

- **Andhra Pradesh and Telangana** are witnessing **severe heatwaves**, triggered by **geographical** and **climatic factors**.
- IMD has reported **record temperatures**, raising health and policy concerns.

2. Understanding Heatwaves: IMD Criteria

Region/Condition	Heat Wave Threshold
Plains	Max. Temp ≥ 40°C
Hilly Regions	Max. Temp ≥ 30°C
Coastal Regions	Temp departure ≥ 4.5°C & Actual ≥ 37°C
Departure from Normal	Heat Wave: 4.5–6.4°C; Severe: >6.4°C
Actual Max Temperature	Heat Wave: ≥45°C; Severe: ≥47°C

Spatial Criteria	At least 2 stations for 2 consecutive days in a subdivision

3. Geographical Factors Influencing Heatwaves

- **Latitude & Solar Intensity:**
  - States near the **Tropic of Cancer** like Telangana & Andhra Pradesh receive **direct sunlight**, increasing **solar insolation**.
- **Terrain & Soil Characteristics:**
  - **Black soil & rocky terrain** of the Deccan Plateau **absorb and retain heat** longer.
  - Vegetated/agricultural regions offer **evaporative cooling** via transpiration.
- **Landlocked Topography:**
  - Interior areas without **water bodies** show extreme **diurnal temperature variation**.
  - Example: **Telangana** vs. **Andhra's coast**.
- **Urban Heat Islands (UHIs):**
  - Cities with **concrete jungles, sparse vegetation**, and high **population density** trap heat, raising **local temperatures**.

4. Climatic Factors Contributing to Heatwaves

- **Pre-monsoon Rain Deficit & Humidity:**
  - **Dry soil + minimal cloud cover** = more radiation absorption.
  - **High humidity** reduces **evaporative cooling**, increasing **heat index**.
- **Wind & Atmospheric Stability:**
  - **Anti-cyclonic conditions** = clear skies + dry sinking air = **increased surface heating**.
- **Global Climatic Phenomena:**
  - **El Niño**: Weakens monsoon, increases dry spells, raising temperatures.
  - **Loo Winds**: Hot, dry winds from northwest India intensify the heat further.

5. Impacts of Heatwaves

A. Human Health

- Heat stroke, dehydration, and increased **mortality** among vulnerable groups.
- *Example:* **733 deaths** due to heatstroke in 2024 (Heat Watch Report).

B. Economic Consequences

- **Lost working hours** in labor-intensive sectors.
- Aircraft operations disrupted due to **reduced air density**.

C. Agricultural Distress

- Heat-induced stress lowers yields, especially **rice and wheat**.
- *Data:* 1% rise in heatwaves → **15% crop yield drop** in 2022.

D. Environmental Damage

- Heat triggers **forest fires**, loss of biodiversity, and **water evaporation**.
- 21.4% of forest areas in India are **fire-vulnerable**.

6. India's Measures to Combat Heatwaves

A. Heat Action Plans (HAPs)

- Adopted by **23 states**. Include:
  - Vulnerability mapping
  - Early warning systems
  - Departmental responsibilities
  - Community outreach

B. IMD's Colour-Coded Alerts

Code	Meaning
Green	Normal
Yellow	Be Aware
Orange	Be Prepared
Red	Take Action

C. Cool Roof Initiatives

- **Reflective roofs** in cities like **Hyderabad** reduce indoor heat.
- Now incorporated into **building codes** in Telangana, Gujarat, Maharashtra.

D. Urban Greening & Smart Cities Mission

- Focus on **water-sensitive urban design**, green corridors, **heat-resilient infrastructure**.

E. Jal Shakti Abhiyan

- Promotes **water harvesting** and **restoration of traditional water bodies**.

7. Way Forward: Policy & Preparedness

- **Legal Recognition:** Include heatwaves under **Disaster Management Act, 2005**.
- **Decentralized HAPs:** Design **district-level** plans tailored to local geographies.
- **Workplace Codes:** Guidelines for safe working hours, hydration access for outdoor workers.
- **Infrastructure Development:** Heat-resilient roads, shelters, and **community cooling centers**.
- **Climate-Responsive Agriculture:** Use **heat-tolerant crop varieties**, shift sowing schedules.
- **Public Awareness Campaigns:** Disseminate information via **Asha workers**, mobile apps, and community radio.

Conclusion

Heatwaves, once episodic, are now becoming **frequent and intense** due to climate change and poor urban planning. A **comprehensive, decentralized, and climate-sensitive approach**—combining geography, meteorology, and public health—is essential to reduce **vulnerability, protect livelihoods**, and build **resilient communities**.

HISTORY, ART & CULTURE

Maharana Pratap Jayanti 2025

📌 **Syllabus Mapping:**
✅ **GS Paper 1 – History: Medieval Indian History, Important Personalities and Battles**

1. Why in News?

- On **9th May 2025**, the **Prime Minister of India paid tribute** to **Maharana Pratap** on his **birth anniversary**, commemorating the valour and legacy of one of India's greatest Rajput warriors.

2. Life and Legacy of Maharana Pratap

Aspect	Details
Birth	**9 May 1540**, at **Kumbhalgarh**, Rajasthan
Dynasty	**Sisodia Rajput** of the **House of Mewar**
Father	**Maharana Udai Singh II**, ruler of Mewar and founder of **Udaipur**
Position	**13th ruler of Mewar**; known for resisting Mughal expansion in Rajputana
Character Traits	Symbol of **Rajput pride, honour**, and **independence**; celebrated for his **fearless resistance** against the Mughal Empire

3. Key Events in Maharana Pratap's Life

⚔️ **Battle of Haldighati (18 June 1576)**

- Fought between **Maharana Pratap** and **Raja Man Singh of Amber**, a general under **Mughal Emperor Akbar**
- Though **outnumbered**, Maharana Pratap displayed **exceptional courage**
- Result: **Tactical defeat**, but **symbolic victory** for Rajput resistance as he refused to surrender

🔁 **Regaining Mewar (Post-1579)**

- Regained much of **Western Mewar**, excluding **Chittor Fort**
- Established a new capital at **Chavand**, near **Dungarpur**

Death and Succession

- Died on **19 January 1597**
- Succeeded by **Amar Singh I**, who later **submitted to Emperor Jahangir** in **1614**

4. Significance in Indian History

Contribution	Significance
Symbol of Resistance	His defiance against Akbar became a **nationalistic symbol** of independence and integrity
Inspiration for Future Generations	Celebrated for **refusing to accept subjugation**, he remains a **patriotic icon** in Indian folklore
Military Tactics	Used **guerrilla warfare**, **hill terrain knowledge**, and **horse-mounted mobility** to resist Mughal forces

5. Conclusion: Maharana Pratap's Enduring Legacy

Maharana Pratap's life reflects the **indomitable spirit of resistance**, **self-respect**, and **sacrifice for freedom**. Even in defeat, he **preserved the sovereignty of Mewar**, refusing to bow before the might of the Mughal Empire.
His legacy continues to **inspire nationalist sentiment** and **valorisation of indigenous resistance** in India's medieval history.

ENVIRONMENT & ECOLOGY

Bhimgad Wildlife Sanctuary

Syllabus Mapping:
GS Paper 3 – Environment and Ecology: Conservation Efforts, Protected Areas
Prelims Focus – Eco-Sensitive Zones, Wildlife Sanctuaries, Biodiversity Hotspots

1. Why in News?

- **Public encroachment** into the **Eco-Sensitive Zone (ESZ)** of **Bhimgad Wildlife Sanctuary (BWS)** in Karnataka has triggered concern among conservationists, due to the threat it poses to the region's **fragile ecosystem and unique biodiversity**.

