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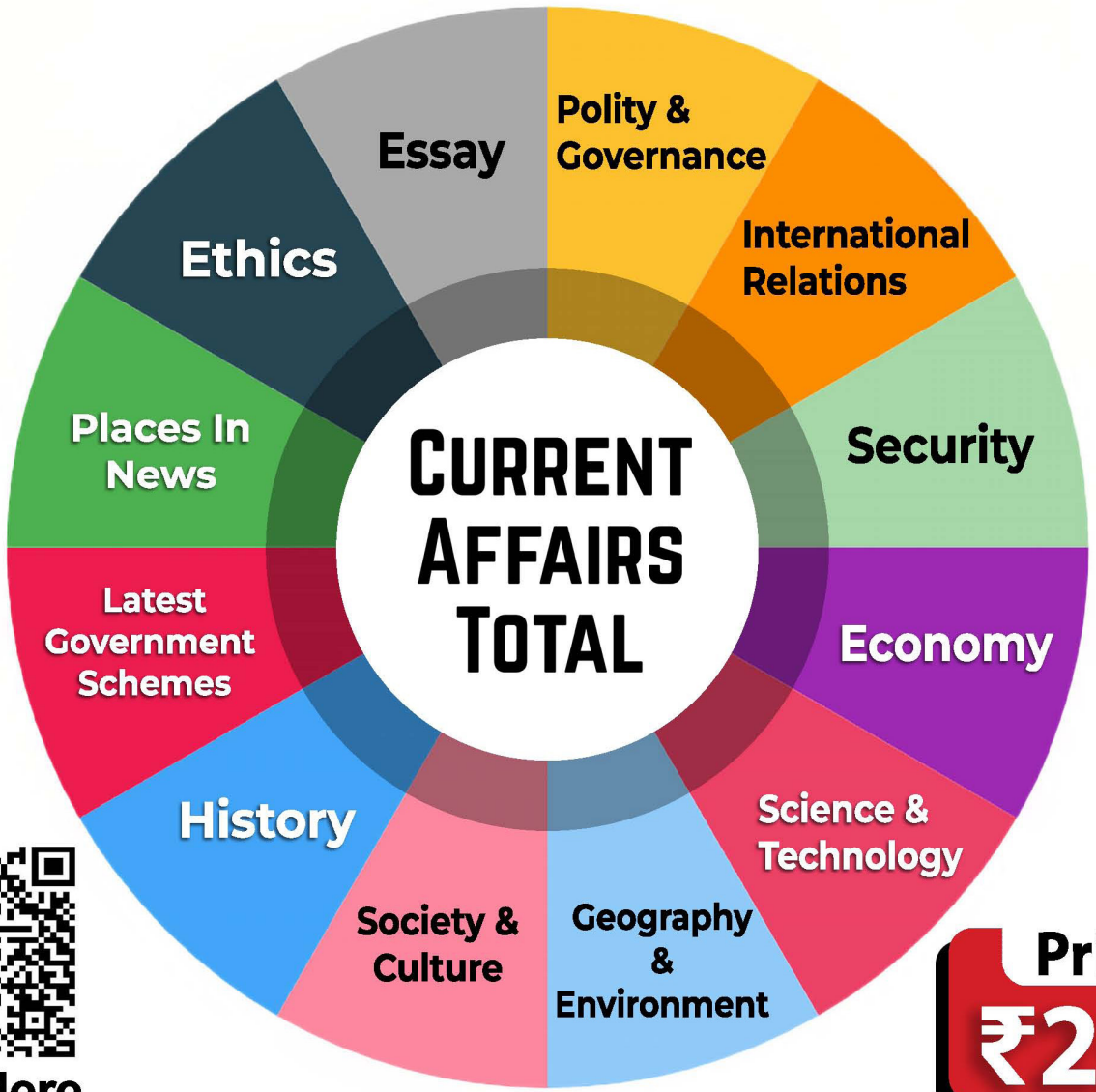

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POLITY & GOVERNANCE

1. Preventive Detention in India

Context

Preventive detention, though intended as an **exceptional power** under **Articles 22(3)–(7)**, is often **misused** by **executive authorities**, creating a **constitutional** "**Bermuda Triangle**" where **fundamental rights** like **liberty**, **equality**, and **due process vanish** amid **blurred lines** between **public order** and **dissent**.

What is Preventive Detention?

Preventive detention refers to the **state's power to detain a person without trial**, based on the **anticipation of future threats to public order or national security**. Unlike punitive detention, which follows conviction, preventive detention is **pre-emptive** and often bypasses traditional safeguards like fair trial and presumption of innocence.

Historical Background

1. **Colonial Origins**: The practice dates back to the **Bengal Regulations of 1818**, used by the British to suppress dissent.
2. **Government of India Act, 1935**: Empowered provinces to enact preventive detention laws.
3. **Post-Independence**: Despite its colonial roots, India retained and expanded preventive detention laws, citing communal unrest and national security concerns.

Constitutional Provisions

1. **Article 22(3)–(7)**: These clauses **constitutionalize preventive detention**, allowing the state to detain individuals without trial under certain conditions.
2. Parliament can legislate to **bypass advisory board review** in special circumstances.
3. Critics argue that Article 22 creates a **"Police-Constable Constitution"**, isolating detainees from the protections of **Articles 14, 19, and 21.**

Judicial Interpretations

1. **Early Cases: A.K. Gopalan v. State of Madras (1950)**: The Court upheld preventive detention, **limiting scrutiny to Article 22** and rejecting broader fundamental rights claims.
2. **Progressive Shift: Maneka Gandhi v. Union of India (1978)**: Expanded Article 21 to include **fair, just, and reasonable procedure**, integrating Articles 14, 19, and 21 as a **"Golden Triangle"** of rights.
3. **Regression: A.K. Roy v. Union of India (1982)**: The Court reverted to a narrow interpretation, excluding preventive detention from the scope of Articles 14, 19, and the enriched Article 21.
4. **Recent Cases:**
   a. **Rekha vs State of Tamil Nadu (2011):** The power of preventive detention is an **exception to Article 21** and must be treated as such.
   b. **Banka Sneha Sheela v. State of Telangana (2021):** Any action involving preventive detention must be tested against the standards of Article 21.
   c. **S.K. Nazneen v. State of Telangana (2023):** Preventive detention was not justified when the case pertained to a mere law and order issue rather than a public order concern.
   d. **Dhanya M. v. State of Kerala (2025)**: The Supreme Court emphasized that preventive detention must be used **sparingly**, only for **public order (serious threats)**, not **mere law and order issues (minor disturbances)**. It reaffirmed that such detention is an **exception to Article 21** and must meet strict constitutional safeguards.

Contemporary Relevance

1. Laws like **KAAPA (Kerala Anti-Social Activities (Prevention) Act, 2007)** are criticized for **vague definitions** of "goonda" and "rowdy", enabling misuse.
2. Despite judicial warnings, **executive overreach** continues, with preventive detention often used to **circumvent bail** or **target dissenters**.

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Challenges and Way Forward

Challenges	Way Forward
Executive Overreach: Detention for minor law and order issues.	Restrict to **serious threats** like **terrorism or organized crime**.
Weak Procedures: Limited judicial oversight.	Strengthen **judicial review** and advisory boards.
Broad Legal Definitions: Terms like "goonda" too vague.	Narrow scope and clearly define **public order**.
Violation of Rights: Undermines fundamental rights.	Apply **fair procedure, proportionality, and due process**.
Risk of Misuse: Targeting dissenters or political opponents.	Implement **transparent and accountable procedures**.

2. Alternative Dispute Resolution

Why in the News?

1. The **Minister of Law and Justice**, reaffirmed the government's commitment to **legal reforms rooted in India's civilisational ethos**, highlighting the doctrine of *Panch Parmeshwar* for collective dispute resolution.
2. The **India Justice Report 2025** exposed significant challenges in India's justice delivery system — reigniting focus on **Alternative Dispute Resolution (ADR)** mechanisms.
3. With **over 4.5 crore pending cases** across courts, ADR is seen as a **faster, cost-effective, and inclusive** model for justice delivery.

Key Highlights

1. **Roots of ADR in India's Civilisational Ethos**
   a. The idea of resolving disputes through **consensus and community participation** is deeply embedded in India's cultural and civilisational heritage.
   b. The **doctrine of Panch Parmeshwar**, often referred to by the Law Minister, reflects this ancient system — where **five respected elders (Panchas)** in a village collectively decided disputes based on fairness, truth, and social harmony.
   c. This system symbolised the principle of **collective wisdom and reconciliation**, rather than confrontation.
   d. Modern India draws inspiration from this ethos in shaping **Alternative Dispute Resolution (ADR)**; a mechanism that seeks to deliver justice without the delay and expense of formal court proceedings.
2. **Constitutional and Legal Foundation of ADR**
   a. Post-Independence, the **Constitution of India** laid the groundwork for equitable justice through **Article 39A**, which directs the State to ensure *equal justice and free legal aid* to all citizens.
   b. To operationalise this principle, the **Code of Civil Procedure, 1908** was amended to include **Section 89**, which legally recognised 4 main ADR mechanisms i.e., **arbitration, conciliation, mediation, and judicial settlement (including Lok Adalat)**.
3. **Institutionalisation through the Arbitration and Conciliation Act, 1996 (Amended 2021)**
   a. To further strengthen ADR, the **Arbitration and Conciliation Act, 1996** was enacted. The Act was later **amended in 2021** to modernise the system and enhance its credibility.
   b. The amendments introduced several key provisions:
      i. Establishment of the **Indian Arbitration Council** to regulate institutional arbitration and promote professional standards.
      ii. A **time limit of 180 days** for resolving disputes through arbitration to ensure timely justice.
      iii. Encouragement for resolving **civil and compoundable offences** (like theft or trespass) through mutual settlement.
   c. This marked a shift from ad hoc arbitration to a **structured, transparent, and time-bound ADR framework**, aligning with global best practices.
4. **Lok Adalats: Taking Justice to the Grassroots**
   a. The idea of people's courts, or **Lok Adalats**, was institutionalised through the **Legal Services Authorities Act, 1987**, inspired by Article 39A. These forums enable **speedy and cost-free justice**, particularly for the poor and marginalised.

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b. The first **Lok Adalat** was held in **Gujarat in 1999**, setting a precedent for community-based justice.
c. There are different forms such as **Permanent Lok Adalats** (for public utility disputes), **National Lok Adalats**, and **e-Lok Adalats**, which function digitally.
d. Their **decisions are final and binding**, though parties dissatisfied with the outcome may approach a regular court.
e. This innovation ensured that justice was not confined to courtrooms but became **accessible at the community level**, bridging the gap between people and the law.

5. Mediation as a Transformative Tool for Justice

a. Mediation; one of the key components of ADR has evolved as a **tool for social transformation**.
b. Former Chief Justice **D.Y. Chandrachud** described mediation as a process that aligns *social norms with constitutional values*.
c. Unlike adversarial litigation, mediation encourages **dialogue, empathy, and mutual respect**.
d. It allows parties to resolve disputes **in their own language**, maintaining relationships and dignity.
e. The concept of **pre-litigation mediation**, where disputes are settled before reaching court, further reduces pendency.
f. Mediation's focus on **restorative justice** over retribution makes it an essential part of India's legal reform agenda.

6. The Current Crisis: Pendency and Pressure on the Judiciary

a. The **India Justice Report 2025** and **National Judicial Data Grid (NJDG)** highlight the scale of India's judicial pendency crisis:
   i. Approximately **5 crore** cases are pending in courts.
   ii. The **Supreme Court** alone has around **81,768** cases, and **High Courts** nearly **62.9 lakh**.
   iii. High Courts face **33% judicial vacancies**, and District Courts around **21%**.
   iv. In States like **Uttar Pradesh, Himachal Pradesh, and Kerala**, judges handle workloads exceeding **4,000 cases per judge**.
b. Such overwhelming numbers underline why India urgently needs **ADR as a parallel track for justice delivery**.

7. Towards a Global and Inclusive ADR System

a. The government envisions a model combining **India's traditional ethos (Panch Parmeshwar)** with **modern international arbitration standards**.
b. Efforts are underway to:
   i. Promote **ADR education and training** for mediators and arbitrators.
   ii. Expand **digital ADR platforms** such as e-Lok Adalats.
   iii. Ensure **cross-border recognition** of arbitral awards and build confidence among global investors.
c. This marks India's transition from a litigation-heavy system to a **negotiation-driven justice culture**, aligning efficiency with inclusivity.

Challenges and Way Forward

Challenges	Way Forward
1. Low Public Awareness about ADR mechanisms, especially in rural areas.	Launch **nationwide awareness campaigns** through Legal Services Authorities and Panchayati Raj institutions.
2. Lack of trained mediators and arbitrators.	Develop **certified ADR training programmes** under the Indian Arbitration Council.
3. Resistance from traditional legal practitioners.	Encourage **integration of ADR into legal education** and judicial training.
4. Inconsistent implementation across States.	Establish a **uniform national ADR policy and monitoring body** for standardisation.
5. Technological and infrastructural gaps.	Expand **e-Lok Adalats and online mediation platforms** to ensure accessibility.

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3. Ban on Post-Facto Environmental Clearances

Why in the News?

1. The **Supreme Court of India (May 16, 2025)** declared that **post-facto environmental clearances (ECs)** are **illegal**.
2. This judgment has major implications for India's **infrastructure, real estate, industry, and environmental governance**, raising concerns over mass demolitions, regulatory confusion, and the balance between **development and environmental protection**.

Supreme Court Verdict (May 2025)

1. The Supreme Court of India declared that **post-facto (retrospective) environmental clearances** are **illegal**.
2. **What does this mean?**
   a. If a factory, building, or highway was built without taking **prior environmental clearance (EC)**, it cannot later apply for approval and get legalised.
3. In simple terms: **"No clearance beforehand = illegal project."**
4. This ruling has shaken governments, industries, and citizens, because many existing projects were relying on post-facto approvals.

How Did We Get Here? - The Legal Backdrop

1. This debate did not start in 2025. It goes back over a decade:
   a. **2013**: The Southern Bench of the **National Green Tribunal (NGT)** in *S.P. Muthuraman v. Union of India* said projects cannot get clearance after construction has begun.
   b. **2013–2025**: Despite this, many governments and industries continued with projects assuming they would eventually get regularised.
   c. **2025**: In *Vanashakti v. Union of India*, the Supreme Court finally upheld the NGT's stand; **closing the door on retrospective approvals once and for all.**

Why is the Verdict Problematic?

While the intention of the Court is to protect the environment, some **practical problems** arise:

1. **No guidance on what to do next** – States are interpreting the judgment differently. Some have already begun **demolition drives** against schools, industries, and even public infrastructure.
2. **Demolition may harm the environment** – Destroying thousands of buildings will create **huge debris, emissions, and displacement**, ironically damaging the environment.
3. **All violations treated the same** – Small procedural lapses and large-scale violations are being equated.
4. **Fear-driven compliance** – Instead of accountability, the ruling may push projects underground, making monitoring harder.
5. **Legal ambiguity for coastal projects** – The order mentions the **Environmental Impact Assessment (EIA) Notification, 2006**, but is silent on the **Coastal Regulation Zone (CRZ) Notification, 2011**. This has created confusion for ports, tourism, and other coastal projects.

Implications Beyond EIA

1. India's environmental regulation doesn't depend on one law. It is based on multiple acts:
   a. **Water Act, 1974**
   b. **Air Act, 1981**
   c. **Environment Protection Act, 1986** (under which EIA and CRZ notifications are issued)
2. If the Supreme Court's ruling is interpreted broadly, then **any unit operating without prior consent from State Pollution Control Boards** could face closure. This would have **massive economic and social consequences.**

Why Do Blanket Demolitions Don't Work?

1. Many violations were not intentional but caused by **delays, confusion, or inconsistent rules** over 12 years.
2. Demolition may **satisfy the law on paper**, but it won't necessarily serve **environmental justice**.
3. The principle of **sustainable development (Article 21, Right to Life)** says that **environment and livelihoods must be balanced**.

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The Suggested Middle Path – Hybrid Compliance Model

1. Experts propose a **balanced approach** instead of blanket demolition:
   a. **No regularisation in eco-sensitive zones.**
   b. **Mandatory environmental assessments** for existing non-compliant projects.
   c. **Heavy fines and restoration duties** (polluters pay principle).
   d. **Independent monitoring** of projects.
   e. **Time-bound compliance window** to fix violations.
2. This way, violators are not pardoned but forced to **pay, restore, and comply**. The focus shifts from **punishment → prevention and reform**.

What Happens Next?

1. The Supreme Court has agreed to **review its verdict** after petitions by industry associations.
2. This review is not to weaken the judgment, but to:
   a. Provide clarity on what to do with existing projects.
   b. Avoid chaos in coastal and industrial projects.
   c. Create a **modern, intelligent compliance system** that protects nature **without destroying livelihoods**.

Way Forward

1. Adopt a **hybrid compliance model** → Instead of demolition, impose fines, restoration duties, and mandatory environmental audits.
2. Use **restoration-based penalties** and promote sustainable retrofitting of existing structures.
3. Differentiate cases → Minor violations can be regularised with penalties, while major/ecologically sensitive violations face strict action.
4. Clarify scope through **review petitions** and stakeholder consultations to avoid confusion.
5. Frame **transition rules** → give time-bound compliance windows and strengthen Pollution Control Boards for monitoring.
6. Promote **self-reporting, transparent monitoring, and digital compliance tracking** to build accountability.