2. What are Eco-Sensitive Zones (ESZs)?

Definition and Legal Framework
• ESZs serve as **buffer zones** (up to 10 km radius) around protected areas like national parks and wildlife sanctuaries.
• Notified under the **Environment (Protection) Act, 1986**, based on the **National Wildlife Action Plan (2002–2016)**.
• Aim: To **minimize anthropogenic pressure** near ecologically sensitive regions.

Permissibility Matrix in ESZs

Category	Activities
Prohibited	Commercial mining, polluting industries, hydro projects, sawmills
Regulated	Tree felling, construction of hotels, commercial water use, use of pesticides
Permitted	Organic farming, rainwater harvesting, renewable energy, green tech usage

3. Bhimgad Wildlife Sanctuary: Ecological and Historical Overview

Geographical Location & History
• Located in **Belgaum district**, Karnataka, bordering **Goa**
• Part of the **Western Ghats**, a global biodiversity hotspot
• Declared a **wildlife sanctuary in December 2011**
• Named after the **Bhimgad Fort**, built by **Chhatrapati Shivaji** in the 17th century

Avian Diversity
• Home to rare and endemic bird species including:

- **Malabar Grey Hornbill**
- **Malabar Trogon**
- **Emerald Dove**
- **Imperial Pigeon**
- **Velvet-fronted Nuthatch**

🔹 **Unique Mammalian Species**
• Only known **breeding site** of the **Wroughton's Free-tailed Bat** found in the **Barapede Caves**

🔹 **Water Resource Significance**
• Includes **Vajrapoha Waterfalls**
• Contributes to the **Mahadayi River catchment**, crucial for downstream water flow

4. Emerging Threats and Ecological Concerns

Threat Area	Impact
Encroachment	Habitat destruction, disturbance to breeding sites
Tourism Infrastructure	Violates ESZ guidelines, induces fragmentation
Illegal Extraction	Tree felling, poaching, and unregulated agriculture
Hydrological Disruption	Affects seasonal river flow and downstream ecology

5. Conservation Roadmap for Bhimgad Sanctuary

🔹 **Strengthen ESZ Compliance**
• Enforce **activity-specific restrictions** and **penalize violations**
• Regular monitoring through **remote sensing** and **ground reports**

🔹 **Community-Based Conservation**
• Promote **eco-tourism** and **organic agriculture** as sustainable livelihood models
• Engage locals as **eco-guards** and in **biodiversity documentation**

🔹 **Research and Monitoring**
• Scientific studies on **endemic bat species**, **avian biodiversity**, and **micro-climates**
• Develop a **comprehensive species conservation strategy**

🔹 **Regional Cooperation**
• Coordinate with neighboring states like **Goa** and **Maharashtra** for transboundary conservation
• Joint task forces for catchment management and wildlife protection

6. Conclusion: Preserving a Fragile Ecological Jewel

Bhimgad Wildlife Sanctuary is not only an **ecological hotspot** but also a **heritage landscape** blending natural wealth with historical legacy. With rising human activity encroaching its **eco-sensitive boundaries**, immediate and sustained conservation action is essential. Safeguarding Bhimgad is pivotal for the **Western Ghats' ecological integrity**, protection of **rare species**, and **water security** of the Mahadayi basin.

Global Displacement Crisis

📌 **Syllabus Mapping:**
✅ ***GS Paper 2*** **– Issues Relating to Development & Poverty, Refugees and Global Institutions**
✅ ***GS Paper 3*** **– Environmental Pollution & Degradation, Disaster Management**

1. Why in News?

The **Global Report on Internal Displacements 2025**, released by the **Internal Displacement Monitoring Centre (IDMC)**, reveals a **record high of 45.8 million global internal displacements in 2024**, driven overwhelmingly by **climate-related disasters**. India ranked among the top countries, witnessing **5.4 million displacements**, largely due to **floods**.

2. Key Findings of the IDMC 2025 Report

Key Indicator	Data/Observation
Total Internal Displacements	45.8 million (highest since 2008)
Disaster-Related Displacements	99.5% caused by **climate-linked extreme weather**
India-Specific Insights	5.4 million displacements; **two-thirds due to floods**, **1,000 in Manipur due to violence**
Conflict-Related Displacement	20.1 million people, mostly in **climate-vulnerable countries**
Dual Risks	Countries facing both conflict & climate displacement have **tripled since 2009**

3. Who are Climate Refugees?

- **Definition:** Persons **forced to migrate** due to **climate change** and **environmental degradation**.
- **Types of Disasters Triggering Migration**:
  - **Rising Sea Levels** (e.g., Bangladesh deltaic displacement)
  - **Extreme Weather Events** (storms, floods, droughts)
  - **Desertification & Land Degradation** (e.g., India: 30.5 mn hectares affected)

- **Water Scarcity** (e.g., 25% of global population faces extreme water stress)

4. Consequences of Climate Displacement

- **Humanitarian Crisis:** Food insecurity, disease outbreaks, sanitation issues.
- **Urban Stress:** Overcrowding in slums, job shortages in host cities.
- **Social Tensions:** Local resource conflicts, rise in xenophobia.
- **National Security Risks:** Fragility and radicalisation in conflict zones.

5. Legal and Policy Challenges

Challenge	Explanation
No Legal Recognition under 1951 Convention	Climate refugees not recognized; the law only protects those fleeing persecution.
Non-refoulement Not Applicable	States can legally deport climate migrants.
India's Position	India is **not a signatory** to the 1951 Refugee Convention or its 1967 Protocol.
Weak Global Agreements	*Global Compact on Migration* (2018) is **non-binding**.
Statelessness Risk	Displaced people may **lose legal identity and rights**.
Funding Gaps	**Green Climate Fund** underfunded; **Loss & Damage Fund** operational only in 2025.

6. Existing Regional Protections

Instrument	Scope for Climate Refugees
OAU Convention (Africa, 1969)	Covers "events seriously disturbing public order" (interpretable for disasters)
Cartagena Declaration (Latin America, 1984)	Protects those fleeing "massive human rights violations" or disasters

7. What Can Be Done? – Way Forward

✅ **1. Legal Reforms**

- Amend the **1951 Refugee Convention** to include climate-induced displacement.
- Establish a new **UN Convention on Climate Refugees** (demanded by Pacific Island states).

✅ **2. National-Level Innovations**

- **Climate Humanitarian Visas** (e.g., proposed by New Zealand)
- **Land Purchase Agreements** (e.g., Kiribati's deal with Fiji for relocation)

✅ **3. Mainstreaming in Policy**

- Integrate climate migration in **National Adaptation Plans (NAPs)**.
- Align with **Sendai Framework** and national disaster risk reduction (DRR) strategies.

✅ **4. Enhanced Climate Finance**

- Expand mandates of **Loss and Damage Fund** to support **relocation infrastructure**.
- **Green Climate Fund** must allocate funds for **migration-related resilience building**.

✅ **5. Strengthen Multilateral Institutions**

- Empower **UNHCR, IOM**, and **regional platforms** to build early warning and coordination systems.
- Promote **data transparency** via IDMC for real-time climate migration tracking.

⬅ END Conclusion

The IDMC 2025 report underscores the **urgency of rethinking climate displacement frameworks**, as internal displacements due to disasters break historical records. The absence of legal recognition for **climate refugees**, especially in high-risk regions like South Asia, calls for **institutional innovation**, **climate-responsive financing**, and **a globally inclusive refugee policy** that protects the dignity and rights of those displaced by our warming planet.

Anamalai Tiger Reserve

📌 **Syllabus Mapping:**
✅ ***GS Paper 3* – Conservation | Environmental Pollution & Degradation | Biodiversity**

1. Why in News?

The **pre-monsoon (summer) estimation exercise** for **tigers, co-predators, prey species, and habitat monitoring** has commenced at the **Anamalai Tiger Reserve (ATR)** in **Tamil Nadu**.

2. About Anamalai Tiger Reserve (ATR)

Attribute	Details
Location	Anamalai Hills, Western Ghats, Tamil Nadu
Declared	Tiger Reserve in 2007
Alternate Name	Indira Gandhi Wildlife Sanctuary and National Park, named after former PM Indira Gandhi
UNESCO Tag	Kariyan Shola, Grass Hills, and Manjampatti areas are part of UNESCO World Heritage Sites under the Western Ghats designation
Forest Types	Evergreen, Deciduous, Montane Shola, Savannahs, Marshy Grasslands
Neighbouring Protected Areas	- Parambikulam Tiger Reserve (Kerala – East) • Chinnar Wildlife Sanctuary, Eravikulam National Park (South-West) • Reserved Forests: Nenmara, Vazhachal, Malayattur, Marayur (Kerala)

3. Flora and Fauna

🐅 **Key Fauna:**

- **Tiger** (apex predator)
- **Asiatic Elephant**
- **Sambar**, **Spotted Deer**, **Barking Deer**
- **Leopard**, **Jackal**, **Jungle Cat**
- Various **reptiles**, **amphibians**, and **bird species**

🌳 **Vegetation Diversity:**

- **Tropical evergreen** and **semi-evergreen forests**
- **Moist deciduous** and **dry deciduous forests**
- **Shola forests** and **Montane grasslands** – critical to endemic species

4. Tribal and Indigenous Communities

Tribe	Distinct Features
Kadars	Forest-dwelling, honey and herbal gatherers
Muduvars	Agriculturists and forest-based economy
Malasars & Malai Malasars	Traditionally forest guardians
Eravalars & Pulayars	Engage in seasonal labour and forest activities

These tribes depend on **non-timber forest produce (NTFP)** and play a key role in **community conservation**.

5. Conservation Significance

- Part of the **Nilgiri Biosphere Reserve**, a **UNESCO-recognized hotspot**
- Critical corridor for the **Elephant Reserves** under **Project Elephant**
- Key landscape for **tiger conservation** in southern India
- Integral to **climate resilience**, **water security**, and **biodiversity conservation**

✅ **Prelims Pointers:**

Point	Information
State	Tamil Nadu
Established	2007 (as a Tiger Reserve)
Alternate Name	Indira Gandhi Wildlife Sanctuary
Tribes	Kadars, Malasars, Muduvars, Eravalars, Pulayars
Important Species	Tiger, Elephant, Sambar, Leopard, Jungle Cat
Neighbouring Areas	Parambikulam (East), Chinnar & Eravikulam (SW), Reserved forests of Kerala
UNESCO Sites	Kariyan Shola, Grass Hills, Manjampatti

⬅ END Conclusion

The **Anamalai Tiger Reserve** is not only a biodiversity-rich habitat but also a key player in the **Western Ghats' ecological balance**. Conservation efforts like **seasonal population estimation** and **community involvement** ensure better management of wildlife and forest ecosystems. Sustained support and **scientific monitoring** will be critical in preserving this ecological treasure.

Illegal Killing of Migratory Birds

📌 **Syllabus Mapping:**
✅ ***GS Paper 2*** **– International Treaties & Agreements | Environmental Governance**
✅ ***GS Paper 3*** **– Conservation | Biodiversity | Environmental Degradation**

1. Why in News?

A recent study reveals that **millions of migratory birds** are still being **illegally killed across the Mediterranean region**, despite international commitments like the **CMS Rome Strategic Plan**, which aims to reduce such killings by **50% by 2030**.

2. Key Findings from the Study

- **Non-Compliance:**
  - **38 out of 46** countries assessed are **not on track** to meet the **CMS Rome Strategic Plan** targets.
  - Illegal killing and trapping remain widespread across **Europe, North Africa, and West Asia**.
- **Key Threatened Species:**
  - **European Turtle Dove** (*Streptopelia turtur*) – Vulnerable due to overhunting.
  - **Egyptian Vulture** (*Neophron percnopterus*) – Critically Endangered, often poisoned.
  - **European Goldfinch** (*Carduelis carduelis*) – Trapped for pet trade.

3. CMS Rome Strategic Plan (2020–2030)

Feature	Details
Adopted By	Parties to the **Convention on Migratory Species (CMS)**
Goal	Reduce **Illegal Killing, Trapping, and Trade (IKB)** by **50% by 2030**
Coverage Area	Focused on **Europe and Mediterranean Region**
Legal Basis	Builds upon **Bern Convention (1979)** – First treaty for species and habitat protection

4. About the Bern Convention (1979)

- **Full Name:** Convention on the Conservation of European Wildlife and Natural Habitats
- **Objective:** Conserve wild flora and fauna and their natural habitats, particularly those requiring cooperation across multiple countries.
- **Notable Feature:** First international agreement to link **species protection** with **habitat conservation**.

5. India's Initiatives for Migratory Bird Conservation

Initiative	Details
National Action Plan for Migratory Birds (2018–2023)	Focuses on **Central Asian Flyway** (Arctic to Indian Ocean).
Wildlife Protection Act, 1972	Birds like **Siberian Crane**, **Indian Bustard** protected under **Schedule-I**.
CMS MOUs Signed by India	Non-binding MOUs for **Siberian Cranes (1998)**, **Marine Turtles (2007)**, **Dugongs (2008)**, and **Raptors (2016)**.

6. Significance of Migratory Birds

- **Ecological Role:** Pollinators, seed dispersers, pest controllers
- **Environmental Indicators:** Reflect ecosystem health and climate change impact
- **Cultural & Economic Value:** Attract **eco-tourism**; linked to traditions and festivals in India

7. Challenges to Bird Conservation

- **Illegal Hunting & Trade:** Driven by food, pet trade, and sport
- **Habitat Loss:** Due to deforestation, wetland degradation, and urbanization
- **Climate Change:** Alters migratory patterns and breeding cycles
- **Lack of Enforcement:** Weak implementation of laws and low penalties

8. Way Forward

- **Strengthen Global Cooperation:** Enforce and monitor compliance with **CMS Rome Plan**
- **Expand Protected Areas:** Ensure safe stopovers and habitats along flyways
- **Awareness Campaigns:** Promote responsible tourism and reduce market demand for birds
- **Technology Use:** Satellite tagging and drones for real-time tracking
- **Policy Integration:** Align CMS goals with **national biodiversity and climate policies**

⬅ END Conclusion

Despite international frameworks like the **CMS Rome Strategic Plan** and the **Bern Convention**, illegal killing of migratory birds remains a pressing conservation issue. **Strengthened enforcement**, **community involvement**, and **global cooperation** are essential to ensure the survival of these ecological ambassadors across continents.

Dirang Geothermal Well: Pioneering Renewable Energy in Northeast India

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Government Policies & Interventions**
✅ **GS Paper 3 – Renewable Energy, Environment and Technology, Energy Security**

1. Why in News?

- **Northeast India's first geothermal production well** has been drilled in **Dirang**, **Arunachal Pradesh**, positioning the region as a new frontier in India's push towards **clean and sustainable energy**.

2. What is the Dirang Geothermal Project?

Feature	Details
Location	Dirang, West Kameng district, Arunachal Pradesh
Objective	To make Dirang **India's first fully geothermal-powered town**
Geological Setting	Located between **quartzite and schist rocks**, near a **major Himalayan fault zone**
Reservoir Temperature	~115°C, suitable for **direct-use geothermal technologies**
Technology Used	**Closed-loop binary Organic Rankine Cycle (ORC)** system
Benefits	Reduces dependence on **diesel and firewood**, boosts **agriculture**, supports **off-grid high-altitude living**

3. What is Geothermal Energy?

- **Definition:** Renewable energy derived from **heat stored in the Earth's crust**, mainly due to **radioactive decay of minerals**.
- **Nature:** Reliable, **baseload** power available 24/7 unlike solar or wind.