Conclusion

The SC ruling makes it clear that environmental clearance must be **prior, not post-facto**. Instead of blanket demolitions, India needs a **balanced compliance system** that enforces accountability through fines and restoration, while ensuring **sustainable development and growth move together**.

4. UPSC marks 100 years

Why in the News?

1. The **Union Public Service Commission (UPSC)** marked **100 years of its establishment on October 1, 2025**.
2. It has been a **guardian of meritocracy** and an institution ensuring **fairness, integrity and trust** in India's civil services recruitment system.

Key Highlights

1. **What is UPSC and why does it matter?**
   a. The **idea of an independent Public Service Commission** emerged with the **Government of India Act, 1919**, and materialised in 1926 following the **Lee Commission (1924)** recommendations.
   b. Initially set up as the **Public Service Commission**, it evolved into the **Federal Public Service Commission under the Government of India Act, 1935**, and finally became the **Union Public Service Commission in 1950** with the adoption of the Constitution.
   c. **Article 315** establishes UPSC and State PSCs.
   d. Today, UPSC is the **premier recruitment body** for diverse services including **Civil, Engineering, Forest, Medical, and Statistical Services**, ensuring **merit-based selection**.
2. **The Foundation and Pillars of UPSC**
   a. **Trust**: Built over decades through **transparent procedures**, impartial evaluation, and strong safeguards against malpractice.
   b. **Integrity**: Maintained by protecting UPSC from **political influence**, ensuring confidentiality, and upholding independence.

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c. **Fairness**: Equal opportunity to candidates across **geographies, socio-economic backgrounds, and languages**, making it a true **level playing field**.

d. Inspired by the **Bhagavad Gita's principle of duty without attachment**, UPSC conducts its role with **rigour, fairness, and neutrality**.

3. **The 'Indian Dream' and Aspirants' Diversity**

a. Once dominated by **urban elite candidates**, the UPSC examination today attracts aspirants from **remote districts and underprivileged backgrounds**, showcasing the **democratisation of opportunity**.

b. Nearly **10–12 lakh candidates apply** annually for prelims, out of which a select group progresses to mains and interviews.

c. Examinations are conducted in **22 constitutional languages** and **48 optional subjects**, evaluated anonymously, ensuring fairness.

d. The logistical scale includes **2,500+ prelims venues**, meticulous management of subject-wise mains papers, and **special facilities for differently-abled candidates**.

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4. **The Role of Unsung Heroes**

a. **Paper-setters, evaluators, and academic experts** across 48 disciplines form the **backbone of UPSC**.

b. They ensure **accuracy, confidentiality, and fairness** in evaluation, while remaining **anonymous and selfless** in their contribution.

c. Their work has ensured continuity even during **disruptions like the COVID-19 pandemic**.

5. **UPSC's Contribution to Nation-Building**

a. Civil servants recruited by UPSC have:

i. Managed crises, reforms, and public administration.

ii. Handled challenges in **economy, environment, infrastructure and security**.

iii. Served as the **invisible hand of governance**, touching the lives of every citizen.

6. **Reforms and the Road Ahead**

a. UPSC has adopted **digital reforms** including an **online application portal** and **face-recognition technology** to prevent impersonation.

b. **PRATIBHA Setu initiative**: Provides opportunities for candidates who reach the interview stage but don't make the final list. It Connects them to other government/PSU/private opportunities.

c. Plans to incorporate **AI and digital technologies** for efficiency without compromising **integrity and transparency**.

d. Reforms aim to keep UPSC **relevant in the face of global competition and technological disruptions**.

Implications

1. **Strengthening Meritocracy:** Ensures civil services remain a **neutral and competent instrument of governance**, free from external influences.
2. **Democratisation of Opportunity:** Wider participation from **rural, regional, and marginalised backgrounds** creates a **more representative bureaucracy**.
3. **Nation-Building Role:** UPSC-trained officers drive **policy implementation, crisis management, reforms, and development**.
4. **Institutional Trust and Legitimacy:** UPSC stands as a **symbol of fairness and impartiality**, strengthening **public confidence in governance**.
5. **Technological Modernisation:** Use of **AI, digital tools, and PRATIBHA Setu** demonstrates adaptability to future governance challenges.

Challenges and Way Forward

Challenges	Way Forward (Solution addressing the challenge)
1. Increasing scale and complexity of UPSC examinations – with lakhs of candidates, 48 optional subjects, and 22 languages, logistics are highly demanding.	**Adopt advanced digital technologies** such as AI-based scheduling, automated logistics, and secure e-governance platforms to streamline large-scale examination management.

2. Rising risk of impersonation and malpractice due to technological misuse.	**Strengthen digital security measures** such as biometric/face-recognition verification, encrypted exam systems, and enhanced cyber monitoring to maintain integrity.
3. Political or external influence pressures that may undermine institutional independence.	**Reinforce constitutional safeguards** under Article 315 and promote transparency in functioning, ensuring UPSC's autonomy from external interference.
4. Growing expectations from diverse aspirants – rural, differently-abled, and linguistic minorities often face accessibility gaps.	**Expand inclusivity measures** such as regional support centres, enhanced facilities for differently-abled candidates, and increased availability of preparatory material in multiple languages.
5. Changing nature of governance and administration – emerging global challenges like AI, climate change, cyber governance require new skills.	**Reform exam patterns and syllabi** to incorporate contemporary governance skills such as data analytics, environmental governance, technology ethics, and global policy.

5. 20 years of RTI Act

Context

October 2025 marks **20 years of the Right to Information (RTI) Act, 2005**, a landmark law empowering citizens to access information and strengthen accountability.

Historical Evolution of RTI in India

1. **Grassroots activism:** Movements like **Mazdoor Kisan Shakti Sangathan (MKSS)** highlighted corruption in rural schemes and demanded transparency.
2. **State-level laws:** Tamil Nadu, Goa, and other states enacted early transparency laws, laying the groundwork for a national Act.
3. **Role of civil society and media:** Persistent advocacy and campaigns pushed the government to draft national legislation.
4. **Judicial support:** Courts recognized **"right to know"** as part of democratic participation, reinforcing the demand for national legislation.

What is the RTI Act?

1. Enacted in **2005**, operational from **October 2005**.
2. Empowers citizens to **seek information from central and state public authorities, including public-funded bodies**.
3. Covers **documents, records, emails, contracts, reports, data in electronic form**, and other information accessible by law.
4. Provides mechanisms to **file RTI applications, first appeals, second appeals, and complaints**.

Objectives and Importance

1. **Promote transparency and accountability** in public administration by obliging public authorities to respond within stipulated timelines.
2. **Strengthen participatory democracy** by enabling citizens to monitor government functioning.
3. **Combat corruption and maladministration**, acting as a citizen-driven corrective tool.
4. **Empower ordinary citizens**, especially marginalized communities, to access information on **public services, welfare schemes, and civic amenities**.

Constitutional Provisions

1. **Article 19(1)(a):** Freedom of speech and expression, including the right to know.
2. **Article 21:** The right to life includes the right to live with dignity, which requires access to information so citizens can claim their entitlements and hold the government accountable.
3. **Directive Principles of State Policy:** Promote **good governance, transparency, and accountability**.

Judicial Interpretations

1. **State of UP v. Raj Narain (1975):** Established that citizens cannot exercise free speech without access to information.

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2. **PUCL v. Union of India (2004):** Linked access to information with electoral transparency and democratic accountability.
3. Courts have consistently recognized RTI as a **fundamental tool for participatory governance** and a check against arbitrary power.

Institutional Framework

1. **Central Information Commission (CIC)** and **State Information Commissions (SICs)**: Handle appeals and complaints.
2. **Public Information Officers (PIOs):** First point of contact for information requests.
3. **Appellate Mechanisms:** Second appeal to CIC/SIC; penalties imposed for non-compliance (up to ₹25,000).
4. **Vacancies and delays:** As of October 2025, multiple Commissions are non-functional or understaffed, causing **pendency of over 4 lakh appeals**.

Recent Amendments

1. **RTI (Amendment) Act, 2019:** Central Government now prescribes the **tenure, salaries, allowances, and terms of service** of the Chief Information Commissioner (CIC) and Information Commissioners (ICs), replacing the earlier fixed 5-year term and Election Commission parity, thereby reducing their autonomy.
2. **Amendment via Digital Personal Data Protection Act, 2023:** Section 44(3) **exempts all personal information from RTI disclosure**, removing previous exceptions that allowed release in public interest.

Achievements and Impact

1. **Empowerment of citizens:** Enabled access to ration, pensions, water, sanitation, and civic information.
2. **Exposing corruption:** Notable examples include **Adarsh housing scam (2010)**, **Commonwealth Games scam**, and **electoral bonds transparency litigation**.
3. **Improved governance:** Used to monitor welfare schemes, civic issues, environmental violations, and public spending.
4. **Citizen engagement:** Generated a new class of **RTI activists and transparency campaigners**.

Comparative Perspective

India's RTI Act (2005) is similar to global transparency laws like the **FOIA (USA, 1966)** and **UK's Freedom of Information Act (2005)**. India ranks high in citizen empowerment via information requests, with over **60 lakh applications filed annually**, but challenges like delayed responses and weakening institutional autonomy persist.

Challenges and Way Forward

Challenges	Way Forward
Delay in responses and appeals; backlog of over 4 lakh cases	Strengthen staffing, incentivize timely PIO responses, digitize RTI processes, enforce strict timelines.
Dilution of autonomy (2019 amendment on CIC tenure and salaries)	Restore operational independence of CIC/SIC; align appointments with principles of impartiality.
Reluctance of bureaucracy; political resistance	Training, capacity building, ethics education, and penalties for non-compliance; proactive disclosure norms.
Threats and attacks on RTI activists	Implement and operationalize **Whistleblower Protection Act**; ensure security and legal recourse.
Misuse of RTI for blackmail or publicity	Public awareness campaigns, stricter scrutiny of frivolous or repetitive applications; differentiate genuine users from malpractices.
Lack of RTI literacy among citizens	Awareness drives, inclusion in school/college curricula, use of digital portals like **YouRTI**, RTI-on-wheels initiatives.

6. National Commission for Minorities

Context

The **National Commission for Minorities (NCM)**, currently without a chairperson or members, faces an uncertain future. While a Public Interest litigation **(PIL) in the Delhi High Court** has sought its reconstitution, questions arise about whether its absence truly impacts

the **rights and welfare of India's minorities**. The issue revives debates about the **effectiveness, autonomy, and constitutional status** of the NCM, which has existed for over four decades.

Why Does NCM Matters?

1. Minorities are guaranteed **equal rights and cultural protection** under **Articles 29 and 30** of the Constitution.
2. The NCM was envisaged as a **watchdog body** to safeguard these rights and promote inclusivity.
3. Its **functioning** is **critical** because:
   a. It provides a **platform for grievance redressal** of minority communities.
   b. It serves as an **advisory body** to the government on minority welfare.
   c. It contributes to **India's democratic and secular ethos**.
4. However, its **limited statutory powers** and perceived **ineffectiveness** raise concerns about whether it truly fulfils its mandate.

Evolution of NCM

1. **1978:** Formed by the Morarji Desai government under the Ministry of Home Affairs as a **non-statutory body**.
2. **1981:** Congress government retained it but **denied constitutional backing**.
3. **1992:** The **National Commission for Minorities Act** gave it statutory status, empowering it with limited **civil court powers**.
4. **1993:** Chairpersons of minority, SC/ST, and women commissions made **ex officio members of the NHRC**.
5. **2004–05:** The **National Commission for Minority Educational Institutions (NCMEI)** and **Ranganath Misra Commission** were established for targeted reforms.
6. Despite these developments, the NCM has largely remained a **recommendatory body** without enforcement powers.

Contributions

1. Provided **visibility to minority concerns** at the national level.
2. Played a role in highlighting violations of **educational and cultural rights** under **Articles 29-30**.
3. Facilitated **policy inputs** for minority scholarships, linguistic protection, and community welfare.
4. Symbolically strengthened **India's secular and pluralistic image** internationally.

Challenges and Way Forward

Challenges	Way Forward
Lack of Constitutional Status: Unlike the **SC/ST Commission (Article 338)**, NCM functions only under a statutory law, limiting its authority.	Grant **constitutional backing** to NCM to ensure autonomy and authority.
Political Dependence and Patronage: Appointments often reflect **political patronage**, reducing credibility.	Introduce a **bipartisan selection process** for appointments to enhance credibility and neutrality.
Limited Powers and Enforcement Capacity: It can only recommend; lacks **enforcement or punitive authority**.	Empower NCM with **binding powers** or **quasi-judicial authority** for implementation of recommendations.
Declining Legal and Institutional Expertise: Early commissions were led by **eminent jurists**, but later leadership lacked legal backgrounds, reducing institutional rigour.	Appoint members with **legal, human rights, or social policy expertise** to strengthen institutional quality.
Overlapping Jurisdiction: Existence of **NCMEI and NHRC** creates duplication and confusion.	Clearly **delineate roles** and promote **coordination mechanisms** among national commissions.
Public Disengagement and Low Awareness: Citizens rarely approach NCM for redressal due to perception of **ineffectiveness**.	Launch **awareness drives** and **digital grievance redress platforms** to enhance citizen access.
Weak Accountability and Transparency	Conduct **periodic Parliamentary or third-party audits** of performance and outcomes.

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7. EPFO Withdrawals and Retirement Security

Context

1. The **Employees' Provident Fund Organisation (EPFO)** has observed a worrying trend of frequent and premature withdrawals by its members.
2. This pattern is depleting what is meant to be their **retirement savings**, prompting EPFO to propose **reforms in withdrawal norms**, including a minimum balance rule and restructuring of withdrawal categories.

Background

1. The **Employees' Provident Fund (EPF)** is India's main **retirement savings scheme** for organised-sector employees.
2. Contributions are made by both employer and employee, and funds can be withdrawn partially (for emergencies) or fully (on retirement/unemployment).
3. The EPF is complemented by the **Employees' Pension Scheme (EPS)** — which provides pension benefits after a minimum of **10 years of service**.
4. However, increasing instances of **premature withdrawals** are eroding the long-term purpose of these funds.

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Key Findings

1. **Low Corpus at Final Settlement**
   a. Around **50% of members have less than ₹20,000** at final settlement.
   b. **75% have less than ₹50,000**, and **87% less than ₹1 lakh**, far below what is required for post-retirement security.
2. **High Premature Withdrawal Frequency**
   a. **95% of final settlements** are made just after two months of unemployment.
   b. Nearly **half of these members later rejoin** EPFO, showing withdrawals are made even for short-term gaps.
3. **Income Profile of Members**
   a. Over **65% of EPFO members earn ₹15,000/month or less**, the statutory wage ceiling for mandatory PF coverage.
   b. Indicates that the majority are **low-income formal workers**, with limited saving capacity.
4. **Partial Withdrawals Rising**
   a. **Illness-related claims** rose **55% in one year (2023–24 to 2024–25)**.
   b. Around **58% of members withdrew multiple times** for illness; **25% withdrew four times**.
   c. **Housing and special circumstance** withdrawals have also steadily increased.

Issues Highlighted

1. **Depletion of Retirement Corpus:** Frequent withdrawals reduce the **compounding benefit**, leaving workers with inadequate savings at retirement.
2. **Break in Membership:** Premature full withdrawals create a **break in EPF continuity**, which:
   a. **Reduces pension benefits** under EPS.
   b. May cause **ineligibility for family pension** in case of death.
   c. Weakens the member's long-term **financial protection**.
3. **Possible Misuse:** Instances of members **falsely showing job exits** to claim final settlement while continuing employment, reflecting **administrative loopholes**.
4. **Lack of Social Security Alternatives:** Low-income workers rely on EPF funds for emergencies due to **weak social safety nets** and **unstable job markets**.

EPFO's Recent Reforms

Reform	Details	Purpose
Minimum Balance Rule	Members must maintain **25% of PF corpus** for retirement	Preserve a basic savings base
Withdrawal Categories Simplified	Reduced from **13 to 3** (Essential Needs (illness, education, marriage), Housing and Special Circumstances	Simplify and track fund usage
Liberalised Partial Withdrawals	Up to **10 times for education, 5 times for marriage**	More flexibility for genuine needs

Unemployment Settlement Rule	Full withdrawal allowed **after 12 months** (earlier 2 months)	Discourage premature full settlements
Clarification by Labour Ministry	**75% amount** can still be withdrawn after job loss; 25% retained	Address public concern over access

Criticism and Public Reaction

1. Critics, including MPs and opposition leaders, argue that the **government is restricting access to workers' own savings**, especially for those facing job loss.
2. EPFO clarified that the **minimum balance rule applies only to 25%** and the rest remains accessible.
3. However, the debate highlights the **tension between financial flexibility and retirement discipline**.

Significance

1. **Social Protection Lens:** Frequent withdrawals indicate **economic vulnerability** of workers and absence of strong **safety nets** for health, housing, and unemployment.
2. **Institutional Reform:** EPFO's changes aim to **rebuild the retirement fund's integrity**, ensuring members do not retire without adequate savings.
3. **Financial Literacy and Inclusion:** The issue underscores the need for **awareness campaigns** on the importance of long-term savings and pension continuity.
4. **Demographic Implication:** With India's ageing population projected to rise sharply by 2050, ensuring **retirement security** is critical to reduce **future fiscal and social strain**.

Relevance of the Issue

1. **Economic Dimension:**
   a. Weakens long-term **capital formation** and **domestic savings rate**.
   b. Impacts the overall **pension sustainability** in the formal sector.
2. **Social Dimension:**
   a. Workers risk **financial insecurity** in old age.
   b. Reflects **job precarity** and **income stress** in the labour market.
3. **Governance Dimension:**
   a. Highlights need for **administrative vigilance** in monitoring false job exits.
   b. Calls for better **policy alignment** between EPFO, social security, and labour reforms.

Way Forward

1. **Strengthen Pension Continuity**
   a. Encourage **auto-transfer of PF** on job change to prevent membership breaks.
   b. Link EPS benefits digitally for portability.
2. **Improve Financial Literacy**
   a. Awareness Drives on **power of compounding** and **pension planning**.
3. **Introduce Micro-Safety Nets**
   a. Low-interest loans for emergencies to **reduce pressure for withdrawals**.
   b. Integration with **social security schemes** like Ayushman Bharat or ESI.
4. **Enhance Employment Stability**
   a. Formalise more workers through labour reforms and MSME support.
   b. Stable jobs reduce withdrawal dependence.

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Conclusion

The EPFO was created to ensure **retirement dignity**, not short-term relief. While members withdraw due to real financial pressures, excessive and premature withdrawals **defeat the fund's core objective**. Balancing **immediate liquidity needs** with **long-term security** is essential. Sustained reform, coupled with better awareness and social protection, can restore EPFO's role as a true **pillar of retirement security** in India.

8. Accountability in Content Regulation

Context

1. The **Union Ministry of Electronics and Information Technology (MeitY)** has proposed amendments to the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021** to ensure greater **accountability and transparency** in how content notices are issued to social media platforms.

2. The move comes after instances where **junior-level police officers** were issuing content-blocking notices, and amid debates on **government oversight vs. digital freedom**.
3. These amendments will likely come into force **from November 15, 2025**.

Background: Understanding the Legal Framework

Provision / Law	What It Does
Section 79 of the IT Act, 2000	Gives "safe harbour" protection to intermediaries (like X, YouTube, Instagram), meaning they are **not legally responsible** for user-generated content, if they follow due diligence.
Section 79(3)(b)	Removes safe harbour if intermediaries **fail to remove unlawful content** flagged by the government.
Section 69A	Allows blocking of online content in specific cases affecting **sovereignty, security, public order**, etc.
Rule 3(1)(d) of IT Rules, 2021	Allows the government to flag **"unlawful"** content, after which intermediaries lose safe harbour for that content.

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What is "Safe Harbour" and Why Does It Matters?

1. "**Safe harbour**" means social media platforms are **not held legally liable** for what users post.
2. It allows free flow of expression online while ensuring companies are not punished for user behaviour.
3. However, if the government flags specific content under the IT Rules, **safe harbour no longer applies**, and the platform can be made accountable like a **publisher**.

What Has the Government Changed?

Key Amendments Proposed:

1. Only **senior officers** can issue such notices:
   a. **Joint Secretary (JS)** or above at the Central level.
   b. **Deputy Inspector General (DIG)** or above in the States.
2. Each notice must now:
   a. Clearly specify the **legal provision**, **reason**, and **exact URL or post**.
   b. Clarify that it is a **warning**, not an automatic takedown order.
3. All notices under **Rule 3(1)(d)** will be **reviewed monthly** by a **Secretary-level officer** (IT Secretary at Centre; IT/Home Secretary in States).
4. A "**reasoned intimation**" must accompany every notice to increase transparency.

Why Was This Needed?

1. **Overreach by lower-level officials:** In some states, even **Sub-Inspectors** and **Assistant Sub-Inspectors** were sending content notices.
2. **Lack of clarity:** Rules earlier mentioned "appropriate Government or its agency", without specifying any official rank.
3. **Need for accountability:** To prevent misuse or arbitrary censorship, and ensure due process in digital governance.
4. **Balance between regulation and freedom:** The move attempts to show that government action will be "responsible and traceable."

Legal and Policy Significance

1. The change **follows but is not directly linked** to the case filed by **social media platform X (formerly Twitter)**, which challenged the use of **Rule 3(1)(d)** as arbitrary.
2. The **Karnataka High Court** upheld the **Centre's authority** to issue such notices but emphasised the need for procedural fairness.
3. The amendment helps **align India's IT framework** with global norms of **platform accountability** and **transparency**.

Challenges and Way Forward

Challenges	Way Forward
1. Risk of Over-Censorship: Even with senior officers, subjective interpretation may lead to excessive takedowns.	Ensure **clear definitions** of "unlawful content" and introduce **independent oversight** mechanisms.

2. Limited Judicial Oversight: Blocking or warning notices can still bypass courts.	Create a **quasi-judicial review board** for appeals and periodic audits.
3. Impact on Freedom of Speech: Users and platforms may self-censor due to fear of liability.	Promote **transparency reports** by MeitY and platforms; publish reasons for each notice.
4. Ambiguity Between Rule 3(1)(d) and Section 69A: Two separate routes for content removal may create confusion.	Integrate both under a **unified Digital Governance Framework**.
5. Lack of Awareness Among Officials: Misuse or overreach often stems from lack of training.	Conduct **capacity-building programs** for digital literacy among enforcement officials.

Broader Implications

1. **For Governance:** Strengthens institutional accountability and standardises content regulation.
2. **For Social Media Firms:** Brings clarity but also increases compliance obligations.
3. **For Citizens:** Aims to protect against arbitrary censorship, but needs vigilance to ensure rights are not curtailed.
4. **For Digital India Mission:** Balances **freedom of expression** with **responsible digital governance**.

Conclusion

The amendment reflects an evolving phase of India's **digital regulatory ecosystem,** one that seeks to balance **state accountability**, **platform responsibility**, and **citizen rights**. However, real accountability will depend not just on seniority of officers but on **transparency, procedural fairness, and independent oversight**. In a democracy, **content moderation must never become content control**, the rule of law must remain the guiding principle of India's digital governance.

9. Special Intensive Revision (SIR) 2025

Context

The **Election Commission of India (ECI)** has launched the **Special Intensive Revision (SIR) 2025** across **12 States and Union Territories**, covering nearly **51 crore voters**.

Why are voter lists/electoral lists revised by EC periodically?

Every year, territorial constituencies face demographic shift because of birth/ death/ immigration/ emigration/ 18 age/ duplication/ bogus/ deletion/ manipulation. So, **to keep voters authentic for fair election**, addition & deletion are done in the electoral roll periodically.

How many methods of revision are used in ER/ VL?

Normally there are **2 methods** of revision:

1. **Regular Summary Revision (RSR)-** It is an annual update where draft rolls are published, and citizens can request additions, deletions, or corrections without home visits.
2. **Special Intensive Revision (SIR)-** It is more detailed verification of voters. It is done by house to house visit & reason for each addition/deletion is to be given.

About the Special Intensive Revision (SIR)

1. **Objective:** To conduct a thorough enumeration and verification of existing voters to ensure the **authenticity and accuracy** of electoral rolls.
2. **Legal Basis:** The exercise is notified under **Section 21(3) of the Representation of the People Act, 1950**, which empowers the ECI to revise electoral rolls.
3. **Coverage:** Phase II (starting **November 4, 2025**) covers 12 States and UTs, including **Tamil Nadu, Kerala, West Bengal, Uttar Pradesh, Madhya Pradesh**, and others.

How ECI did SIR in Bihar?

ECI deployed 2.5 lakh volunteers & BLOs. ECI set up a camp for awareness and did newspaper ads. ECI asked Chief Election Officer (CEO) of other states to accept **form 6** from migrants to reduce exclusion.

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What is the purpose of form 6 under RPA 1950?

1. **New Voter Registration** – For first-time voters who have attained the qualifying age of 18.
2. **Shifting Constituency** – For voters who have moved from one constituency to another and need their name included in the new constituency's roll.
3. **Reinclusion** – For voters whose names were deleted from the roll and want to reapply.

What are the constitutional frameworks for SIR?

1. **Article 324** of the Constitution of India deals with the **superintendence, direction and control of elections** in the country. It vests these powers in the **Election Commission of India (ECI)** and forms the backbone of India's independent electoral machinery.
2. **Article 325** of the Indian Constitution ensures that no person is ineligible for inclusion in a general electoral roll or denied the right to claim inclusion based on **religion, race, caste, or sex.**
3. **Article 327** empowers **Parliament** to make laws relating to elections to the **Parliament** and **State Legislatures**.
4. **Article 328** allows **State Legislatures** to make laws for elections to their respective **Legislative Assemblies** and **Legislative Councils**, **provided** Parliament has not already legislated on the subject.

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What sections of RPA 1950 are relevant for SIR?

1. **Section-15 (Electoral roll for every constituency)**— For every constituency there shall be an electoral roll which shall be prepared in accordance with the provisions of this Act under the superintendence, direction and control of the Election Commission.
2. **Section-16 (Disqualifications for registration in an electoral roll)**
   a. A person shall be disqualified for registration in an electoral roll if he
      i. is not a citizen of India;
      ii. is of unsound mind and stands so declared by a competent court;
      iii. is for the time being disqualified from voting under the provisions of any law relating to corruption practices and other offences in connection with elections.
3. **Section-19 (Conditions of registration)**-- every person who:
   a. is not less than eighteen years of age on the qualifying date,
   b. is ordinarily resident in a constituency, shall be entitled to be registered in the electoral roll for that constituency
4. **Section-21: Preparation and revision of electoral rolls**

Process of the SIR

1. **Distribution of Enumeration Forms:** Booth Level Officers (BLOs) visit every household to distribute **pre-filled forms** containing voter details such as name, EPIC number, and address.
2. **Verification by Voters:** Voters must check, correct, and complete missing details, including **date of birth, parent names, and contact information**.
3. **Link to Past Electoral Rolls:** Voters are required to trace their or a relative's name in the **previous SIR electoral roll (2002–2005)** to establish continuity in the roll.
4. **Submission of Forms:** Forms can be submitted **offline to BLOs** or **online via voters.eci.gov.in**. Acknowledgment is provided to ensure transparency.
5. **Document Verification (if needed):** Those unable to link to past rolls must provide **identity and citizenship documents** like birth certificates, passports, or educational certificates.
6. **Publication and Appeals:**
   a. **Enumeration:** November 4 - December 4, 2025
   b. **Draft Roll:** December 9, 2025
   c. **Claims/Objections:** up to January 8, 2026
   d. **Final Roll:** February 7, 2026
7. Appeals against deletions can be made to the **District Magistrate** and, subsequently, to the **Chief Electoral Officer**.

What are the implications of SIR?

1. **Disenfranchisement** of many- Electors- to- Adult-Population (EP) ratio may fall sharply in Bihar.

2. **Judicial oversight and potential directives:** The Supreme Court's involvement creates a legal test of the SIR's method and transparency. The Court may require additional disclosure, procedural safeguards, or stay further deletions pending scrutiny.
3. Some **demographic pockets** may be excluded.
4. Courts may require procedural safeguards for proper verification of voters.
5. Administrative burden on DEO, CEO, BLO and State Officers.
6. Economic burden on states in arranging camps for awareness.
7. Political trust decreases especially among opposition parties.
8. Allegation of vote theft & partiality, especially by opposition parties.
9. Transparency vs privacy.

Challenges and Way Forward

Challenges	Way Forward
1. Legal Ambiguity: Questions raised on the **ECI's power** under Section 21(3) to conduct SIRs, especially without explicit statutory backing.	**Clear Legal Framework:** Parliament may consider **statutory clarification or amendment** to define ECI's powers and procedures for intensive revisions.
2. Citizenship Verification Concerns: The EC's role in verifying **citizenship** is being challenged as this power lies under the **Citizenship Act and Foreigners Act**, not with the ECI.	**Defined Jurisdiction:** Limit ECI's role to voter eligibility verification while **excluding citizenship adjudication**; ensure coordination with MHA when required.
3. Procedural Complexity: Requirement to trace names in electoral rolls from **2002–2005** creates confusion, especially for younger or migrant voters.	**Simplified Digital Process:** Integrate **automated record linking** via digital archives to reduce burden on voters.
4. Risk of Exclusion: Lack of awareness or inability to produce old records may lead to **inadvertent disenfranchisement**, especially among vulnerable groups.	**Inclusive Outreach:** Conduct **awareness drives** in rural and urban areas; allow multiple forms of valid documentation.
5. Technological and Accessibility Barriers: Online form submission or roll verification may be difficult for digitally illiterate voters.	**Hybrid Access Model:** Ensure **offline submission support** through BLOs, kiosks, and local help centres.
6. Transparency and Accountability: Concerns over arbitrary deletion and limited grievance redressal mechanisms.	**Strengthen Oversight:** Enhance **BLO and ERO accountability**; establish **independent monitoring mechanisms** and audit trails.

10. Minor's Property Rights

Why in the News?

1. The **Supreme Court** ruled that a person who was a **minor** when a guardian sold their immovable property can, after attaining majority, **repudiate** (refuse/reject) that sale by clear conduct (for example, re-selling the land) instead of filing a court suit (Proceedings brought by one person against another in a civil court), if done within the law's time limit.
2. The judgment resolves decades of confusion about remedies available to former minors and clarifies how **voidable** guardian transactions can be undone in practice.

Key Highlights

1. **The case before the SC**
   a. **Original sale by the guardian (1971)**
      i. A father, acting as **natural guardian**, sold two small plots owned by his three minor sons.

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ii. He did this **without seeking court permission**, which the law requires for the sale of a minor's immovable property.

iii. The buyers got title on the face of the sale deeds, and revenue records later showed transfers.

b. Sons attained majority and took action

i. After the sons became adults, they **sold the same plots** to another buyer.

ii. This later sale raised legal disputes because the earlier buyers claimed valid titles.

iii. Courts had differing views on whether the sons' later actions could undo the father's sale.

c. Lower courts gave mixed rulings

i. For one plot, a **High Court** held the sons' later sale amounted to repudiation of the father's sale and that judgment became final because it was not appealed.

ii. For the other plot, trial court agreed on repudiation but appellate courts reversed, saying a formal suit was necessary to cancel the guardian's deed.

iii. This split of decisions reached the Supreme Court for final clarification.

d. Supreme Court examines the law and precedent

i. The Court looked at the **Indian Contract Act**, the **Hindu Minority and Guardianship Act**, the **Guardian and Wards Act**, and a 1905 precedent (Abdul Rahman v. Sukhdayal Singh).

ii. It also considered the **Limitation Act**, which gives a time window for challenging voidable transactions after attaining majority.

e. The Court's holding and practical tests

i. The Supreme Court held that a guardian's **voidable** sale can be set aside either by filing a suit within the limitation period or by **unequivocal conduct** that shows repudiation within the same period.

ii. Examples of such conduct include **resale by the former minor**, continued revenue entries in the minor's name, non-possession by the first purchaser, and acting as owner.

iii. The Court emphasised that evidence must be **clear, contemporaneous and within time** to infer repudiation.

Key Terms

1. Voidable Transaction

a. A **voidable transaction** is legally valid until the person entitled to avoid it chooses to cancel it.

b. In guardianship law, transfers made without court permission are generally **voidable at the instance of the minor**.

c. Once the entitled person repudiates within time, the transaction is treated as **void from the beginning**.

d. Voidable differs from **void**; a void contract is null from the start and cannot be validated.

2. Limitation Act, 1963

a. The **Limitation Act, 1963** grants a person **three years** after attaining majority (at the age of **18 years** generally) to set aside a property transfer made by their guardian.

b. If the former minor acts within this period, courts will entertain repudiation by suit or by conduct.

c. Delay beyond limitation can bar relief even when the underlying act was invalid.

3. Bona Fide Purchaser (for value without notice)

a. A **bona fide purchaser** buys property in good faith, pays value, and lacks notice of any defect in title.

b. Equity often protects such purchasers to maintain market stability and fairness.

c. When a guardian's transfer is later set aside, courts balance the minor's right with the purchaser's reliance, possibly awarding restitution or compensation.

d. Possession, improvements and the timing of purchase affect protection accorded to such buyers.

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e. Clear titles, prompt repudiation and better records reduce disputes and safeguard innocent purchasers.

Implications of the SC Judgment

1. **Stronger protection for heirs:** Former minors have a practical, non-litigious way to recover property wrongly sold by guardians.
2. **Less reliance on courts:** In some cases, acting quickly (for example, reselling property) can restore rights without immediate litigation.
3. **Market clarity:** Buyers and registries will need better checks, since titles given by guardians without court sanction can later be undone.
4. **Evidence importance:** Maintaining revenue records and proving possession or resale within time gains legal weight.
5. **Deterrence for guardians:** The judgment discourages guardians from disposing of minor's immovable property without court permission.

Challenges and Way Forward

Challenge	Way Forward (practical steps)
Unclear boundary of "unequivocal conduct"	Courts and legal authorities should issue guidelines with examples (resale, revenue entries, possession) to help infer repudiation.
Old records and proof gaps for long-past transactions	Accelerate **digitisation of land and revenue records** and allow presumptive inferences when contemporaneous documents exist.
Risk to bona fide purchasers	Protect innocent buyers who took possession and paid value in good faith, while allowing restitution remedies where appropriate.
Poor public awareness among guardians and heirs	Run **legal literacy drives** at panchayats and revenue offices explaining limits on guardian actions and heirs' remedies.
Delays in dispute resolution	Promote fast-track benches or mediation for property disputes involving minors to reduce hardship and clarify titles quickly.