🔍 ***How it Works (ORC Technology):***

- Uses **geothermal heat** to vaporize a **secondary organic fluid**.
- The vapor drives a **turbine**, generating electricity.
- Efficient in **moderate temperature zones (below 150°C)**.

4. Significance of the Dirang Project

- **Regional Energy Independence:** Reduces reliance on conventional fuels in difficult terrains of **northeast Himalayas**.
- **Climate-Resilient Agriculture:** Offers **greenhouse heating** and **irrigation** in cold regions, improving productivity.
- **Clean Energy Transition:** Taps into **India's estimated 10,600 MW geothermal potential**.
- **Baseline Power Source:** Unlike solar and wind, geothermal provides **non-intermittent** power, ideal for remote communities.

5. India's Geothermal Energy Landscape

Project/Region	Details
Puga Valley (Ladakh)	ONGC's 1 MW pilot project under development
Manuguru (Telangana)	20 kW binary-cycle pilot plant
381 Sites Identified	Geological Survey of India (GSI) has mapped thermally anomalous locations across **Himalayas, Gujarat, Telangana, and Jharkhand**

6. International Collaborations

Country	Area of Collaboration
Iceland (2007)	Capacity building and exploration expertise
Saudi Arabia (2019)	Knowledge transfer and bilateral research
USA (2023 - RETAP)	Geothermal R&D, tech transfer under **Renewable Energy Technology Action Platform**

7. Key Challenges in Harnessing Geothermal Energy in India

- **Lack of Policy Framework:** India lacks a **comprehensive geothermal policy**, hindering private sector participation.
- **High Initial Cost:** Exploration and drilling are capital-intensive.
- **Seismic Risk Concerns:** Especially in tectonically active regions like Himalayas.
- **Limited R&D Ecosystem:** Few research institutions focused on geothermal innovation.

8. Policy Recommendations & Way Forward

- **Formulate National Geothermal Policy**: Provide clear **subsidies, PPP frameworks, viability gap funding**.
- **Develop Regional Pilot Hubs**: Expand geothermal pilots in **Ladakh, Gujarat, Telangana**, and Northeast India.
- **Integrate with Rural Development**: Use geothermal for **microgrids**, **community heating**, and **greenhouse agriculture**.
- **International Partnerships**: Leverage global expertise through **India-US RETAP** and **Iceland collaboration**.
- **Include in Renewable Energy Mix**: Mainstream geothermal in **National Energy Security strategy** under **National Action Plan on Climate Change (NAPCC)**.

9. Conclusion

The **Dirang geothermal well** is a **landmark step** in India's renewable energy journey, showcasing how **clean, decentralized, and reliable** power sources can be harnessed in ecologically sensitive and logistically challenging terrains. With focused **policy push**, **technological innovation**, and **global partnerships**, geothermal energy can become a vital component of India's **net-zero vision** and **energy sovereignty goals**.

Algal Bloom Crisis along South Australia's Coastline

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Environmental Pollution & Degradation, Marine Ecology**

1. Why in News?

A **toxic algal bloom** caused by the **Karenia mikimotoi** dinoflagellate has severely affected marine ecosystems along **South Australia's coastline**, leading to the death of over **200 marine species** across **150 km** of coastal waters.

2. What are Algal Blooms?

Feature	Details
Definition	A sudden increase in the population of algae in freshwater or marine systems, often visible as colored patches.
Types	• **Non-Harmful Blooms**: Can support marine food chains • **Harmful Algal Blooms (HABs)**: Release toxins or deplete oxygen, causing damage.
Common Triggers	• Nutrient Enrichment (Nitrogen, Phosphorus) • Warmer Sea Temperatures • Stagnant Water Conditions • Climate Change-driven Marine Heatwaves (MHWs)

3. Case Study: South Australia (2024-25)

- **Causative Organism**: *Karenia mikimotoi* – a toxic, bloom-forming **dinoflagellate**
- **Affected Areas**: Kangaroo Island, Yorke Peninsula, Fleurieu Peninsula
- **Ecological Impact**:
  - Over **200 marine species** perished
  - **Gill damage**, **red blood cell destruction**, and **neurotoxic effects** on aquatic organisms
  - **Oxygen depletion** and water discoloration due to thick algal spread
- **Triggering Factors**:
  - **Marine Heatwaves (MHWs)** raised temperatures by **2.5°C–4°C** above normal
  - MHWs lasted several days to weeks, creating ideal conditions for bloom proliferation

4. What are Marine Heatwaves (MHWs)?

Parameter	Description
Definition	Periods where **sea surface temperature (SST)** rises **3–4°C** above average for **≥5 days**
Impact	Trigger **oxygen depletion**, alter species distribution, and support **algal bloom growth**
Global Trend	Increasing in **frequency**, **intensity**, and **duration** due to **climate change**

5. Broader Implications of Harmful Algal Blooms (HABs)

- **Biodiversity Loss**: Fish, coral, mollusks, and marine mammals are affected by **toxin exposure** or **oxygen starvation**
- **Fisheries Collapse**: Affects coastal livelihoods and food security (e.g., shellfish contamination)
- **Public Health Risks**: Humans exposed via **seafood consumption** or **recreational water use** can suffer from respiratory and neurological disorders

- **Tourism Decline**: Discolored waters and fish kills deter visitors
- **Ecosystem Disruption**: Alters **trophic balance** and impacts **biogeochemical cycles**

6. India-Relevant Insights

Region	Context
West Coast	Arabian Sea upwelling and sewage/nutrient runoff contribute to frequent **red tides** (e.g., Goa, Kerala)
East Coast	Chilika Lake and Andhra coast face **algal bloom episodes** linked to eutrophication and heatwaves
Andaman Sea	Sensitive to **climate-induced marine heatwaves**, which may trigger future algal bloom events

7. Measures to Mitigate HABs

- **Reduce Nutrient Runoff**:
  - **Control agricultural fertilizers**, sewage, and industrial waste
  - Promote **sustainable land use practices**
- **Monitor and Predict Blooms**:
  - Use **remote sensing**, satellite data, and **IMD alerts** for early bloom detection
- **Strengthen Marine Biodiversity**:
  - Protect coral reefs and mangroves to build ecosystem resilience
- **Climate Action**:
  - Integrate **HAB risk management** in **National Adaptation Plans** and **Coastal Zone Regulations**
- **International Cooperation**:
  - Follow frameworks under **UNEP**, **IOC-UNESCO**, and **Global HAB Programme**

Conclusion

The South Australia algal bloom highlights how **climate change**, **marine heatwaves**, and **nutrient pollution** combine to devastate marine ecosystems. For India, this underscores the urgent need to **regulate coastal pollution**, **monitor marine health**, and **integrate ocean-climate linkages** in environmental governance to safeguard biodiversity and livelihoods.

India's Push for a Repairability Index

📌 **Syllabus Mapping:**
✅ **GS Paper 2** – Government Policies & Interventions, Consumer Rights
✅ **GS Paper 3** – Sustainable Development, Industrial Policies

1. Why in News?

The **Department of Consumer Affairs (DoCA)** has proposed a **Repairability Index (RI)** for **consumer electronics and appliances** to promote transparency in product lifespan, **reduce e-waste**, and empower consumers under the **Right to Repair** movement.

2. What is the Repairability Index (RI)?

Parameter	Details
Definition	**A score or rating system that measures how easily a product can be repaired.**
Scope	**Applies to consumer electronics (e.g., smartphones, laptops, appliances).**
Factors Considered	**- Availability of spare parts - Cost of repairs - Availability of repair manuals and tools - Software update support - Ease of disassembly and reassembly**
Purpose	**Empower consumers with informed choices and ensure product longevity.**
Global Practice	**France pioneered the Repairability Index (RI) in 2021, followed by the European Commission's Sustainable Product Regulation (2022).**
Parameter	**Details**

3. What is the Right to Repair Movement?

Aspect	Details
Objective	Ensure users' rights to access repair parts, manuals, software, and services.
Origin	Gained traction globally in response to planned obsolescence and rising electronic waste (e-waste).
Indian Initiative	- Committee formed by Department of Consumer Affairs (DoCA), chaired by **Nidhi Khare**. - **Right to Repair Portal** launched in 2023 to provide consumers with easy access to repair information from manufacturers.