11. Execution Petitions in India

Context

The Supreme Court recently expressed serious concern over the delay in implementing court orders. As of October 2025, over **8.82 lakh execution petitions** are pending in district courts. The Court said such delays make justice meaningless if people cannot actually receive what the court has already granted them.

What is an Execution Petition and Its Importance

1. After winning a civil case, the court issues a **decree** that states what each party must do, like paying money or vacating property.
2. To make this decree effective, the winning party files an **execution petition**, asking the court to ensure that the order is carried out.
3. This is the **final stage** of a civil case, the stage where the "fruits of justice" are delivered.
4. Timely execution safeguards rule of law, public confidence in the judiciary, and ensures that rights are truly upheld.
5. But if there's too much delay, even winning a case can feel meaningless.

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Data Insights and State-wise Trends

1. On average, a civil case in India takes **about 5 years** to finish. After that, the **execution stage adds another 4 years**.
2. Nearly **half (47%)** of all pending execution petitions were filed before **2020**.
3. **Highest pendency:**
   a. **Bombay High Court region** - about **3.4 lakh cases**.
   b. **Madras High Court region** - about **86,000 cases**.
   c. **Kerala High Court region** - about **83,000 cases**.
4. These figures show that the problem is serious and uneven across different states.

Supreme Court's Role and Actions

1. In **2021**, the Court issued **14 directions** to ensure faster disposal of execution petitions, including a **6-month time limit**.

2. In **March 2025**, the Court again took up the issue in a property dispute and ordered **nationwide monitoring** of execution delays.
3. By **October 2025**, about **3.38 lakh cases** were cleared, but **8.82 lakh** were still pending.
4. The Court has now given **six more months** to High Courts to clear the backlog and demanded explanations from states like Karnataka for non-compliance.

Why Pendency Persists (Main Reasons) and Way Forward

Challenges	Way Forward
Too many procedures: The law requires fresh notices and hearings at the execution stage, giving the losing party multiple chances to delay.	Simplify procedures and set strict time limits for each stage.
Lack of lawyers: Almost **39%** of cases are delayed because advocates are not available on hearing dates.	Create legal aid panels and ensure proper scheduling of hearings
Court stays: Higher courts often pause execution proceedings (about **17%** of cases).	Limit stay orders to genuine cases and fix short timelines for objections.
Missing documents: Around **12%** of cases get stuck because required documents are not ready.	Use digital systems for e-records, e-auctions, and faster document verification.
Weak infrastructure: Shortage of judges, poor case management, and slow administrative work add to delays.	Increase judicial strength and create separate benches for execution matters.
Lack of detailed data: Authorities don't have enough information to identify which types of execution cases face the most delay.	Collect detailed information on different types of execution cases.
Regional differences: Some states like Maharashtra and Tamil Nadu face much higher pendency due to heavy workload and local issues.	Plan reforms as per local conditions and provide more resources where needed.
Weak monitoring and accountability: Lack of regular reviews and consequences leads to unchecked judicial delays.	Regularly review progress and make district courts answerable to High Courts.

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INTERNATIONAL RELATIONS

1. India's Kabul Mission and Taliban Visit

Why in the News?

1. India has decided to **upgrade its technical mission in Kabul to a full Embassy** and hosted Taliban Foreign Minister Amir Khan Muttaqi, marking the first high-level Taliban visit **since 2021**.
2. This is significant for **India's strategic, security, economic, and regional diplomacy**, especially amid evolving Great Power dynamics in Afghanistan.

What is the historical context of India-Afghanistan relations?

1. India had a full embassy in Kabul before 2021. It was **closed after the U.S. withdrawal** and the Taliban takeover.
2. Since then, India maintained a **technical mission (since June 2022)**, focusing on humanitarian aid, development projects, and limited diplomatic engagement.
3. India has historically supported Afghanistan's **sovereignty, reconstruction, and democratic institutions**.

How has India-Afghanistan engagement evolved?

1. India's engagement moved from **humanitarian and technical cooperation** to a **higher diplomatic level** with the visit of Taliban Foreign Minister Amir Khan Muttaqi.
2. India upgraded its mission in Kabul to **Embassy status**, signaling willingness to engage more formally without **full legal recognition**.
3. Bilateral discussions cover **political, economic, trade, education, health, and infrastructure cooperation**.

Why is the Taliban important for India? (Strategic Objectives)

1. **Security:** Counter cross-border terrorism and ensure Afghan territory is not used against India.
2. **Economic:** Promote trade, investment, and development projects (mining, health, scholarships, visas).
3. **Regional Influence:** Maintain India's relevance amid **Pakistan, China, Russia, and Iran** increasing engagement with Afghanistan.
4. **Humanitarian:** Support Afghan citizens through aid, medical support, education, and infrastructure.

What are the diplomatic nuances of this engagement?

1. **De facto vs. de jure recognition:**
   a. **De facto recognition:** India is engaging with the Taliban as the **actual, functioning authority** in Afghanistan.
   b. **De jure recognition:** India is **not legally or formally recognizing** the Taliban government as the official government.
2. **Protocol issues:** India **does not fly the Taliban's flag** at official functions, instead using **tabletop flags** or symbolic arrangements. This ensures India **follows diplomatic norms** without giving formal recognition.
3. **Strategic signaling:**
   a. **To the US and Western countries:** India is showing it is **pragmatic**, engaging with the power in control (Taliban) without waiting for "perfect political conditions."
   b. **To regional players (Pakistan, China, Iran, Russia):** India signals that it is **active in Afghanistan**, protecting its strategic interests and maintaining influence in the region.

What is the Taliban's position and perspective?

1. Afghanistan will **not allow its territory to be used against any country**.
2. Terror groups like **Lashkar-e-Taiba were reportedly** expelled from Afghan soil.
3. Taliban seeks **greater trade ties**, especially via **Wagah border and Chabahar port**, preferring economic independence from China.

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4. Taliban claims improvement in **women's rights and law & order**, though India does not officially endorse or discuss human rights issues.

What is the regional and global context?

1. **US role:** The US relies on **Pakistan** to maintain influence in Afghanistan and the wider Western neighbourhood. India must engage carefully to **safeguard its own interests** without clashing with US priorities.
2. **China:** China is **expanding its influence** in Iran, western China, and Afghan reconstruction projects. It has strong economic and strategic ties in the region, so India must maintain **its own strategic autonomy**.
3. **Russia & Iran:** Both countries have **recognized the Taliban government**. India aligns carefully with them in multilateral dialogues (e.g., **Moscow Format**) while protecting its interests.
4. **India's approach:** Participates in **Moscow Format dialogues** to coordinate regional policy and oppose foreign military presence in Afghanistan (like Bagram airbase). Balances relations with all major powers while **maintaining independent strategic decision-making**.

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What are the key policy takeaways?

1. India balances **pragmatism with principle**: engage Taliban without full recognition.
2. Maintains **flexibility** to adjust to Taliban policies.
3. Focuses on **developmental statecraft**: education, health, infrastructure, trade.
4. Ensures **long-term presence in Afghan geopolitics**, preventing strategic vacuum.

Challenges and Way Forward

Challenges	Way Forward
Security risks due to Pakistan-backed cross-border terrorism	**Strengthen intelligence-sharing** and **counter-terror cooperation** with Afghanistan
Taliban's **human rights approach**, especially for women	**Engage** on **development**, **health**, and **education** while maintaining cautious diplomacy
Diplomatic recognition dilemma and **protocol issues**	Maintain **de facto engagement** while avoiding formal recognition until international consensus
Economic dependence on China and regional powers	**Expand bilateral trade,** investment, and port access; support Afghan **economic independence**
Geopolitical competition (US, China, Pakistan)	Use **multilateral forums** and **strategic autonomy** to safeguard India's interests

2. Sir Creek Dispute

Context

Defence Minister Rajnath Singh recently warned Pakistan against any **"misadventure in the Sir Creek sector"**, citing reports of **increased Pakistani military activity** and infrastructure expansion near the area. His remarks have refocused attention on this long-pending boundary dispute between India and Pakistan.

What is Sir Creek?

1. Sir Creek, originally known as **Ban Ganga**, is a **96-km-long tidal estuary** located between the **Rann of Kutch (Gujarat, India)** and **Sindh province (Pakistan)**.
2. The creek is a **marshy, uninhabited, and flood-prone** area with shifting tidal patterns, making navigation and policing extremely difficult.
3. It serves as a **natural boundary** between India and Pakistan's southwestern borders.
4. The creek opens into the Arabian Sea and directly influences maritime boundaries and fishing zones of both nations.

Historical Roots

1. The dispute dates back to a **pre-Independence quarrel** between the rulers of **Kutch and Sindh** over ownership of firewood along the creek.
2. After the **1965 war**, Pakistan claimed half of the Rann of Kutch.
3. The **1968 Indo-Pak Tribunal** awarded **90% of the Rann** to India but **excluded Sir Creek** from its verdict, leaving it unresolved.

Claims of Both Countries

1. **India's claim:** Boundary should run along the **mid-channel (Thalweg principle)** of the navigable creek.
2. **Pakistan's claim:** Entire creek lies within its territory; argues that the creek is **non-navigable**, hence Thalweg principle does not apply.

Attempts at Resolution

1. **Bilateral Talks:**
   a. **1989-1992:** Five rounds of discussions, including technical expert meetings, without breakthrough.
   b. **1998:** Formation of a **Sir Creek Working Group** under the Composite Dialogue framework.
   c. **2012:** Last formal talks held; discussed land boundary and maritime delimitation.
2. **2015:** A Comprehensive Bilateral Dialogue was agreed upon, including Sir Creek, but stalled after the **Pathankot terror attack (2016)** and Pakistan's continued cross-border terrorism.
3. **India's position:** Dispute must be settled **bilaterally under the Simla Agreement (1972)**; international arbitration is unacceptable.

Strategic and Economic Importance

1. **Strategic Significance**
   a. Sir Creek lies close to **Karachi**, Pakistan's largest city and economic hub, hence critical to Pakistan's coastal defence.
   b. Following **Operation Sindoor**, Pakistan reportedly built **bunkers, radars, and drone-launching bases** near the creek.
   c. India maintains a **multi-layered security presence**, BSF, Indian Army, Coast Guard, and Air Force, given its proximity to **Mundra and Kandla ports**.
   d. The creek could be used as a **launch point for terrorist infiltration**, as seen during the **26/11 Mumbai attacks**, when terrorists entered by sea.
2. **Economic Significance**
   a. Believed to hold **untapped oil and gas reserves**, vital for India's energy diversification and Pakistan's resource needs.
   b. The creek supports **rich fishing grounds**, crucial for communities in Gujarat and Sindh.
   c. Absence of a defined maritime boundary leads to **frequent arrests of fishermen**, causing humanitarian and diplomatic strains.
   d. The delimitation of Sir Creek affects both countries' **Exclusive Economic Zones (EEZs)**, influencing access to resources in the **Arabian Sea**.

Current Security Concerns

1. **Pakistan's increased military build-up** and drone deployments near Sir Creek suggest potential for escalation.
2. **Chinese involvement:** Beijing-backed mining and power projects in Pakistan's Rann of Kutch region raise fears of **dual-use (civil-military) facilities**.
3. **Difficult terrain:** Marshy topography makes **large-scale ground operations nearly impossible**, but drone and naval threats remain.

Challenges and Way Forward

Challenges	Way Forward / Solutions
Unresolved boundary: Dispute over Thalweg principle delays demarcation and affects EEZ claims.	**Revive bilateral dialogue:** Resume Comprehensive Bilateral Talks focused on land boundary and EEZ delimitation under the Simla Agreement framework.
Militarisation & drone activity: Pakistan's installations and patrols increase tensions.	**Technology-based surveillance:** Strengthen India's coastal radar chain, integrate drones and satellites for real-time monitoring and deterrence.
China-Pakistan proximity: Chinese projects near the area pose strategic risks.	**Strategic vigilance:** Enhance security infrastructure and intelligence coordination in Gujarat; maintain diplomatic engagement with global partners to deter encirclement.
Stalled diplomacy: No sustained engagement since 2016.	**Backchannel diplomacy & CBMs:** Initiate informal contacts, joint working groups, and mechanisms for regular flag meetings between security forces.

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Fishermen arrests: Undefined boundary leads to repeated detentions and livelihood losses.	**Fishermen cooperation mechanism:** Joint identification of fishing zones, early-warning systems, and time-bound release protocols.
Environmental fragility: Militarisation and oil exploration threaten the delicate marshland ecosystem.	**Environmental safeguards:** Promote joint ecological studies and disaster risk management cooperation for the Rann-Sir Creek ecosystem.
Domestic political rhetoric: Nationalist statements can escalate tensions and hinder diplomatic space.	**Decouple security strategy from politics:** Maintain restraint in public statements; prioritise quiet diplomacy and strategic communication.

3. India-UK Relations and the New Trade Deal

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Why in the News?

1. India and the United Kingdom signed the **Comprehensive Economic and Trade Agreement (CETA)** in July 2025, marking a major milestone in bilateral relations.
2. British Prime Minister **Keir Starmer's visit to Mumbai in October 2025** signals the intent to deepen ties in trade, technology, and security.
3. This comes against the backdrop of **geopolitical realignments, global economic fragmentation, and regional trade blocs**.

Why India and the UK matter to each other

1. India and the United Kingdom have had a long relationship from the colonial era to today's partnership of equals. In recent years, both countries have realised that they need each other more than ever:
   a. **India** is one of the fastest-growing economies, a hub of young talent, and a key Indo-Pacific power.
   b. **The UK is** a financial and technological hub, seeking strong partners after **Brexit (Britain's exit from the EU in 2020)**.
2. So, both countries began working towards a **comprehensive trade and strategic partnership**.

The Big Step: Signing of CETA in 2025

1. In July 2025, India and the UK signed the **Comprehensive Economic and Trade Agreement (CETA)**.
2. CETA is a **mega trade deal** that reduces import duties (tariffs), makes investments smoother, and increases cooperation in many sectors.
3. The goal is to **double trade between India and the UK by 2030**.
4. The UK is already the **6th largest foreign investor** in India (nearly 5% of FDI).
5. With CETA and the upcoming **Bilateral Investment Treaty (BIT)**, these inflows will increase further.

What will each side gain?

1. **India** will export more textiles, farm goods, and medicines to the UK at lower tariffs.
2. **The UK will** get cheaper access for Scotch whisky, automobiles, and other premium products.
3. UK firms can use India as a **manufacturing hub** and export to global markets.
4. Indian firms will gain from **technology transfer, global standards, and better market access in Europe**.
5. Unlike old trade agreements, CETA is not just about trade, it also includes **investment partnership** and **strategic alignment** like technology and defence.

Making Life Easier for Professionals: The DCC

1. Along with CETA, another important pact, "the **Double Contributions Convention (DCC)"** was signed.
2. Normally, Indian professionals working in the UK had to pay **social security contributions** (like pension or insurance) both in India and in the UK.
3. Under DCC, they don't have to pay double contributions for 3 years.
4. This means **cheaper costs for Indian workers and British employers**, and smoother mobility of skilled talent.

5. This is important because India's IT and services professionals are the backbone of Indo–UK economic links.

Looking Beyond Trade: Vision 2035

1. Trade is only one part of the relationship. In July 2025, both countries launched the **Vision 2035 Roadmap**.
2. It includes cooperation in:
   a. **Defence** – Joint development and co-production of weapons and platforms (example: Defence Industrial Roadmap).
   b. **Technology** – Working together in **AI, quantum computing, semiconductors, advanced materials, critical minerals**. (This is covered under the **Technology Security Initiative (TSI)** launched in 2024).
   c. **Climate and Education** – Collaboration in green energy, climate action, and student exchange.
   d. **Mobility** – Making it easier for professionals and students to move between the two countries.
3. The idea is that India–UK relations should not remain limited to trade, but should become a **comprehensive strategic partnership**.

Why did India and the UK push so hard for this deal in 2025?

1. The **world economy is fragmenting** into smaller regional trade blocs.
2. **Supply chains** are shifting from efficiency to **resilience and security** (countries don't want to depend only on China).
3. Both India and the UK want to position themselves as **reliable partners** in this new order.
4. For **Britain**, India offers:
   a. A huge consumer market.
   b. Opportunities in green finance and digital innovation.
   c. A strong partner in the Indo-Pacific.
5. For **India**, UK offers:
   a. Advanced technology.
   b. Foreign investments.
   c. Defence and security collaboration.
   d. More opportunities for Indian workers abroad.

Challenges and Way Forward

Challenges	Way Forward
Ratification delays in CETA	Expedite **parliamentary approvals** in both countries
Regulatory and non-tariff barriers	**Align standards, simplify compliance**, strengthen dispute settlement mechanisms
Protectionist pressures in sensitive sectors (agriculture, services)	**Phase-wise tariff liberalisation** with safeguard clauses
Unequal benefits across industries	Support vulnerable sectors through **transition funds and skill development**
Implementation of technology/security cooperation	Institutionalise **joint working groups**, regular high-level reviews

4. China's Growing Dominance in Green Hydrogen

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Why in the News?

1. **Green hydrogen** has recently gained prominence as a clean energy alternative beyond solar and wind.
2. By 2024, **China emerged as the world's largest producer of hydrogen** and captured a dominant share in the **electrolyser market**, which is central to green hydrogen production.
3. Concerns are rising globally about **China's expanding control over the hydrogen supply chain** and its impact on future energy security.

What is Green Hydrogen?

1. Produced by **splitting water with renewable energy** (wind, solar).
2. Zero-emission process, unlike **grey hydrogen** (fossil fuel based).
3. Crucial for decarbonising **hard-to-abate sectors** like steel, aviation.
4. Part of **India's National Green Hydrogen Mission**.
5. Supports India's **net-zero 2070 goal**.

The Shift from Solar and Wind to Green Hydrogen

1. Initially, renewable energy discussions focused on **solar and wind power**.
2. The spotlight has now shifted to **green hydrogen**, which is crucial for **oil refining, ammonia production, and decarbonisation of hard-to-abate sectors**.
3. At the heart of this transition are **electrolysers**, which split water into hydrogen and oxygen using renewable electricity.

China's Rise in Hydrogen Production

1. By 2024, **China became the world's leading hydrogen producer** with **36.5 million tonnes annually**.
2. Out of this, it produced **1,20,000 tonnes of green hydrogen**, nearly **half of global output**.
3. China also established dominance by capturing **85% of global Alkaline (ALK) electrolyser manufacturing capacity**.

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What is an Electrolyser?

1. A device that uses electricity to split water into **hydrogen and oxygen**.
2. Acts as the **backbone of green hydrogen production**.
3. Types: **ALK, PEM, SOEC** (Solid Oxide).
4. Efficiency depends on technology and input load stability.
5. Critical for scaling green hydrogen globally.

Electrolyser Technologies – ALK vs PEM

1. **Alkaline (ALK) electrolysers** are a mature, low-cost technology, but they are less efficient under fluctuating renewable energy loads.
2. **Proton Exchange Membrane (PEM) electrolysers** are more efficient at variable loads and produce **higher-purity hydrogen**, but they depend on **precious metals like iridium and platinum**, making them costlier.
3. China's current dominance rests on **mass manufacturing of ALK electrolysers**, though PEM may become more important in the future.

How China Built Its Dominance

1. China replicated its **solar PV strategy** by offering **low prices, state subsidies, and rapid scale-up of production facilities**.
2. For example, in 2024, the cost of a **5MW ALK electrolyser system** in China dropped by **20% from 2023**, making it far cheaper than overseas systems.
3. Abundant domestic availability of **nickel and steel** further reduced production costs.
4. This cost advantage makes Chinese electrolysers **up to 45% cheaper** for projects in Europe and beyond.

China's Global Expansion and Pushback

1. Chinese renewable firms like **LONGi, Envision, and Guofu Hydrogen** are not only manufacturing electrolysers but also building **integrated hydrogen plants abroad**, including in **Germany**.
2. Envision Energy even launched the **world's largest renewable-powered green hydrogen and ammonia plant**.
3. However, unlike solar PV, **hydrogen is a strategic sector** for many countries.
4. Hence, Chinese imports are likely to face **greater scrutiny, restrictions, and local competitiveness measures**, limiting the scope of unchecked dominance.

National Green Hydrogen Mission (India)

1. Launched in **2023** to make India a **global hub** for green hydrogen.
2. Targets **5 million metric tonnes by 2030**.
3. Promotes **domestic electrolyser manufacturing** and R&D.
4. Linked with the PLI **scheme** for clean energy industries.
5. Aims to enhance energy security and reduce import dependence.

Implications

1. **Energy Security Risks** – Heavy reliance on China for electrolysers may repeat the **solar PV dependency problem**.
2. **Geopolitical Influence** – China's control over supply chains could give it strategic leverage in **energy diplomacy**.
3. **Technological Competition** – China is strong in **ALK electrolysers**, but future competitiveness may shift to **PEM and advanced technologies**, giving room for Western players.
4. **Fragmented Global Supply Chains** – Countries may prioritise **domestic manufacturing and national hydrogen missions**, leading to regional supply blocks.

5. **Opportunity for India** – Through its **National Green Hydrogen Mission**, India can invest in **local electrolyser manufacturing** and reduce import dependence.

Challenges and Way Forward

Challenges	Way Forward
China's **low-cost advantage** in ALK electrolysers	Provide **R&D support and subsidies** for indigenous technologies
Dependence on **critical minerals** for PEM electrolysers	Secure supplies via **international mineral partnerships**
Risk of repeating **solar PV dependence**	Build **domestic electrolyser capacity** under the Green Hydrogen Mission
Geopolitical risks of Chinese dominance	Promote **Indo-Pacific Hydrogen Alliances** and regional cooperation
Limited cost-competitive alternatives	Use **green finance and global collaboration** to scale non-Chinese production

5. Multilateralism Isn't Dead: UN's 80th Year and the Future of Global Cooperation

Context

1. As the **United Nations (UN)** celebrates its **80th anniversary** on **24 October 2025**, many people are questioning whether **working together through international organizations** still matters.
2. Even though the UN is **not perfect**, it is still very **important for solving global problems**. Instead of giving up on **cooperation between countries**, we should focus on **improving the UN** and making it more **trustworthy** in today's **changing world**.

What is Multilateralism?

1. **Meaning:** Cooperation among **three or more countries** to achieve common global goals through shared institutions and rules.
2. **Core Principles:**
   a. **Sovereign equality** of all states
   b. **Collective problem-solving** for "problems without passports"
   c. **Rule-based global order** and mutual respect
3. **Example:** United Nations (UN), World Health Organization (WHO), World Trade Organization (WTO), Paris Climate Agreement.

Why Multilateralism Matters?

Aspect	Importance
Peace & Security	Facilitates conflict resolution through diplomacy (e.g., UN peacekeeping).
Development	Drives global goals like SDGs, poverty reduction, and climate action.
Humanitarian Relief	Coordinates disaster relief, refugees, and global health responses.
Voice for Smaller Nations	Offers representation and negotiation space to weaker states.
Global Cooperation	Helps address transnational issues: climate change, pandemics, terrorism, AI regulation.

The Current Crisis of Multilateralism

1. **Declining U.S. Commitment**
   a. The **United States**, a founding pillar of the UN system, has begun to retreat from global institutions.
   b. It has **withdrawn from UNESCO and the UN Human Rights Council**, and slashed funding for several UN programmes by nearly **80%**, weakening the financial base of multilateral institutions.
   c. This shift stems from an **"America First"** foreign policy that prioritises **national sovereignty over global cooperation**.
   d. The result: Reduced U.S. leadership in solving collective crises like **climate change, humanitarian relief, and peacekeeping**, creating a **vacuum of trust and direction** within the UN system.

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e. **Why it matters:** When the world's largest funder and most influential member steps back, the entire multilateral framework loses both **resources and credibility**.

2. **Rise of Nationalism, Regionalism, and Bilateralism**
   a. Across the world, countries are increasingly favouring **"mini-lateral"** or **bilateral** partnerships - smaller groups formed around narrow, shared interests (e.g., **QUAD, AUKUS, I2U2**).
   b. This trend reflects a **loss of faith in large, consensus-based bodies** like the UN, where decisions take time and are often blocked by big-power politics.
   c. Simultaneously, the **US-China rivalry** has divided global diplomacy into competing camps.
   d. Russia's **invasion of Ukraine** and Israel's actions in **Gaza**, often in defiance of UN resolutions, highlight how **major powers selectively respect international law**, eroding the UN's moral authority.
   e. **Effect:** The world order is fragmenting, countries act alone or in blocs, reducing the space for truly global cooperation.

3. **Institutional Inequality within the UN**
   a. The UN's structure, designed in **1945**, no longer reflects today's **multipolar reality**.
   b. The **UN Security Council (UNSC)** still gives **permanent membership and veto power** to five nations (P5): the U.S., U.K., France, Russia, and China, sidelining large developing democracies like **India, Brazil, and African nations**.
   c. This **veto dominance** allows a single nation to block collective action, as seen in repeated vetoes over conflicts like **Gaza** or **Ukraine**.
   d. Meanwhile, the **UN General Assembly** remains **symbolic but powerless**, as its resolutions are non-binding.
   e. **Result:** The perception of an **unfair and outdated global governance system** weakens the legitimacy of multilateralism itself.

4. **Loss of Public Trust and Legitimacy**
   a. Many citizens around the world view the UN and other global bodies as **remote, elitist, and ineffective**.
   b. The slow response to crises, from the pandemic to wars, fuels the belief that **multilateralism benefits bureaucrats, not ordinary people**.
   c. Populist leaders exploit this perception, portraying global cooperation as **a threat to national sovereignty** and domestic culture.
   d. **Outcome:** Global institutions risk losing not only state support but also **the moral trust of the people** they claim to represent.

UN's Achievements

1. Despite its flaws, the UN has delivered lasting contributions:
   a. **Universal Declaration of Human Rights (1948)**: A global moral compass.
   b. **Sustainable Development Goals (2015)**: Blueprint for inclusive growth.
   c. **Paris Climate Agreement (2015)**: Global environmental cooperation.
   d. **Peacekeeping Operations**: Stabilising conflict zones from Africa to Asia.
   e. **Voice for Decolonisation and Small Nations**: Giving equal space to weaker states.
2. **In essence:** The UN may be imperfect, but no other body matches its global legitimacy or reach.

The Philosophical Challenge: A Crisis of Legitimacy, Not Just Structure

1. The **real challenge** is not merely about reforming institutions, but about **reconnecting multilateralism with ordinary people's realities**.
2. As author **David Goodhart** explains, modern politics reflects a divide between:
   a. **Anywheres:** Globally mobile elites who benefit from open markets and globalisation.
   b. **Somewheres**: Citizens rooted in local identity, religion, or culture, who feel **ignored by global institutions**.
3. This social divide fuels **anti-globalisation movements** such as **Brexit, Trumpism, and protectionist nationalism**.

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4. Many feel that global institutions serve **technocrats and corporations**, not communities.
5. Therefore, the survival of multilateralism depends on rebuilding **trust and inclusivity**, making global governance deliver **tangible benefits** like jobs, justice, and dignity.

Challenges and Way Forward

Challenge	Way Forward / Reform Strategy
Outdated UN structure	Expand the **UN Security Council** to include countries like India, Brazil, and African representation.
Erosion of legitimacy	Make multilateral institutions more **democratic, transparent, and citizen-focused**.
Geopolitical rivalry	Promote **issue-based coalitions** (climate, health, tech governance) to sustain cooperation
Disconnect with people	Ensure that multilateral outcomes lead to **real benefits** — jobs, health, and dignity.
Leadership vacuum	Encourage **emerging powers** like India to champion equitable multilateralism rooted in solidarity and sustainability.

India's Role and Opportunity

India can lead a **reformed, inclusive multilateral order** through:

1. **G20 Presidency legacy** (Voice of Global South).
2. Advocacy for **UN Security Council reform**.
3. Leadership in **digital governance, climate finance, and AI ethics**.
4. Promoting **Vasudhaiva Kutumbakam** (One Earth, One Family, One Future).

Conclusion

"The world is not short of crises, it is short of cooperation." Multilateralism may be **fraying**, but it is not **failing**. Its survival depends on **reform, inclusivity, and legitimacy**, making global institutions serve not just nations, but **people**. As Hammarskjöld said, "The UN was not created to take mankind to heaven, but to save humanity from hell."

6. India-Australia Renewable Energy Push

Why in the News?

1. Australia's Climate & Energy Minister **Chris Bowen's** visit to Delhi (15 Oct 2025) to advance the **India–Australia Renewable Energy Partnership (REP)** and turn joint climate ambitions into practical projects.
2. The visit emphasises urgent cooperation on **critical minerals, manufacturing, and capacity building** to reduce overdependence on a single supplier and secure resilient clean-energy supply chains.

India-Australia Renewable Energy Partnership (REP)

1. The **India–Australia Renewable Energy Partnership (REP)** is a joint initiative launched in **2023** by the **Prime Ministers of India (Narendra Modi)** and **Australia (Anthony Albanese)** to strengthen cooperation in the **clean energy sector**.
2. It aims to combine **India's growing renewable energy demand and manufacturing capacity** with **Australia's rich resources and technological expertise**, creating a sustainable and resilient clean energy ecosystem.
3. **Objectives:**
   a. To **accelerate the clean energy transition** in both countries.
   b. To **reduce dependence on China** for critical minerals, solar modules, and batteries.
   c. To **build secure, diversified, and resilient supply chains** for renewable technologies.
4. **Key Areas of Cooperation:**
   a. The partnership covers **eight major areas**:
      i. **Solar photovoltaic (PV) technology** - improving efficiency and manufacturing.
      ii. **Green hydrogen** - joint R&D and investment to make hydrogen affordable.
      iii. **Energy storage systems** - including advanced batteries for grid stability.
      iv. **Solar supply chains** - strengthening local production to reduce import dependence.

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v. **Circular economy in renewables** - recycling solar panels and batteries.

vi. **Two-way investment** - promoting joint ventures in clean energy industries.

vii. **Capacity building** - training workforce and sharing technical expertise.

viii. **Track 1.5 Dialogue** - a joint forum of policymakers, industry leaders, and researchers to translate plans into action.

Key Highlights

1. **Strategic context - why now?**
   a. Both India and Australia have raised climate ambitions. India targets **500 GW non-fossil capacity by 2030** (large share from solar), while Australia sets sharp emission cuts by 2035.
   b. The Indo-Pacific faces high climate risks (disasters, displacement), so reliable clean-energy systems are a regional priority.
2. **Supply-chain vulnerability identified**
   a. A major bottleneck for the global clean transition is **concentration of processing and manufacturing** (notably in China) for solar modules, rare earth processing and battery components.
   b. Disruptions, pandemic shortages and export restrictions revealed the **fragility of current supply chains** and impacted sectors such as electric vehicles (EVs).
3. **What does each country bring to the table?**
   a. **Australia**: rich **mineral resources** (lithium, cobalt, rare earths), regulatory stability and export capacity; **potential to co-invest** in downstream refining and processing.
   b. **India**: **large market**, manufacturing incentives (PLI schemes), abundant **labour force** and growing deployment experience in solar and storage; **large demand** provides scale for investment.

Implications

1. **Reduced strategic dependence:** Joint processing and manufacturing can lower risks from single-country dominance and geopolitical disruption.
2. **Economic opportunity:** Co-investment can create manufacturing jobs in India and value-addition in Australia, strengthening bilateral trade.
3. **Faster deployment of clean tech:** Secure supply chains speed up roll-out of solar, storage and hydrogen, helping meet national climate targets.
4. **Regional resilience:** An India-Australia axis for critical minerals and technology could anchor supply-chain security across the Indo-Pacific.
5. **Policy coordination challenge:** Success requires aligned regulations, export controls, standards and investment frameworks between capitals.

Challenges and Way Forward

Challenges	Way Forward
Overdependence on a single supplier (China)	Diversify suppliers; invest jointly in downstream refining and module assembly in third countries or in India/Australia.
Lack of downstream processing in Australia	Co-finance build-out of refineries, smelters and chemical plants with technology transfer and environmental safeguards.
Financing & commercial viability	Create blended finance models (public guarantees, concessional loans, private equity) and risk-sharing agreements.
Skills and workforce gaps	Launch joint training (Skill India–Net Zero Jobs linked programmes), scholarships and exchange for technicians and engineers.
Environmental & social risks of mining/processing	Enforce strict environmental standards, local consultation, benefit-sharing and circularity (recycling) mandates.

Conclusion

The India-Australia REP is timely: it can convert climate goals into tangible, resilient industry if both sides prioritise **downstream processing, joint manufacturing, financing and skills**. Success will depend on practical pilot projects, clear standards, and careful attention to environmental and social safeguards; turning strategic intent into supply-chain security.

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7. India in Global Economy

Why in the News?

1. The **global economic order** (system of trade, finance, and production between countries) is changing due to tensions between **the US and China**, the rise of **populist-autocrats** (leaders who centralise power and bypass democratic norms), and new **trade, financial, and digital systems**.
2. These changes affect **global trade flows, currency markets, and strategic decisions**, creating both **challenges and opportunities** for India and the **Global South** (developing countries in Africa, Asia, Latin America).

Key Changes in the Global Economy

Trend	Explanation
State-Capital Nexus / Crony Capitalism	Populist-autocrats favour big corporations (**oligopolies**) over citizens, giving them advantages in exchange for political support. This often distorts policies and national priorities.
Resurgence of Traditional Statecraft	Countries like the US are prioritising **national interest** by securing supply chains, relocating critical industries (like semiconductors), and controlling strategic regions (Arctic Rim, Greenland) to ensure security and economic advantage.
Digital Colonialism	Big Tech and cloud platforms extract wealth from other nations, reshape politics, and challenge **economic sovereignty** through state-backed digital currencies, **SWIFT system** manipulation, and AI plans.
Withdrawal of Developmental Aid	Cuts in international aid by the **G7** or **World Food Programme** increase poverty, migration, and political instability in vulnerable nations **(e.g., Africa, Nepal, Sahel region).**
Trade Restrictions and Sanctions	US tariffs on 70+ countries and sanctions on 30+ nations disrupt free flow of **goods, capital, people, and ideas**, prompting the **Global South** to explore alternatives like **de-dollarisation** (reducing reliance on US dollar) and localising supply chains.

SWIFT system:

1. It is a **global network** that **allows banks** to **securely send** and **receive international payment instructions**.
2. It helps banks **communicate** about **cross-border money transfers.**

Implications for India and the Global South

1. Opportunity to reshape global governance - demand **fairer representation** in international institutions and push for **debt-relief frameworks** (reducing unmanageable national debts).
2. Need to protect domestic industries through **fair trade policies** and resilient economic/diplomatic strategies.
3. Chance to create a **New Economic Deal** that is **equitable** for developing nations.