4. Issues Leading to RI Framework

- **Planned Obsolescence**:
  - Products are **intentionally designed to have short lifespans**, forcing consumers to upgrade.
  - Examples: Non-replaceable batteries, no software updates, proprietary screws.

- **Leaner Engineering Choices**:
  - Cost-cutting compromises on **durability and repairability**.
  - Rising **metal prices** and **market competition** encourage fragile designs and closed-loop hardware.
- **Environmental Impact**:
  - India generated over **1.6 million tonnes** of e-waste in 2021 (CPCB Report)
  - Difficult repairs → more replacements → greater **carbon footprint** and **resource exploitation**

5. Benefits of Introducing the RI

- **Consumer Empowerment**:
  - Enables **informed purchasing decisions** based on repairability scores
  - Reduces long-term costs by avoiding frequent replacements
- **Environmental Gains**:
  - Reduces **electronic waste** and **resource use**
  - Promotes **circular economy** and **sustainable consumption**
- **Boost to Repair Industry**:
  - Encourages **local repair shops**, self-repair practices, and employment in the service economy
- **Market Incentives**:
  - Encourages manufacturers to design **repair-friendly** and **modular** products
  - Can become a **competitive feature** in marketing and branding

6. Global Context

Country/Region	Action Taken
France	Introduced **Repairability Index (2021)** with mandatory product scores on packaging
European Union	**Right to Repair Directive (2023)** promotes design for durability and repairability
United States	Several states have enacted **Right to Repair Laws** for electronics and agriculture equipment

7. Way Forward for India

- **Mandatory RI Labelling**:
  - Make RI scores compulsory on packaging for targeted categories like mobiles, TVs, washing machines
- **Standardized Repair Ratings**:
  - Develop **uniform rating mechanisms** in consultation with BIS and manufacturers
- **Legislate Right to Repair**:
  - Include in **Consumer Protection Act** or create standalone **Right to Repair legislation**
- **Capacity Building**:
  - Skill development programs for local repair technicians under **Skill India Mission**
- **Incentivise Sustainable Design**:
  - Provide **tax rebates** or **procurement preference** to companies designing repairable products

Conclusion

The **Repairability Index framework** is a **progressive step** toward **consumer empowerment**, **waste reduction**, and **sustainable manufacturing**. As India aligns with global standards, ensuring **legal backing, awareness campaigns, and industry compliance** will be key to making this initiative successful.

BIOTECHNOLOGY & HEALTH

State of the World's Nursing 2025

📌 **Syllabus Mapping:**
✅ **GS Paper 2 – Health: Human Resources for Health, Government Schemes**
✅ **GS Paper 2 – Governance: Institutional Mechanisms for Public Health**

1. Why in News?

- On **International Nurses Day (12 May 2025)**, the **World Health Organization (WHO)** released the **State of the World's Nursing (SoWN) 2025 Report**.
- The report offers a global perspective on the **status, challenges, and future directions** of the nursing workforce and highlights the **critical gaps**, especially in **low- and middle-income countries** like India.

2. Global Highlights: SoWN 2025 Report

🔹 **Workforce Size and Distribution**

- Global nurse strength grew from **27.9 million (2018)** to **29.8 million (2023)**
- However, **78% of nurses** are concentrated in countries comprising only **49% of the global population**
- **Nurse-to-population ratio** globally: **37.1 per 10,000**, but skewed:
  - **Europe** has 5× more nurses than Africa or Eastern Mediterranean
  - **High-income countries (HICs)** have 10× more nurses than low-income ones

🔹 **Projected Trends**

- Global nurse workforce to rise to **36 million by 2030**
- Nurse shortage expected to **reduce from 5.8 million (2023)** to **4.1 million**, but **70% of gaps** will persist in **Africa and Eastern Mediterranean**

🔹 **Migration Trends**

- **1 in 7 nurses** globally is foreign-born
- In **HICs**, foreign-born nurses account for **23%**, compared to:
  - 8% in upper-middle-income
  - 1% in lower-middle-income
  - 3% in low-income countries

🔹 **Regulation and Mental Health Support**

- **92% of countries** have regulatory bodies
- **94%** have **minimum wage laws**
- But only **42%** provide **mental health support** to nurses

3. India's Nursing Sector: Status and Initiatives

Parameter	Status
Nurse-to-Population Ratio	**1.9 per 1,000**, below WHO's recommended **3 per 1,000**
Registered Nurses	Over **3.3 million**, under the **Indian Nursing Council (INC)**
Regulatory Body	INC, under **Ministry of Health & Family Welfare**, established via **Indian Nursing Council Act, 1947**
Education Expansion	Plan to open **157 new nursing colleges** by **mid-2025**, adding **15,700 B.Sc. Nursing seats**

4. Major Challenges Facing India's Nursing Workforce

Challenge	Description
Inadequate Numbers	Despite 3.3 million registered nurses, India faces a **2.4 million deficit**, affecting quality and workload
Urban-Rural Imbalance	Majority of nurses in **urban hospitals**; **rural and tribal areas** remain neglected
Limited Training & Upskilling	Lack of **advanced education** and **specialised courses** hinders quality of care
Poor Compensation & Recognition	Indian nurses often receive **lower wages** and **limited societal recognition** compared to peers abroad
Gender Bias & Harassment	Nurses, predominantly women, face **workplace harassment, blame for systemic gaps**, and **mental stress**
High Migration ('Brain Drain')	**~640,000 Indian nurses** work abroad; emigration driven by **better pay, conditions, career growth**

5. International Nurses Day: Background

Parameter	Details
Observed On	**12 May**, birth anniversary of **Florence Nightingale** (1820–1910)
Florence Nightingale	British nurse, statistician, and social reformer; known for work in **Crimean War**, called the **"Lady with the Lamp"**
Organiser	**International Council of Nurses (ICN)** – represents **130+ national nursing associations** and **28 million nurses**
2025 Theme	*"Our Nurses. Our Future. Caring for nurses strengthens economies"*

6. Policy Measures to Strengthen India's Nursing Sector

🏥 **Human Resource Expansion**

- Increase **B.Sc. and diploma-level nursing seats** in underserved regions
- Focus on **nurse recruitment drives** for government and primary health centres

📚 **Education & Skill Development**

- Launch **continuing professional development (CPD)** platforms
- Offer **specialisation** in geriatrics, critical care, neonatal, and palliative care
- Encourage **digital learning modules** through eSanjeevani and Skill India

💼 **Compensation and Working Conditions**

- Ensure **pay parity** with other health professionals
- Provide **housing, insurance, and childcare benefits** for nurses, especially in rural areas

🌍 **Ethical International Recruitment**

- Implement **WHO's Global Code of Practice** for international migration
- Strengthen **bilateral MoUs** for **circular migration** with skill-sharing clauses

🛡️ **Workplace Safety and Support**

- Create **grievance redressal mechanisms** and enforce **anti-harassment protocols**
- Provide **mental health counselling**, peer support, and **wellness leave**

7. Conclusion: Reimagining the Role of Nurses in Healthcare

The **SoWN 2025 report** affirms that **investing in nursing is essential** for resilient and equitable healthcare systems.
For India, the solution lies in **expanding the workforce**, **bridging rural-urban gaps**, **valuing nurses through compensation and dignity**, and **retaining talent** through growth pathways.
Caring for nurses isn't just a workforce issue—**it's a national health priority**.