Domestic Reforms Needed in India

Challenge	Recommended Action
Private Sector Limitations	The **state** should **lead critical sectors** (energy, infrastructure, digital finance, defence, space, health, education, water, agriculture) because private companies are **profit-oriented** and cannot solve structural problems.
Oligopolistic Control	Implement **anti-monopoly laws** and create **sovereign wealth funds** to channel resources toward national goals.
Lack of Scientific & Educational Competitiveness	Invest in **research, education, and teaching autonomy** to make India globally competitive.
Under-Utilized Public Sector	Strategically use **Public Sector Units (PSUs)** like China's **State-Owned Enterprises (SOEs)** to maximise revenue and strategic influence.

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Digital-Financial Alignment missing	Align emerging **digital finance systems** with India's **constitutional and national objectives**.
Lack of Foreign Policy Cohesion	Adopt a **substantive foreign policy**: non-alignment (neutral global stance), bipartisan consensus, and a clear long-term vision for India's global role.

8. Immunity of International Organisations

Why in the News?

1. Several **international organisations (IOs)** are based in India, raising the practical question of whether these IOs enjoy **immunity from Indian courts**.
2. Courts worldwide are increasingly testing IO immunity against **staff rights** and **access to justice**, especially in employment disputes.
3. The debate now focuses not only on whether an **alternative remedy** exists inside an IO, but on whether that remedy is **effective, independent and enforceable**.

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Key Highlights

1. What is the Intergovernmental Organisation (IO)?

a. An IO is formed when two or more states agree by **treaty** to work together on common problems.
b. IOs can perform technical, humanitarian, regulatory, or political roles across borders.
c. They often enjoy a distinct legal status different from private companies or domestic bodies.
d. IOs depend on member-state funding and political support for legitimacy and resources.
e. Accountability of IOs comes from member states, internal rules, and public scrutiny, but direct judicial control is limited.
f. Examples include the **United Nations**, the **World Health Organization**, and regional bodies.

2. How did IO immunity become accepted?

a. **Immunity from jurisdiction** means **domestic courts cannot hear certain cases** against the IO unless immunity is waived.
b. After states created organisations to carry out joint tasks, they found that IOs needed some legal protection to work without interference.
c. The **functional necessity doctrine** developed to explain that limited immunity helps IOs perform their tasks smoothly.
d. Treaties and **headquarters agreements** set out immunities and privileges.

3. What do treaties and headquarters agreements say?

a. An IO's **founding treaty** often grants certain immunities in broad terms.
b. The **headquarters agreement** with the host country fills in details about legal privileges, tax status, and dispute procedures.
c. Domestic law of the host state can also influence how immunities operate in practice.

4. When did staff disputes raise problems?

a. IO staff who lose jobs or complain about treatment have sometimes tried to sue the IO in host-state courts.
b. IOs usually claim immunity and point to **internal dispute resolution** systems.
c. Over time, courts began to ask whether denying access to national courts would leave staff **without any real remedy**.

5. What did national courts start to look for?

a. Courts asked whether an alternative **remedy exists** and if that remedy is **adequate**.
b. Adequacy means the remedy must be **independent**, **impartial**, and **capable of producing enforceable results**.
c. If the internal remedy is only theoretical, or created after a complaint arises, courts may refuse to uphold immunity.

6. What is the emerging balance between functional independence of IOs and rights of individuals today?

a. The modern approach tries to preserve IO **functional independence** while protecting basic **rights of individuals**.
b. Host states and IOs are increasingly expected to provide clear, working dispute mechanisms so immunity does not become a shelter for arbitrariness.

c. India, as a host, must build **HQ agreements** and **domestic practice** that reflect this balance.

Key Terms

1. **Headquarters Agreement**
   a. A **headquarters agreement** is a treaty-like deal between an IO and the country that hosts it.
   b. It sets out practical terms like **immunities, taxes, premises, and staff privileges**.
   c. The agreement translates broad treaty promises into everyday legal rules.
   d. Well-drafted HQ agreements reduce legal uncertainty and clarify dispute procedures.
   e. Host states can use these agreements to require IOs to have operational grievance mechanisms.
   f. HQ agreements are subject to renegotiation and political pressure over time.
2. **Alternative Dispute Resolution (ADR) in IOs**
   a. ADR in IOs can include **internal tribunals, arbitration, or administrative appeals** for staff disputes.
   b. Effective ADR requires written procedures, impartial decision-makers, and enforceable remedies.
   c. Good ADR reduces litigation risk for both IOs and host states.
   d. ADR can improve institutional legitimacy and staff morale.
   e. International examples include staff tribunals and binding arbitration panels used by some IOs.

Challenges and Way Forward

Challenges	Way Forward
Unclear immunity clauses in IO agreements	Negotiate precise immunity and waiver clauses in **headquarters agreements**.
IOs lacking effective internal remedies	Make **operational grievance mechanisms** a condition for hosting privileges.
Risk of denial of justice to staff	Require **independent tribunals** or binding arbitration panels with supervision guarantees.
Possible diplomatic backlash from court decisions	Use **pre-litigation consultations** and diplomatic negotiations to resolve disputes early.
Tension between IO autonomy and domestic law	Adopt host-state guidelines that set **minimum natural justice standards** while protecting core IO functions.

9. Oil Market Battle 2025-26

Why in the News?

1. **Global oil forecasts** diverged sharply in mid-October 2025. OPEC expects a near-balanced market for 2026 while the IEA warns of a large surplus creating uncertainty for prices.
2. Rising **non-OPEC supply**, **weak demand in advanced economies** and **geopolitical moves** have pushed Brent prices down to about $60–64/barrel, a level that directly affects India's import bill and macroeconomy.

Key Highlights

1. **Two decades of structural change set the stage.**
   a. New supply technologies such as shale extraction, horizontal drilling and offshore advances greatly expanded global oil output.
   b. At the same time, demand growth in advanced economies slowed because of weak post-COVID recovery, climate policies and faster adoption of electric vehicles. These twin forces made the market more sensitive to small demand/supply shifts.
2. **Supply surged in 2024–25 and into 2025.**
   a. OPEC+ and several other producers (U.S., Brazil, Canada, Guyana, Argentina) increased output, adding millions of barrels per day compared with a year earlier.
   b. OPEC+ unwound COVID-era cuts and boosted September output, contributing to the growing stock overhang.
3. **Demand growth softened, especially in OECD and China.**
   a. Global demand growth is modest, about 1.2% (≈1.3 mbpd) in 2025, with much of the increase

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coming from the Global South, while OECD consumption remains weak. China's oil demand growth is also restrained by economic slowdown and faster EV uptake.

b. **mbpd** stands for **"million barrels per day."**

4. **Market signals turned bearish in October 2025.**
   a. The IEA revised its outlook sharply bearish, projecting an unprecedented oversupply of roughly 3–4 mbpd in 2026. OPEC, by contrast, saw at most a small shortfall if current pumping continued. The disagreement spooked traders.
5. **Prices fell but geopolitical and strategic moves matter.**
   a. Brent slid toward the low $60s per barrel in October 2025, pressured by the supply glut thesis; yet purchases to refill strategic reserves and tanker stockpiling limited an even steeper fall. Continued geopolitics (sanctions, tensions, tariff wars) keep volatility high.

Key Terms

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1. **OPEC+**
   a. A group led by OPEC members plus allied producers (notably Russia) that coordinates production policy.
   b. It influences global supply and aims to stabilise prices through collective output decisions.
   c. OPEC+ cohesion is affected by diverging fiscal needs and political priorities of members.
   d. Its output decisions can counter or amplify non-OPEC supply trends.
   e. Understanding OPEC+ is key to analysing short-term oil price moves.
2. **IEA (International Energy Agency)**
   a. An intergovernmental body that provides policy advice and market analysis, mainly for OECD countries.
   b. Its monthly and medium-term oil outlooks are influential for traders, investors and policymakers.
   c. The IEA focuses on demand trends, energy security and transitions to low-carbon energy.
   d. Its forecasts can differ from producer bodies, creating market volatility.
   e. Policymakers monitor IEA scenarios for contingency planning.
3. **Brent crude**
   a. A major international oil price benchmark used to price crude traded globally.
   b. Movements in Brent affect import bills for countries like India and inform fuel pricing domestically.
   c. Brent's level reflects supply, demand, geopolitical risk and inventories.
4. **Supply overhang / glut**
   a. A situation where available oil supply exceeds demand, causing inventories to build and prices to fall.
   b. Gluts can be temporary if demand recovers or producers cut output; they can also persist, pressuring investment in new production.
5. **Contango**
   a. A market structure where future delivery prices are higher than spot prices, encouraging storage and stockpiling.
   b. Contango often appears when spot supplies are abundant or near-term demand is weak.
   c. It affects trading, shipping (tankers used as floating storage) and physical markets.

Implications for India

1. **Immediate fiscal and current account relief.**
   a. Lower oil prices reduce India's import bill and fuel subsidy burden, improving the fiscal balance and narrowing the current account deficit. India spent about $137 billion on crude in 2024–25, so price moves matter materially.
2. **Inflation and growth effects.**
   a. Cheaper oil lowers transport and fuel costs, easing headline inflation and giving the government room to increase capital spending that supports growth.
3. **Energy security and supplier choices.**
   a. A global glut can reduce India's dependence on discounted Russian crude, easing some geopolitical friction risks, but a rapid price swing could complicate long-term contracting and refining economics.

4. **Domestic policy space to accelerate transition.**
   a. Lower fossil prices free some fiscal headroom which India can use to subsidise clean energy investments, EV infrastructure, and energy efficiency — helping decarbonisation goals.
5. **Short-lived gains risk.**
   a. Oil markets are cyclical. Any relief could reverse quickly if geopolitical events, a pick-up in demand, or supply cuts change the picture. India should avoid policy complacency.

Challenges and Way Forward

Challenges	Way Forward
1. Fiscal vulnerability to oil price swings — Large import bill exposes fiscal balance to price spikes.	Build larger, rules-based strategic reserves; use a portion of windfall savings for a fuel-price stabilisation buffer and infrastructure spending.
2. Over-reliance on a narrow set of suppliers — Concentration risks create geopolitical exposure.	Diversify crude sources and long-term contracts; expand LNG and renewables partnerships; use strategic diplomacy for supply stability.
3. Limited refinery flexibility and feedstock risk — Some refineries are optimised for specific crude grades (eg, Russian heavy crude).	Invest in refinery upgrading (flexible crude processing) and new complex units to handle diverse grades; incentivise capital expenditure in refining.
4. Short time horizon in energy transition planning — Cheap oil can delay investment in clean tech.	Ring-fence part of fossil fuel savings to accelerate EV infrastructure, renewables auctions, and green hydrogen pilots.
5. Trade, remittance and export linkages to West Asian demand — Lower oil revenues in Gulf economies could reduce demand and remittances.	Broaden export markets, promote skill development for non-oil sectors, and build fiscal contingency plans for remittance shocks.

10. 2026: ASEAN-India Year of Maritime Cooperation

Why in the News?

1. **Prime Minister Narendra Modi** virtually addressed the **22nd ASEAN–India Summit** held in **Kuala Lumpur, Malaysia**, and announced **2026 as the "ASEAN–India Year of Maritime Cooperation."**
2. The summit reaffirmed the **Comprehensive Strategic Partnership** between India and ASEAN, focusing on **maritime security, trade, cultural ties, and regional stability.**
3. The meeting came at a time when the world is facing an **"era of uncertainties,"** yet the India–ASEAN relationship continues to **make steady progress**.

Association of Southeast Asian Nations (ASEAN)

1. **Formation and Background**
   a. **Established: 8 August 1967**
   b. **Founding Members:** Indonesia, Malaysia, Philippines, Singapore, and Thailand
   c. **Formed through: Bangkok Declaration (ASEAN Declaration)**
   d. **Headquarters: Jakarta, Indonesia**
   e. **Motto:** *"One Vision, One Identity, One Community"*
   f. **Flag Symbolism:** Represents peace, stability, and unity among member nations.
2. **Membership**
   a. ASEAN currently has **10 member countries**:
   b. Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, Vietnam, Laos, Myanmar, and Cambodia.
   c. **Timor-Leste** (East Timor) has been **granted observer status (2022)** and is on track to become the **11th full member** in coming years.
3. **Objectives**
   a. The **primary goals** of ASEAN are:
      i. **Promote regional peace and stability** through dialogue and non-interference.
      ii. **Accelerate economic growth, social progress, and cultural development.**
      iii. **Enhance cooperation** in trade, education, science, and technology.

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iv. **Maintain Southeast Asia as a Zone of Peace, Freedom, and Neutrality (ZOPFAN).**
v. **Strengthen resilience** against external influences or rivalries.

4. **Key ASEAN Organs and Mechanisms**

Body / Mechanism	Purpose
ASEAN Summit	Highest decision-making body; held annually.
ASEAN Secretariat	Administrative and coordination hub, based in Jakarta.
ASEAN Regional Forum (ARF)	Security dialogue involving 27 countries (including India, USA, China, etc.).
ASEAN Free Trade Area (AFTA)	Promotes free trade and economic integration.
ASEAN Economic Community (AEC)	Aims for a **single market and production base**.
ASEAN Defence Ministers' Meeting (ADMM+)	Cooperation on regional security and defence issues.

5. **Key Milestones**
   a. **1976:** First ASEAN Summit in Bali; establishment of the **Treaty of Amity and Cooperation (TAC)**.
   b. **1992:** Launch of the **ASEAN Free Trade Area (AFTA)**.
   c. **2007:** Adoption of the **ASEAN Charter**, giving ASEAN a **legal identity** and defining its institutional structure.
   d. **2015:** Formation of the **ASEAN Community**, comprising:
      i. ASEAN Political-Security Community (APSC)
      ii. ASEAN Economic Community (AEC)
      iii. ASEAN Socio-Cultural Community (ASCC)

6. **India–ASEAN Relations**

Aspect	Highlights
Start of Dialogue Partnership	Began in **1992**
Summit-level Partnership	Established in **2002**
Comprehensive Strategic Partnership	Upgraded in **2022**
Key Policies	Linked through India's **"Look East Policy"** (1991) and **"Act East Policy"** (2014).
Trade Agreement	**ASEAN–India FTA (2010)** under **AITIGA** (Trade in Goods Agreement).
Connectivity Projects	**India–Myanmar–Thailand Trilateral Highway**, **Kaladan Multimodal Project**.
2026 Initiative	Declared **"ASEAN–India Year of Maritime Cooperation."**

7. **Significance**
   a. **Strategic Location:** Lies at the crossroads of the **Indian and Pacific Oceans** that are vital for global trade.
   b. **Economic Powerhouse:** Combined GDP exceeds **$3.6 trillion**, making ASEAN the **5th largest economy globally**.
   c. **Security Role:** Acts as a **balancing power** amidst major powers (China–US–India).
   d. **Cultural Link:** Shared **historical and civilizational ties** with India, including Buddhism and maritime trade.
   e. **Indo-Pacific Centrality:** Plays a key role in maintaining **peace, freedom of navigation, and rules-based order.**

Key Highlights

1. **Setting the Tone: Partnership Amid Global Uncertainties**
   a. PM Modi emphasized that **even in a time of geopolitical uncertainty**, the **India–ASEAN Comprehensive Strategic Partnership** continues to be a **pillar of regional peace, stability, and growth.**
   b. He described ASEAN as a **"cultural partner"** of India, highlighting the **shared history, values, and civilizational connections** that bind the two regions.
   c. He welcomed **Timor-Leste** as the **newest member** of ASEAN, underlining India's commitment to inclusivity in the region.

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2. **Economic Agenda: Revisiting AITIGA**
   a. PM Modi urged an **early review of the ASEAN–India Trade in Goods Agreement (AITIGA)** to **unleash the full economic potential** of bilateral trade.
   b. He stated that both sides together represent **nearly one-fourth of the global population** and can act as **engines of growth** for the **Global South.**
   c. The review aims to **address tariff and non-tariff barriers**, streamline customs procedures, and promote **balanced trade** between India and ASEAN nations.
3. **Maritime Cooperation: 2026 Declared the "ASEAN–India Year of Maritime Cooperation"**
   a. A major announcement was declaring **2026 as the ASEAN–India Year of Maritime Cooperation.**
   b. This initiative will focus on **joint naval exercises, maritime connectivity, blue economy, and marine resource management.**
   c. It marks a strategic shift towards **securing the Indo-Pacific waters**, crucial for trade, energy, and regional peace.
4. **Broader Collaboration and Global Role**
   a. PM Modi stressed India's and ASEAN's shared responsibility as **companions in the Global South**, pledging cooperation in:
      i. **Digital inclusion and technology sharing**
      ii. **Food security and resilient supply chains**
      iii. **Humanitarian Assistance and Disaster Relief (HADR)** activities in the ASEAN region
   b. He also underlined collaboration in **education, science and technology, green energy, and cybersecurity**, while calling for **unity against terrorism.**
   c. The Prime Minister's remarks concluded by reaffirming the **century of India and ASEAN**, projecting the 21st century as a time of joint progress and regional balance.

Implications

1. **Enhanced Maritime Security:** The focus on the maritime year strengthens India's role in ensuring safety and freedom of navigation in the Indo-Pacific.
2. **Trade and Investment Growth:** A reformed AITIGA can expand India's access to Southeast Asian markets and attract FDI from ASEAN.
3. **Strategic Balance in the Indo-Pacific:** Deepening ties with ASEAN helps India counterbalance major power rivalries in the region while upholding **ASEAN centrality.**
4. **Regional Stability and Cooperation:** Collaboration on disaster relief, digital connectivity, and food security enhances India's role as a **trusted development partner.**
5. **Soft Power Diplomacy:** Cultural, educational, and tourism-based ties strengthen India's image as a **benign and reliable partner** in Asia.

Challenges and Way Forward

Challenges	Way Forward
1. Maritime Security Gaps: Limited coordination and capacity disparities among ASEAN navies hinder effective maritime monitoring.	Enhance **joint naval exercises**, establish **shared maritime domain awareness systems**, and provide **training support** for smaller ASEAN countries.
2. Trade Imbalances under AITIGA: High tariffs and non-tariff barriers restrict fair trade growth.	Conduct an **early review of AITIGA**, simplify **customs procedures**, and ensure **balanced benefits** for all member states.
3. Strategic Competition in the Indo-Pacific: Rivalries among global powers may affect regional unity.	Uphold **ASEAN centrality**, promote **inclusive diplomacy**, and avoid aligning with any one power bloc.
4. Implementation Challenges in Development Projects: Commitments often face delays or insufficient follow-up.	Establish **joint monitoring frameworks** and **time-bound project evaluations** to ensure accountability.
5. Uneven Economic Gains: Smaller ASEAN economies may lag behind in benefiting from India's initiatives.	Offer **capacity-building support**, technology transfers, and **targeted financial assistance** through concessional lines of credit.

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SECURITY

1. India's Digital Economy and Cyber Frauds

Context

India's digital economy, driven by UPI, e-commerce, and affordable internet, has boosted inclusion and convenience but also created new vulnerabilities. Cyber frauds now rely more on social engineering (psychological manipulation) than on technical hacking.

What is cyber fraud?

A **cyber fraud** is a crime where digital platforms are misused to deceive individuals or institutions for financial gain, often through psychological manipulation or data theft.

Who are the main victims of such frauds?

1. **Elderly and rural citizens**: less digitally literate but often with high savings.
2. **Job seekers and loan applicants**: exploited through false opportunities.
3. Even **educated professionals** fall prey due to fear, pressure, or urgency created by fraudsters.

How has the nature of cyber frauds changed over time?

1. Earlier, crimes were mostly **physical or technical** – like ATM withdrawals or password theft.
2. Now they are more **psychological**, involving phishing, OTP/UPI scams, fake loan/job offers, and digital arrests (impersonation of police/customs).

How do cyberfrauds operate?

Cyber frauds typically operate by exploiting **human trust and system loopholes. Examples:**

1. **Social Engineering**: manipulating fear, urgency, or greed to trap victims.
2. **Phishing**: fake emails/SMS to steal sensitive information.
3. **Remote Access Scams**: malicious apps giving fraudsters device control.
4. **Digital Arrests**: impersonation of officials with fake warrants to extort money.
5. **Identity Theft**: misuse of Aadhaar, PAN, or bank details for further frauds.

Why is cyber fraud increasing in India?

1. **Data Leaks:** Customer information circulates freely, making targeting easier.
2. **Weak KYC Norms:** Fake or incomplete KYCs allow **mule accounts** (bank accounts used by fraudsters to receive and transfer illegally obtained money) to flourish.
3. **Slow Institutional Response:** Banks and cyber police act reactively, not proactively.
4. **Inadequate Monitoring Tools:** Large abnormal transactions often go unchecked, while small credit card spends get verified.
5. **Poor Coordination:** Banks, telecoms, and cyber police rarely share intelligence in real-time.

What are the common patterns observed in large-scale cyber frauds in India?

1. **Unusual Scale:** Transactions are often **many times larger than the customer's normal activity**, signaling fraud.
2. **High Frequency:** Multiple debits occur in a short span, rather than single or occasional transactions.
3. **Mule Accounts:** Money is routed to **mule accounts**, then dispersed to the smaller or cooperative banks to hide the trail, known as **layering**.
4. **Delayed Freezing:** Banks often take time to block accounts, allowing funds to move out of reach.

Challenges and Way Forward

Challenges	Way Forward / Solutions
Banks' limited role – generic advisories, poor fraud detection, failure to flag abnormal transactions	Implement **AI-driven monitoring** with personalised transaction profiles and anomaly detection; identify and block mule accounts with weak KYC

Cyber police constraints – lack manpower, technology, training; delays lead to permanent loss	Establish **24/7 dedicated cyber response units**, equip them with AI tools, and enhance international cooperation for cross-border fraud
Regulatory weaknesses – RBI guidelines exist but enforcement and accountability are weak	Enforce **strict compliance**, mandate action within the **24-hour golden window**, and ensure **swift victim compensation**
Public unawareness – victims avoid reporting due to stigma or lack of faith in recovery	Launch **awareness campaigns**, educate citizens about cyber threats, and simplify reporting mechanisms
Technology gaps – outdated or insufficient tools for fraud detection	Adopt **Blockchain** for tamper-proof data, **Machine Learning** to predict high-risk accounts, and shared fraud intelligence networks

2. India's Push for Integrated Theatre Commands

Why in the News?

1. India is intensifying **military reforms** to respond to multi-domain threats driven by **AI, automation, drones, and precision weapons**, requiring faster and more integrated operations.
2. Recent policy moves — creation of **tri-service agencies**, new modular combat units (e.g., **Rudra**, **Bhairav**), and emphasis on **theatre commands** and joint professional military education (PME) — show accelerated efforts to build true **jointness**.

Key Highlights

1. **Strategic Context: a changing character of war**
   a. Modern conflict is becoming **cheaper and faster** because of technologies such as **AI, drones, automation**, and cheap precision munitions.
   b. India faces a **two-front threat** and must prepare for **multi-domain operations** where information superiority and speed are as decisive as firepower.
   c. These changes demand reforms in **structure, doctrine, technology, force composition, PME, and readiness**.
2. **From coordination to command: organisational reforms**
   a. The government and **Ministry of Defence** are shifting focus from mere **service coordination** to empowered **command structures**.
   b. The **Inter-Services Organisations (Command, Control and Discipline) Rules, 2025** seek to give commanders administrative and disciplinary authority needed for joint action.
   c. Tri-service agencies have been created under **HQ Integrated Defence Staff (IDS)** for **cyber, space, and special operations**, demonstrating structural moves toward joint functioning.
3. **New battle formations and capability mix**
   a. Modular formations such as **Rudra** and **Bhairav** blend infantry, artillery, armour, air defence, engineers, and surveillance into **mission-specific combat groups** for rapid deployment.
   b. The **Integrated Battle Groups (IBGs)** concept aims to field all-arms brigades with 12–48 hour deployability, combining conventional and unmanned systems.
   c. Naval and air acquisitions — **Rafale-M**, MQ-9B drones — strengthen **tri-service ISR, strike, and fleet air defence** options.
4. **Doctrine, PME and technology for future warfare**
   a. Foundational doctrines (Joint Doctrine 2017; Army Land Warfare Doctrine 2018) provide a template but **doctrinal evolution** is needed to address hybrid, multi-domain wars from the outset.
   b. **Ran Samvad** and similar forums highlight the need for **"hybrid warriors"** — personnel skilled in scholarship, technology, and information operations.
   c. Digital command-and-control networks like **Akashteer** and integration with **IACCS** demonstrate steps toward shared data standards and automated responses.

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Implications

1. **Operational Readiness** – Faster decisions, improved responsiveness; lack of jointness risks vulnerability against adversaries with theatre commands.
2. **Force Modernisation** – Focus on interoperable, modular systems; greater role of indigenous R&D and private sector.
3. **Doctrinal Shift** – Move PME from single-service to tri-service, emphasising AI, cyber, space; build technologist-commanders.
4. **Strategic Signalling** – Reforms like IBGs show deterrence and adaptability; influence neighbours' military planning.
5. **Cultural Change** – Overcoming service silos needs joint accountability, clear metrics, and learning-oriented reforms.

Key Terms

1. **Theatre Command**
   a. A command structure that **integrates forces from all services** under a **single commander** for operations in a **defined geographic area**.
   b. Provides unified operational control, faster decision-making, and simplified logistics.
   c. Requires joint staff, shared intelligence, and common operational doctrine.
   d. Successfully employed by several militaries to reduce inter-service friction.
2. **Professional Military Education (PME)**
   a. **Formal military education** to develop officers' strategic, operational, and technical competencies.
   b. Joint PME focuses on inter-service doctrine, multi-domain operations, and technology literacy.
   c. Critical to develop **technologist-commanders** who can lead data-driven campaigns.
   d. Bridges the gap between academic knowledge and operational application.
3. **Multi-Domain Operations (MDO)**
   a. Concept of integrated operations across land, sea, air, space, cyber and information domains.
   b. Emphasises synchronized effects, rapid tempo, and cross-domain deterrence.
   c. Relies on shared situational awareness, common data fabrics and resilient C2.
   d. Makes information superiority and speed decisive factors.
   e. Necessitates doctrinal evolution and technology-enabled forces.

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Challenges and Way Forward

Challenge	Way Forward (solution addressing the challenge)
Legacy service silos and institutional resistance to change.	Implement **phased activation of theatre commands** with clear mandates, joint staffing quotas, career incentives, and shared performance metrics to align institutional incentives.
Insufficient joint PME and absence of technologist-commanders.	Reform curricula across defence colleges to include **AI, cyber, data science, and systems engineering**, and create fellowship programs with universities and industry for operational immersion.
Lack of common data and interface standards across platforms.	Mandate **interoperability protocols and open architecture** procurement rules; establish a tri-service data standards authority to enforce compliance.
Slow acquisition cycles and technology transition from lab to field.	Fast-track acquisition through **rapid prototyping pathways, defense-startup partnerships, and defined test ranges**, with budget lines for iterative trials.
Civil-military coordination gaps with industry and academia.	Institutionalise **civil-military fusion cells** within HQ IDS and services, with joint funding for R&D, university chairs, and embedded industry officers in PME.

3. Ladakh's Demands and Protests

Why in the News?

The conversion of **Ladakh** into a **Union Territory** without a **legislature** in **2019** has fueled long-standing **discontent**, culminating in **violent protests** in **2025**

demanding **statehood**, **Sixth Schedule safeguards**, and **local empowerment**, intensified by the **NSA arrest** of activist **Sonam Wangchuk**.

Key Highlights

1. **Ladakh before 2019: Divided Aspirations**
   a. **Leh (Buddhist-majority district)** had long demanded UT status with the legislature, because they felt ignored under J&K's rule (dominated by Kashmir politics).
   b. **Kargil (Muslim-majority district)**, on the other hand, opposed the idea of bifurcation and wanted either reintegration with J&K or separate statehood for Ladakh.
   c. They **(Muslim-majority district)** feared that being separated from J&K and directly ruled from Delhi would **dilute their voice and identity**.
2. **August 2019 – Bifurcation of J&K and UT Status for Ladakh**
   a. Leh celebrated the UT status, believing it was a recognition of its distinct identity.
   b. Kargil protested, seeing the move as a betrayal.
   c. Soon, Leh realised that the UT came **without a legislature**, creating disappointment and disillusionment.
3. **Emergence of Movements and United Demands**
   a. In **2020**, the **People's Movement for Sixth Schedule** (later the **Leh Apex Body**) demanded inclusion under the **Sixth Schedule** for protection of land, jobs, and identity.
4. **What led to the joint movement of the Leh Apex Body (LAB) and Kargil Democratic Alliance (KDA)?**
   a. The **absence of legislature, lack of safeguards, unemployment, and centralised governance** made both Leh and Kargil realise that their struggles were the same.
   b. This **shared sense of betrayal** led to the **joint movement of LAB and KDA**, demanding statehood and Sixth Schedule protections.
   c. In **2021**, **LAB** and **KDA** joined forces, demanding:
      i. **Statehood** for Ladakh
      ii. **Sixth Schedule safeguards**
      iii. A **Public Service Commission (PSC)**
      iv. Separate **parliamentary seats** for Leh and Kargil
5. **Government's Response and High-Powered Committee (2023 onwards)**
   a. A **High Powered Committee (HPC)** was set up in 2023 to engage with stakeholders.
   b. Despite several rounds of talks, **no concrete outcome** was achieved, leading to growing alienation.
6. **Role of Sonam Wangchuk and Gandhian Protests**
   a. **Climate activist Sonam Wangchuk** used **non-violent methods** - hunger strikes, padayatras, and ecological activism.
   b. He gave the movement national attention by linking it to **ecological fragility, democratic deficit, and youth unemployment**.
   c. His arrest under the **NSA** in 2025 further inflamed public anger.
7. **Why was Sonam Wangchuk arrested?**
   a. His **peaceful but highly influential protests mobilised thousands of Ladakhis** and attracted national attention.
   b. After violence broke out in September 2025, the government, citing **security concerns in a sensitive border region**, used the **NSA** to detain him.
   c. Ironically, this arrest only **strengthened the Ladakh movement**.
8. **Centralised Bureaucratic Governance**
   a. The **Lieutenant Governor's office** holds centralised power, sidelining **Ladakh Autonomous Hill Development Councils (LAHDCs)**.
   b. Lack of **local cadres** and absence of a **PSC** have led to joblessness among Ladakhi youth.
   c. Bureaucrats unfamiliar with Ladakh's **socio-cultural realities** make policies disconnected from local needs.
9. **Partial Reforms but Incomplete Solutions (2025 Regulations)**
   a. The **Presidential Regulations (June 2025)** provided:

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i. **85% job reservation** for locals
ii. Recognition of **five Ladakhi languages**
iii. **33% women's reservation** in Hill Councils

b. Despite this, the **core issues of statehood, Sixth Schedule, and PSC** remain unaddressed, which led to the recent mass movement.

Implications

1. **Political Alienation** – Lack of representation and erosion of local institutions create a sense of betrayal.
2. **Strategic Risks** – Disaffection in Ladakh, a **frontier against China and Pakistan**, can weaken India's defence posture.
3. **Ecological Fragility** – Unregulated tourism, glacier retreat, and aquifer depletion threaten Ladakh's fragile ecosystem.
4. **Youth Disillusionment** – Rising unemployment and absence of opportunities risk long-term instability.
5. **Democratic Deficit** – Concentration of power in bureaucracy undermines India's **federal and democratic ethos**.

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Challenges and Way Forward

Challenges	Way Forward
Absence of legislature and democratic representation	Establish either a **Legislative Assembly** or grant **greater legislative powers to LAHDCs**.
Lack of constitutional safeguards for land, culture, and identity	Extend **Sixth Schedule-like protections** to preserve Ladakh's tribal and ecological heritage.
Youth unemployment and absence of PSC	Create a **Ladakh Public Service Commission** to ensure fair recruitment of locals.
Ecological vulnerability from unchecked projects	Draft an **Ecological Charter** ensuring sustainable, community-led development with strict environmental standards.
Historical divide between Leh and Kargil	Institutionalise a **permanent dialogue forum** (Leh Apex Body + Kargil Democratic Alliance) for joint decision-making.

4. 2023 NCRB report

Context

The **NCRB's Crime in India 2023 report**, released after a year's delay, highlights key trends, **decline in murders, surge in crimes against Scheduled Tribes due to Manipur violence, and rise in cybercrime**, reflecting emerging **internal security and governance challenges**, concerns over **data transparency**, and gaps in **law enforcement and social protection systems**.

Purpose of the NCRB Report

1. The NCRB **annually compiles data** from police stations nationwide to provide a **statistical snapshot** of crimes, victims, accused, and law enforcement performance.
2. It forms the backbone of **evidence-based policymaking**, helping governments assess the effectiveness of justice delivery and identify areas for reform.
3. However, these figures require cautious interpretation as **state-wise comparisons are unreliable** since data depend on **levels of reporting and registration**, not only actual incidence.

Key Statistical Highlights (2023)

1. **Overall trends:** 2023 NCRB report released after delay, showing shifts in social and digital crime patterns.
2. **Murder cases:** Decreased by **~3%** nationally, mostly linked to **personal disputes or vendetta**.
3. **Crimes against Scheduled Tribes (STs):** Increased by **~29%**, mainly due to **Manipur ethnic violence** (cases jumped from 1 in 2022 to 3,399 in 2023).
4. **Cybercrime:** Increased by **~31%**, driven by **financial fraud and online sexual exploitation**.
5. **Crimes against children:** Increased by **~9%** with the **offender known in 96%** of incidents.
6. **Crimes against women:** Overall increase by **0.4%**, but **dowry-related cases** surged **~15%**.

While a drop in violent crimes like murder indicates improved law enforcement, the rise in **socially rooted and cyber-related crimes** signals a **shifting crime landscape** demanding new institutional capacities.

Vulnerable Sections

1. **Scheduled Tribes (STs):** The steep **~29%** rise, mainly from Manipur, underlines how **ethnic conflict and state failure** can escalate violence. High rates in **Madhya Pradesh and Rajasthan** reveal systemic vulnerabilities among tribal populations in central India.
2. **Women:** The modest overall rise hides worrying trends, particularly dowry-related violence (+**~15%**). This reflects **persistent patriarchal norms** and limited deterrence despite legal safeguards.
3. **Children:** Crimes rose by **~9%** revealing the **need for family and institutional awareness**. Application of the **POCSO Act** in consensual adolescent relationships calls for **sensitive handling** by police and prosecutors.