India's Tuberculosis Elimination Drive

📌 **Syllabus Mapping:**
✅ ***GS Paper 2*** **– Health, Government Schemes, International Institutions**
✅ ***GS Paper 3*** **– Disease Control, Inclusive Growth, Science & Technology (Diagnostics)**

1. Why in News?

The **Prime Minister chaired a high-level review meeting** on the **National Tuberculosis Elimination Programme (NTEP)**, emphasizing **data-driven, technology-enabled interventions** to achieve India's goal of **eliminating TB by 2025**, ahead of the global target of 2030.

2. National Tuberculosis Elimination Programme (NTEP)

Aspect	Details
Launch	Renamed in 2020 from RNTCP (1997)
Goal	Eliminate TB in India by 2025 (5 years before SDG target)
Pillars	Detect – Treat – Prevent – Build (DTPB)
Key Regimens Introduced	All-oral Bedaquiline regimen, mBPaL regimen for MDR-TB
Crowdsource Model	*Pradhan Mantri TB Mukt Bharat Abhiyaan* (PMTBMBA), *Ni-kshay Mitra*
Digital Support	*Ni-kshay Portal* for real-time TB tracking and support

3. Key Achievements under NTEP

✅ **Epidemiological Gains**

- **TB Incidence Decline:** 18% drop (from 237/lakh in 2015 to 195/lakh in 2023) – twice the global rate.
- **Mortality Reduction:** 21% decline from 28 to 22 deaths per lakh population.

✅ **Treatment and Infrastructure**

- **Treatment Coverage:** Now at **85%**, aided by **1.7 lakh Ayushman Arogya Mandirs**.
- **100-Day TB Mukt Bharat Abhiyaan:** 12.97 crore people screened; 7.19 lakh cases detected.

✅ **Community Participation**

- **Ni-kshay Mitra Initiative:** 2.55 lakh volunteers, 29.4 lakh nutrition baskets delivered.
- **Ni-kshay Poshan Yojana:** 1.28 crore TB patients received DBT; incentive enhanced to ₹1000 in 2024.

✅ **Diagnostic Expansion**

- **NAAT labs and AI-enabled X-rays** deployed across high-risk and remote areas.
- Focused screening in **mines, construction sites, tea gardens**, and **urban slums**.

4. Tuberculosis: Key Facts

Characteristic	Description
Cause	*Mycobacterium tuberculosis* (airborne transmission)
Preventability	Preventable and curable with antibiotics; **BCG vaccine** for infants
High-Risk Groups	HIV patients, diabetics, undernourished, smokers
MDR-TB/XDR-TB	Resistance to key drugs like **isoniazid and rifampicin**; costlier alternatives needed
Global Burden (2023)	India accounts for **~26% of TB cases and deaths worldwide**

5. Challenges Faced by Vulnerable Groups

🔶 **Nutritional Deficiency**

- **Undernutrition** worsens TB outcomes.
- **Ni-kshay Poshan Yojana** and *Mitras* face gaps in delivery and awareness.

🔶 **Diagnostic Delays**

- Misidentification of symptoms, especially among **homeless and women**.
- Lack of sputum collection options, **cultural constraints** for women.

🔶 **Social Stigma**

- TB associated with **social shame**, especially in women and urban poor.
- *Homeless not classified as a vulnerable group* under NTEP, limiting targeted outreach.

🔶 **Legal Identity & Access Issues**

- Lack of **Aadhar or bank accounts** bars homeless TB patients from accessing schemes.

🔶 **Childhood TB**

- Hard to diagnose due to **low bacterial load** and **inadequate pediatric testing**.
- Only **12% confirmation rate** using molecular tests in children (2022).

🔶 **Mental Health Neglect**

- TB patients often face **psychological stress**, but mental health services are limited.

6. Targeted Interventions to Accelerate Elimination

Action Area	Intervention Needed
High-Risk Group Focus	Analyze TB data by occupation & locality; screen **migrant workers, tea garden laborers**
Urban Homeless Inclusion	Include them as vulnerable category under NTEP
Jan Bhagidari (People's Role)	Encourage citizen participation through **Ni-kshay Mitras** to spread awareness
Enhanced Diagnostics	Expand **NAAT machines**, **mobile X-ray vans** in remote and tribal regions

Nutrition & DBT Reforms	Streamline DBT delivery, improve tracking through Ni-kshay portal
Mental Health Integration	Provide counseling through Ayushman Arogya Mandirs and community health workers
Child TB Strategy	Develop child-friendly diagnostics and drug resistance tracking

END Conclusion

India's vision to eliminate TB by 2025 is **ambitious yet achievable**, given the strong foundation laid under **NTEP**, increasing **community engagement**, and improved **diagnostic reach**. However, **success hinges on tackling deep-seated vulnerabilities**, enhancing **nutritional and psychological support**, and maintaining momentum through **public-private partnerships and technological innovation**. A **rights-based, inclusive approach** will ensure that no TB patient is left behind.

SCIENCE & TECHNOLOGY

ISRO's Semi Cryogenic Engine Test

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Space Technology | Scientific Innovations and Developments**

1. Why in News?

- The **Indian Space Research Organisation (ISRO)** has successfully conducted the **second short-duration hot test**of its **semi cryogenic engine** at the **ISRO Propulsion Complex (IPRC), Mahendragiri**.
- This is part of India's push to develop **next-generation heavy-lift launch capabilities** for future space missions.

2. What is a Semi Cryogenic Engine?

Parameter	Description
Type	Liquid rocket engine using **liquid oxygen (LOX)** and **refined kerosene (RP-1)**.
Purpose	To power the **booster stages** of future **heavy-lift launch vehicles**.
Fuel Properties	- LOX-RP1 offers **high thrust** and **greater density impulse**. - **Kerosene** is **cheaper** and **easier to store/handle** than liquid hydrogen.
Benefits	- **Lower operational costs** - **Simplified logistics** - **Higher payload efficiency** compared to full cryogenic systems.

3. What is a Hot Test?

- A **hot test** involves igniting the engine using **actual propellants** under real conditions to validate:
  - **Ignition capability**
  - **Pressure and flow control**
  - **Thermal behavior**
- The recent test marks the **second milestone** in validating ISRO's **semi-cryogenic engine technology**.

4. Significance of Semi Cryogenic Technology

Advantages Over Cryogenic Engines
Uses kerosene instead of liquid hydrogen, making it cost-effective and less complex to manage
Higher density impulse allows more compact fuel tanks, reducing overall rocket size and cost
Critical for reusable stages in future launch systems

5. Role in Next Generation Launch Vehicle (NGLV)

Feature	Details
Name	Next Generation Launch Vehicle (NGLV)
Type	Reusable heavy-lift launch vehicle under development
Payload Capacity	Up to 30 tonnes to Low Earth Orbit (LEO)
Design	3-stage rocket with: • 1st & 2nd stages: LOX-based semi-cryogenic engines • 3rd stage: Cryogenic upper stage
Applications	• Launching communication satellites • Supporting deep space missions • Enabling human spaceflight and cargo transport
Reusability	First stage designed for reuse, reducing launch costs significantly

6. Cryogenic vs Semi Cryogenic Engines – Key Differences

Criteria	Cryogenic Engine	Semi Cryogenic Engine
Fuel	Liquid Hydrogen (LH2) + LOX	Refined Kerosene (RP-1) + LOX
Handling	Complex (LH2 is highly volatile)	Easier (kerosene is stable)
Thrust	High, but low density impulse	Moderate thrust, **high density impulse**
Cost	Expensive	**Cost-effective**
Use	Upper stages (long burn)	**Booster stages** (initial heavy lift)

7. Conclusion

The development of **semi cryogenic engine technology** marks a significant leap in **India's space propulsion capabilities**.
It lays the foundation for **cost-effective, high-capacity, and reusable launch systems** through the upcoming **Next Generation Launch Vehicle (NGLV)**.
As ISRO eyes **deep space exploration and human missions**, semi cryogenic propulsion will be a **critical enabler of India's space ambitions**.

Asteroid 2024 YR4 and the Moon Collision Risk

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Space Technology | Disaster Management | Scientific Innovations**

1. Why in News?

- **NASA** has revised its impact assessment of **Asteroid 2024 YR4**, initially flagged as a **potential Earth threat**, now predicting a **3.8% chance of it colliding with the Moon** on **December 22, 2032**.
- While not dangerous to Earth, a **moon impact** could affect **lunar missions** and create a **massive crater**, raising concerns for future space exploration infrastructure.

2. What is Asteroid 2024 YR4?

Feature	Details
Discovery	December 2024 by **ATLAS (Asteroid Terrestrial-impact Last Alert System)** telescope in **Chile**
Type	**Near-Earth Asteroid (NEA)**
Size	Estimated **53–67 meters wide** – equivalent to a **15-storey building**
Orbit	Brings it within **1.3 AU** (Astronomical Units) of Earth (1 AU = ~150 million km)

🪨 **Impact Risk**:

- **Earth**: No current impact risk
- **Moon**: **3.8% probability of collision in 2032**
- Potential to cause **significant surface disruption**, affecting **robotic/human missions**, especially if lunar stations are established nearby.

3. What are Asteroids?

Feature	Description
Definition	Rocky, airless bodies formed during the **early solar system (~4.6 billion years ago)**.
Composition	Mostly **rocky or metallic**, sometimes containing **organic compounds**.
Location	- **Main Asteroid Belt** (between Mars and Jupiter) - **Trojan Asteroids** (at Lagrangian points in a planet's orbit) - **Near-Earth Asteroids (NEAs)** – cross or come close to Earth's orbital path
Size Range	From a few **meters to hundreds of kilometers**.
NEAs	Monitored closely for **potential Earth impact risks**.

4. Key Classifications of Asteroids

Category	Characteristics
Main Belt Asteroids	Located between **Mars and Jupiter**, most common
Trojans	Share a planet's orbit, especially **Jupiter**, at **Lagrangian points (L4 & L5)**
Near-Earth Asteroids (NEAs)	Orbits bring them **within 1.3 AU of Earth** – regularly monitored for impact risk

5. Space Agencies & Initiatives Monitoring NEAs

Initiative	Agency	Purpose
ATLAS	University of Hawai'i (funded by NASA)	Detects asteroids days or weeks before close approach
NETRA Project	**ISRO**	Monitors **space debris** and tracks **potential threats**
Hera Mission	**European Space Agency (ESA)**	Part of **NASA-ESA AIDA project** to study deflection techniques
Planetary Defense Coordination Office (PDCO)	**NASA**	Coordinates tracking and threat response strategies for Earth-impacting objects

DART Mission	NASA	Successfully demonstrated **kinetic impactor technique** by deflecting Dimorphos asteroid in 2022

6. Why Do Moon Impacts Matter?

- The **Moon has no atmosphere**, so objects don't burn up – impacts create **craters directly**.
- **Future lunar missions** (like **Artemis** and **ISRO's LUPEX**) may be endangered by **surface destabilization** or **ejecta clouds**.
- Lunar resources, habitats, and satellite equipment could be damaged depending on **impact proximity**.

7. Conclusion

While **Asteroid 2024 YR4** does **not pose a threat to Earth**, its **potential impact on the Moon** reminds us of the need for robust **space surveillance, planetary defense**, and **mission risk mitigation** strategies.
As lunar exploration expands, understanding such **celestial risks** will be essential for **future-proofing extraterrestrial infrastructure**.

India's Space Odyssey

📌 **Syllabus Mapping:**
✅ **GS Paper 3 – Space Technology, Scientific Innovations**
✅ **GS Paper 2 – Achievements of Indians in Science and Technology**

1. Why in News?

- At the **Global Space Exploration Summit (GLEX) 2025** held in **New Delhi**, India highlighted its space programme as a tool for national development.
- The **European Space Agency (ESA)** expressed interest in collaborating with India for deep-space missions.

2. GLEX 2025 Highlights

- Organized by **ISRO**, **International Astronautical Federation (IAF)**, and **Astronautical Society of India (ASI)**.
- Featured prominent figures like astronaut **Rakesh Sharma** and major space agencies (NASA, ESA, Roscosmos).
- Aimed at international partnerships, sharing knowledge, and developing sustainable exploration strategies.

3. Phases in the Evolution of India's Space Programme

A. 1960s–1970s: Humble Beginnings

- 1963: First **sounding rocket** (Nike-Apache) launched from **Thumba, Kerala**.
- Initial focus: Weather studies, atmospheric data, basic infrastructure.

B. 1980s–1990s: Indigenous Capability

- Development of **SLV**, **INSAT**, and **IRS** satellites.
- Emphasis on **self-reliance**, communication, meteorology, and agricultural monitoring.

C. 2000s–2010s: Global Recognition

- 2008: **Chandrayaan-1** discovered water on the Moon.
- 2014: **Mangalyaan** (Mars Orbiter) – 1st nation to reach Mars on maiden attempt.
- 2017: Launched **104 satellites** in one go via **PSLV-C37**.

D. 2020s–2040s: Future Frontiers

- Upcoming: **Gaganyaan** human spaceflight, **Bharatiya Antariksh Station**, missions to **Moon, Mars, and Venus**.
- Rise of private players like **Skyroot Aerospace** (Vikram-S) and **Agnikul Cosmos**.

4. Socio-Economic Contributions of India's Space Programme

Sector	Contribution
Governance	**SVAMITVA**, e-KYC for DBT, property rights digitization
Agriculture	**FASAL**, **Bhuvan-Krishi**, crop prediction, soil and pest mapping
Disaster Management	Cyclone alerts (INSAT), drought monitoring (NADAMS)
Digital Inclusion	Broadband in remote areas via **GSAT satellites**
Defence	Surveillance via **Cartosat**, secure comms (GSAT-7), **NavIC** for precision

5. Challenges Facing India's Space Sector

- **Low Budget**: ISRO gets only 0.04% of GDP (vs. NASA's 0.28%).
- **Import Dependence**: Key components like sensors and semiconductors are imported.
- **Space Debris**: 114+ Indian objects are classified as space debris.
- **Security Gaps**: Limited early warning systems; inadequate ASAT capabilities.
- **Brain Drain**: High-quality STEM talent often emigrates.
- **Limited Commercial Share**: India holds just 2–3% of global space economy.
- **Geopolitical Competition**: China's **Tiangong**, **BeiDou** overshadow India's efforts.

6. Strategic Measures for Strengthening India's Space Ecosystem

A. Funding & Infrastructure

- Launch **Sovereign Space Bonds**, establish **Indian Space Fund** via IN-SPACe.
- Co-finance big missions with private players and VCs.

B. Technology & Innovation

- Set up **Space Tech Innovation Hubs**.
- Focus: AI for satellites, reusable rockets, cryogenic engines.

C. Talent Retention

- Launch **space fellowships**, build **Space Universities**, incentivize domestic R&D.

D. Debris Management

- Draft a **National Space Sustainability Plan**.
- Invest in **Space Situational Awareness (SSA)** and **de-orbiting tech**.

E. Global Collaboration

- Enhance ties with NASA (e.g., **NISAR**), Roscosmos (e.g., **Gaganyaan**), ESA, and JAXA (e.g., **LUPEX**).
- Build alliances with emerging nations in **Africa, ASEAN**.

F. Boost Private Sector

- Form a **National Space Innovation Framework**.
- Support MSMEs in **satellite, payload, data analytics** sectors.

7. Major Collaborations

Partner	Projects/Initiatives
Russia	Gaganyaan, CE-20 tech, astronaut training (Soyuz-T11 mission)
USA (NASA)	**NISAR**, astronaut training, Mars exploration, ISS mission (Axiom-4)
France (CNES)	**Megha-Tropiques**, ocean & weather satellites
Japan (JAXA)	**LUPEX** for Moon's polar water detection
ESA (Europe)	Ready to collaborate on deep space, planetary defense, asteroid missions

8. Conclusion

India's space journey—starting from Thumba to planning a space station—reflects not just scientific ambition but a **developmental vision**. With targeted reforms in funding, tech, talent, and partnerships, India is well-positioned to emerge as a **global space leader**, serving both national interest and global cooperation.

Bharat 6G Vision

📌 **Syllabus Mapping:**
✅ ***GS Paper 3*** **– Growth & Development | IT & Computers | Indigenization of Technology | Scientific Innovations**

1. Why in News?

India reiterated its commitment to be a **global leader in 6G technology** during the **Bharat 6G 2025 International Conference**, aligning with the **Bharat 6G Vision**, launched in **2023**, to harness 6G as a **civilisation-scale opportunity**for digital transformation.

2. What is Bharat 6G Vision?

🌐 **Overview:**

- **Launch:** 2023 by the Government of India.
- **Objective:** Position India as a **global hub for 6G innovation and deployment** by **2030**, ensuring **affordability**, **ubiquity**, and **sustainability** in digital communications.

🧭 **Key Features of Bharat 6G Vision:**

Feature	Details
Mission Timeline	2022–2031 (9-year phased plan) with targets like R&D breakthroughs, pilot projects, and global leadership in standards.
Research Infrastructure	Establishment of: - **6G Terahertz (THz) Testbed** - **Advanced Optical Communication Testbed**
Educational Support	100 **5G/6G labs** sanctioned in **academic institutions** in FY 2023–24 to foster research and industry-academia collaboration.
Institutional Mechanism	Launch of **Bharat 6G Alliance (B6GA)**, integrating academia, industry, start-ups, and government for coordinated research and deployment.
Global Alignment	Fully aligned with **ITU's IMT 2030 Framework**. India played a **front-runner role** in the global standard-setting process.

3. What is 6G Technology?

🚀 **Key Highlights:**

- **6G = Sixth-generation wireless tech**, succeeding 5G.
- Expected **speeds of 1 Tbps** and **latency as low as 100 microseconds**.
- Designed to provide:
  - **Ubiquitous Connectivity**
  - **Hyper-intelligent Networking**
  - **Immersive Technologies** (AR/VR/MR)
  - **AI-driven Automation**
  - **Green Communication Technologies**

📖 **IMT 2030 (ITU Framework):**

- 6G is globally referred to as **IMT-2030** under **International Telecommunication Union (ITU)**.
- India is a **key contributor** in ITU's standard-setting process.

4. Significance of Bharat 6G Vision for India

Dimension	Significance
Digital Sovereignty	Reduces reliance on foreign telecom infrastructure and fosters **indigenous innovation**.
Economic Growth	Unlocks a **multi-trillion-dollar digital economy**, fueling **start-ups**, **manufacturing**, and **R&D**.
Geostrategic Edge	Enhances India's role in global technology governance and **telecom diplomacy** (similar to 5G rollout in African & ASEAN countries).
Green Technology	Focus on **energy-efficient networks** and sustainable hardware, aligning with SDG goals.
Inclusivity	Promises **affordable & universal access**, bridging rural-urban and digital-divide gaps.
Atmanirbhar Bharat	Catalyses **Make in India** for telecom equipment and chips, reducing import dependency.

5. Challenges Ahead

- **High R&D Costs**: Requires billions in investment over a decade.
- **Global Competition**: Rivals like China, the US, and South Korea are investing heavily.
- **Skilled Manpower Gap**: India needs to **upskill workforce** in photonics, THz spectrum, AI, and quantum computing.
- **Spectrum Allocation**: THz spectrum is still being studied for viability and safety.

- **Security Concerns**: 6G networks will increase **cyber vulnerabilities** and require **quantum encryption** readiness.

6. Way Forward

✅ **Policy & Institutional Support:**

- Launch a **National 6G Mission Fund** under the Digital India initiative.
- Promote **PPP model** for faster R&D and productization.

✅ **Skilling & Education:**

- Integrate **6G curriculum** in engineering and IT institutes.
- Partner with IITs, IIITs, and NITs for **domain-specific research hubs**.

✅ **Global Collaboration:**

- Collaborate with **Quad countries**, EU, and **ITU** for technology exchange, standard harmonization, and pilot deployments.

✅ **Boost Domestic Manufacturing:**

- Incentivise 6G-compatible **semiconductor, chipset, and base station** manufacturing under the **PLI scheme**.

⬅ END Conclusion

The **Bharat 6G Vision** marks a **paradigm shift** in India's digital ambitions. With timely implementation, India has the potential to **not only become self-reliant** but also to **lead the global digital future**. A robust blend of **policy thrust, tech innovation, and human capital** will determine whether India becomes a **net exporter of 6G solutions** by 2030 or merely a user.

Chandrayaan-5 (LUPEX)

📌 **Syllabus Mapping:**
✅ ***GS Paper 3* – Space Technology | Scientific Innovations | International Collaboration in Science**

1. Why in News?

India and Japan have announced their collaborative **Chandrayaan-5 (LUPEX)** mission, aimed at **exploring lunar water ice** at the Moon's **polar regions**, building on the success of **Chandrayaan-3** and the planned **Chandrayaan-4 lunar sample return mission**.

2. What is LUPEX (Chandrayaan-5)?

Feature	Details
Mission Name	Chandrayaan-5 (LUPEX – Lunar Polar Exploration)
Launch Year	**2027–2028**
Launch Vehicle	**Japan's H3 rocket**
Agencies Involved	**ISRO (India)** – lander **JAXA (Japan)** – rover **ESA** – mass spectrometer **NASA** – neutron spectrometers
Mission Duration	**~100 days**, extendable to **1 year**
Proposed Landing Region	**Lunar South Pole**, potentially the **far side of the Moon**

3. Mission Objectives of LUPEX

- **Explore and map lunar water ice** presence and its spatial distribution
- **Drill up to 1 meter** into the lunar regolith to analyze:
  - **Water content**
  - **Isotopic composition**
  - **Volatiles and minerals**
- **Conduct in-situ surface and subsurface analysis** using:
  - Spectrometers
  - Thermal sensors
  - Seismometers
- **Support future lunar habitability studies** by evaluating water as a resource

4. Background and Context

🛰️ **Previous Missions:**

- **Chandrayaan-1 (2008)**: First mission to detect water molecules on the Moon
- **Chandrayaan-2 (2019)**: Orbiter success; lander crashed
- **Chandrayaan-3 (2023)**: Made **India the first to soft-land on the lunar south pole**
- **Chandrayaan-4 (Upcoming)**: Lunar **sample-return mission** — a precursor to LUPEX

🌑 **Why Polar Regions?**

- Permanently shadowed craters
- Potential presence of **frozen water** (key for future lunar bases)
- Strategic location for **sustainable exploration**

✅ **Prelims Pointers**

Term/Entity	Significance
LUPEX	Lunar Polar Exploration Mission by ISRO & JAXA
JAXA	Japan Aerospace Exploration Agency
Mass Spectrometer (ESA)	For detecting water and volatile elements
Neutron Spectrometer (NASA)	For identifying hydrogen deposits (proxy for water)
H3 Rocket	Japan's next-gen heavy-lift launch vehicle
Far Side of the Moon	Always faces away from Earth, unexplored region
Chandrayaan-3	First mission to successfully land near lunar south pole

END Conclusion

The **Chandrayaan-5 (LUPEX)** mission marks a pivotal shift in **global lunar exploration** — focusing not only on **scientific discovery** but also on **resource mapping for future lunar habitation**. By combining **India's engineering** and **Japan's robotics expertise**, LUPEX strengthens Indo-Japanese space diplomacy and positions both countries at the forefront of **moon-based exploration**.