Emerging Crime Patterns

1. **Cybercrime:** The most rapidly growing domain, with a **~31%** jump, driven by online fraud, impersonation, and exploitation.
   a. **Drivers:** Expanding digital transactions and poor cyber hygiene.
   b. **Challenge:** Despite more cyber cells, **forensic and technical expertise** remain inadequate.
2. **Urban Crimes:** Metropolitan areas continue to record higher crime growth due to population density, anonymity, and economic disparity.
3. **Societal Crimes:** Rising atrocities against tribals, dowry deaths, and child abuse indicate deep **social and cultural pathologies** requiring community reform beyond policing.

Challenges and Way Forward

Challenges	Way Forward
1. Delayed release of crime data: hampers transparency, accountability, and evidence- based policymaking.	**Ensure timely and regular release of NCRB data**; institutionalize **data audits** and strengthen **coordination between Centre and States** for standardised reporting.
2. Weak forensic and investigative capacity: poor conviction rates and pendency.	**Invest in forensic infrastructure, training, and modern equipment**; expand **digital crime labs** and **forensic science universities**.
3. Rising ethnic and caste violence: reflects lack of preventive governance and early conflict detection.	Develop **early warning systems**, promote **community dialogue**, and deploy **peace-building and rapid response units** in conflict-prone areas.
4. Regional disparities in crime trends: high incidence of atrocities in certain states (e.g., MP, Rajasthan, Manipur).	Implement **region-specific policing strategies**; enhance **state-level monitoring** and **targeted socio-economic interventions** for vulnerable groups.
5. Underreporting and stigma: victims of gender and caste-based crimes avoid legal recourse.	**Victim sensitisation campaigns**, **anonymous reporting mechanisms**, and **confidential support services**; promote **gender-sensitive policing**.
6. Justice delivery delays and low conviction rates: erode public trust in legal institutions.	Establish **fast-track and special courts**, strengthen **public prosecutors**, and ensure **time-bound investigation and trial frameworks**.
7. Lack of ethical and sensitive policing: secondary victimisation and bias in investigation.	Incorporate **ethics, empathy, and human rights training** in police curricula; strengthen **internal accountability and grievance redressal mechanisms**.
8. Limited cybercrime preparedness: inadequate digital literacy and poor response to online fraud/ exploitation.	Expand **cyber labs**, create **state-level CERTs**, and promote **digital literacy** among citizens and small businesses.

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9. Poor data utilisation in policymaking: NCRB statistics underused for preventive governance.	Implement **AI-based crime analytics** and **predictive policing tools** for hotspot identification and resource allocation.
10. Deep-rooted social causes of crime: patriarchy, caste bias, and ethnic divisions persist.	Launch **social and educational reforms** focusing on inclusion, value education, gender equality, and civic awareness.

5. MCOCA and Organised Crime

Why in the News?

1. Delhi Police has set up a dedicated **MCOCA Cell** (special team of investigators and legal experts) to improve the filing and prosecution of cases under the **Maharashtra Control of Organised Crime Act (MCOCA)**.
2. The move comes after several court setbacks where police had wrongly used MCOCA, leading to very few convictions in Delhi, even though organised crime has been increasing.

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What is Organised Crime?

1. **Organised crime** refers to **criminal activities carried out by a structured group (syndicate or gang)** operating over a period of time with the aim of making **illegal profits or gaining power**.
2. **Key features:**
   a. **Group-based activity:** Involves two or more people working together in a planned manner.
   b. **Continuity:** Crimes are not one-time acts; they are part of a long-term operation.
   c. **Economic motive:** The main goal is to earn money or gain control (through extortion, smuggling, drug trafficking, etc.).
   d. **Use of violence and threats:** Intimidation and coercion are often used to maintain control.
   e. **Corruption and influence:** Organised groups may bribe officials or misuse connections to escape punishment.
3. In simple terms, organised crime is a **systematic and continuing network of illegal activities** like extortion, trafficking, and contract killings. They run like a business for profit and power.

What MCOCA is and its legal tests

1. **MCOCA** is a special law to combat organised crime and gang syndicates (originally enacted in Maharashtra, 1999). Delhi adopted it in 2002.
2. Five essential conditions must be satisfied to invoke MCOCA:
   a. a syndicate (two or more);
   b. continuous pattern of unlawful activity;
   c. violent conduct or intimidation;
   d. pecuniary gain or undue advantage;
   e. multiple prior chargesheets in the preceding 10 years.
3. Properly framed MCOCA cases can cover modern organised crimes including extortion, cyber fraud by syndicates, and offences orchestrated from abroad.

Court setback and context

1. In **May**, a Delhi court granted bail to an accused, holding that the police had **illegally invoked MCOCA** because the FIR did not meet the law's "essential requirements" (notably the required pattern of organised crime).
2. Since MCOCA was adopted in Delhi (2002), convictions under it have been **very rare**; only one notable successful prosecution (Gogi gang) led to guilty pleas.

Why did Delhi Police create the MCOCA Cell?

1. Police found **common procedural flaws** like weak chargesheets, poor evidence framing, and misunderstandings of MCOCA's legal tests which caused courts to reject MCOCA charges.
2. To fix this, Delhi Police formed a **specialised MCOCA Cell** headed by a Deputy Commissioner (Crime Branch) with legal officers and inspectors focused on record-keeping, financial data, and SOP compliance.

Functions and resources of the Cell

1. The Cell will **supervise MCOCA invocations**, ensure legal standards are met, maintain a **database of MCOCA cases**, distribute SOPs to district units, and train staff in evidence collection and drafting chargesheets.
2. It aims to reduce bail grants based on technical defects and increase the chance of sustaining MCOCA charges in court.

Operational rationale and targets

1. The law is useful against gangs led from abroad or run from behind bars (e.g., Lawrence Bishnoi, Goldy Brar, Hashim Baba networks).
2. Police have invoked MCOCA against several syndicates in recent years; the new Cell is intended to standardise and strengthen prosecutions.

Implications

1. **Better case quality:** Centralised expertise should improve chargesheets and evidence, reducing technical bail and acquittals.
2. **Longer detention of high-risk criminals:** Stronger MCOCA cases keep organised criminals off the streets during trial, curbing predatory crimes like extortion and contract killings.
3. **Judicial scrutiny will persist:** Courts will continue to test MCOCA invocation strictly; legal robustness is essential.
4. **Deterrence effect:** Consistent, well-founded use of MCOCA could deter gangs operating across states or from overseas.
5. **Civil-liberty caution:** Greater use of a stringent law requires safeguards against misuse and strict oversight to protect rights.

Challenges and Way Forward

Challenge	Way Forward
Poorly framed charges and weak evidence	Train investigators in MCOCA tests; use legal experts at the filing stage; standardise chargesheet formats.
Lack of financial and digital investigation skills	Build forensic finance and cyber units; partner with specialised agencies for tracing proceeds and online networks.
Judicial rejection due to procedural errors	Introduce SOPs, peer reviews of filings, and pre-filing legal vetting by the MCOCA Cell.
Risk of misuse or over-broad invocation	Maintain independent oversight, periodic audits of MCOCA cases, and transparent public reporting of outcomes.
Cross-jurisdictional crimes (abroad/ other states)	Strengthen coordination with central agencies (NIA, ED), Interpol channels, and State police for joint investigations.

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ECONOMY

1. October 2025 Banking Reforms

Why in the News?

From **October 2025**, **Reserve Bank of India** (RBI) will implement key **financial** and **regulatory changes** to improve **flexibility**, **transparency**, and **efficiency**.

Key things that will change from October 2025

RBI has divided changes into **2 parts: some effective from 1 October 2025** (Interest Rate on Advances, Loans against Gold/Silver Collateral, PDIs and continuous cheque clearing) and **some as draft proposals** which **may** be effective from **20 October 2025** (**GML, Exposure Norms for Foreign Bank Branches, Credit Information Reporting**)

1. **Interest Rate on Advances**:
   a. The **RBI** has given **banks freedom** to decide interest rates on **floating-rate loans** (loans where interest moves up or down with the market rate). So, borrowers will see rate changes sooner, instead of waiting for 3 years, strengthening monetary transmission.
   b. Banks can also allow borrowers to **switch from fixed-rate loans** to **floating-rate loans** at their choice, making **loans more flexible** and giving borrowers **greater control** over their repayment burden.
2. **Loans against Gold/Silver Collateral**
   a. RBI has eased rules for loans against gold/silver collateral, allowing Scheduled Commercial Banks (SCBs) to provide working capital loans to jewellers.
   b. It also allowed **Tier 3 and Tier 4 Urban Co-operative Banks (UCBs)** to lend to manufactures and industrial units that use gold as **raw material**, and also to **domestic non-manufacturers** who outsource jewellery production.
3. **Perpetual Debt Instruments (PDIs)**:
   a. RBI has revised rules for PDIs (bonds with no maturity, only interest payments), allowing banks to issue them in foreign currency or as rupee bonds overseas.
   b. This gives banks more capital headroom (flexibility to raise funds globally), helping strengthen their capital base and attract foreign investment.
4. **Continuous Cheque Clearing**: RBI will shift to continuous cheque clearing (multiple settlements during the day instead of fixed batches), making payments faster for individuals and businesses.
5. **Gold Metal Loans (GMLs):** The **repayment period** is now **270 days** (up from **180**), helping **small jewellers** and **gold-based industries** with **better credit access** and **flexible repayment**.
6. **Exposure Norms for Foreign Bank Branches:** RBI has asked foreign banks in India to explain how they compute exposures (risk from big loans), manage risks, and link exposure limits to Tier-1 Capital (core bank capital), aiming to improve transparency and risk control.
7. **Credit Information Reporting:** RBI plans to shift credit reporting from monthly/quarterly to weekly, ensuring fresher data, quicker error fixes, and better CKYC (Central Know Your Customer) capture—helping lenders make faster, more accurate loan decisions.

Other Key Changes

1. **Updated Charges & Eligibility:** Banks and institutions revised **fees and norms** to improve sustainability and security (e.g., **India Post – higher Speed Post rates with OTP security**).
2. **Indian Railways**: Aadhaar verification is now compulsory for booking general tickets online. This helps stop misuse by agents and ensures genuine bookings.
3. **Pension Reforms & Deadlines:** Subscribers get **more investment flexibility** (e.g., NPS 100% in equities) but face **higher market risk**; government employees' choice between **UPS and NPS** is now **final**.

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Benefits associated with these changes

For Borrowers	For Banks	For Economy
Faster **EMI adjustments** and repayment flexibility	Stronger **capital-raising** capacity through global markets	Enhanced **financial system resilience**
Greater **loan access**, especially for those using **gold/ silver** as collateral	Clearer **exposure norms** for foreign bank branches	Improved **monetary policy effectiveness**
More accurate and **up-to-date credit history**	Better **stability** and **risk management**	Increased **credit flows**, **transparency**, and **confidence** in the banking sector

Challenges and Way Forward

Challenge	Way Forward
Floating-Rate Loans: Sudden interest rate changes may shock borrowers; banks may face income volatility.	Strengthen financial literacy, promote informed borrowing, and improve banks' risk monitoring.
Gold Metal Loans (GMLs): Risk from fluctuating gold/silver prices and credit defaults by small jewellers.	Ensure proper collateral valuation, insurance cover, and regular risk assessments.
Continuous Cheque Clearing: Technical and operational issues in moving from batch to real-time clearing.	Upgrade IT systems, add backup infrastructure, and train staff for smooth transition.
Pension & Investment Reforms: 100% equity in NPS exposes subscribers to market risks and possible losses.	Run awareness drives, promote diversified portfolios, and offer risk advisory tools.
Aadhaar-Based Railway Ticketing: Digitally unskilled or marginalized users may be excluded.	Create alternative verification options, boost digital literacy, and ensure inclusive access.

2. Women's Labour Force Participation in India

Why in the News?

1. The **Female Labour Force Participation Rate (FLFPR)** in India has jumped from about **23% in 2017-18 to 42% in 2023-24**.
2. However, most women still work in **low-paid or unpaid roles**, raising concerns about the **quality of employment** and the need to rethink how work is **defined and measured**, especially for rural women.

Key Highlights

1. **Understanding FLFPR**
   a. FLFPR refers to the **share of women who are employed or actively seeking work**.
   b. Higher FLFPR is usually seen as a sign of **gender equality** and a **dynamic labour market**.
   c. But India presents a paradox: **more women are working, yet in insecure and low-paying jobs**.
2. **Trends in Participation**
   a. FLFPR declined from **31% (2011-12)** to **23% (2017-18)**, reflecting women's withdrawal from the labour force.
   b. It then rose sharply to **42% in 2023-24**, largely due to **rural women's participation**.
   c. Most of this increase is in **self-employment and unpaid work**, not in **secure wage jobs**.
3. **Evidence of Low-Paid/Unpaid Employment**
   a. Workers are classified as **self-employed, regular salaried, and casual workers** (NSSO).
   b. While FLFPR rose, **real earnings declined** for all groups except casual workers.
   c. This shows women are entering the workforce but are stuck in **insecure, informal, or low-paying jobs**, not in stable and well-remunerated employment.
4. **Sectoral Distribution of Women Workers**
   a. Instead of shifting to **industry and services**, women's work has **moved back into agriculture**.
   b. Share in agriculture rose from **71.1% (2018-19)** to **76.9% (2023-24)**.
   c. Share in secondary and tertiary sectors has **fallen**, showing absence of **structural transformation**.

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5. **Nature of Women's Work in Rural India**
   a. The share of women reporting **domestic duties** fell from **57.8% (2017-18)** to **35.7% (2023-24)**.
   b. This was offset by a rise in:
      i. **Helpers in household enterprises** (often unpaid family work).
      ii. **Own-account workers** (self-employed without regular wages).
   c. These roles are **blurred with household responsibilities**, and remain **unpaid or underpaid**.

Implications

1. **Illusion of Progress**: Rising FLFPR hides poor job quality, low earnings, and unpaid labour.
2. **Gendered Vulnerabilities**: Women concentrated in agriculture and unpaid family work, leading to insecurity.
3. **Economic Impact**: Lack of shift to high-productivity sectors limits growth and demographic dividend.
4. **Social Dimensions**: Care burden and domestic roles restrict women's real empowerment.
5. **Policy Concern**: Participation growth is distress-driven; focus needed on decent, secure jobs.

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Challenges and Way Forward

Challenges	Way Forward
FLFPR rise is concentrated in **unpaid or low-income work**.	Recognise and **include unpaid labour** in official statistics.
The majority of women remain trapped in **agriculture and informal work**.	Provide **pathways into industry, services, and formal jobs**.
Decline in **real earnings** across worker categories.	Ensure **minimum wages, skill training, and wage parity** for women.
Blurred line between **domestic work and household enterprises**.	Expand **childcare, eldercare, and social support services**.
Participation is **necessity-driven, not opportunity-driven**.	Generate **quality, secure jobs** via rural industrialisation and MSMEs.

3. Employment as a National Priority

Context

1. **India**, being the **most populous and one of the youngest countries**, is **expected** to contribute around **18% of the total incremental global workforce** over the **next 25 years.**
2. But this **demographic dividend** comes with a **short window** as the **working-age population (15-64 years)** is expected to peak around **2043**. This makes **employment a national priority.**

> **Demographic dividend:** When a country has more working-age people than dependents, it can boost economic growth if they have jobs.

Why Should Employment Be a National Priority?

1. **Economic Growth:** Productive employment boosts GDP, income, and consumption, accelerating and stabilising growth in a consumption-driven economy.
2. **Social Stability:** Quality jobs reduce poverty, inequality, and social unrest, promoting inclusive development across regions and communities.
3. **Demographic Dividend:** Harnesses India's young population effectively, preventing the large youth population from becoming a socio-economic liability.
4. **Human Capital Development:** Employment drives skill acquisition, innovation, and productivity, strengthening the workforce.

What are the government initiatives and measures taken till now?

1. **MGNREGA:** To provide **100 days of wage employment** to rural households in order to **empower marginalised communities** especially **women and SC/St groups.**
2. **Skill India Mission:** aAims to train people in market-relevant skills.
3. **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** Offers short-term training and certification in various sectors, improving employability.
4. **PLI Scheme:** To incentivize domestic manufacturing in sectors like electronics, pharma, and textiles, aiming to create millions of jobs.

5. **Make in India**: Promotes industrial growth and foreign investment, with a focus on labor-intensive sectors to boost employment.
6. **Labour laws reforms:** The consolidation of 29 labor laws into **4 labor codes** (wages, industrial relations, social security, and occupational safety) simplifies compliance and enhances worker protection.
7. **Digital India:** Enhances **digital infrastructure** and **literacy**, enabling access to jobs through online platforms and remote work.
8. Initiatives like **e-Shram portal** aim to register and support informal workers with benefits and insurance.

Persisting Challenges and Way Forward

Challenges	Way Forward
Lack of a **unified national framework** for **employment**; policies are fragmented and short-term.	Create an **Integrated National Employment Policy (INEP)** with long-term **growth strategies** and steady **investment** focus.
Gap between **demand and supply** in the **labour market**; limited **skills**, poor **mobility**, and societal barriers reduce policy impact.	Promote **skill development**, improve **labour mobility**, and address **societal norms** so workforce supply matches **economic and sectoral demand**.
Low employability of **graduates**; **college curricula** not aligned with industry needs.	Update **college curricula** to make graduates **job-ready**, provide **industry-aligned skilling**, and integrate **AI and robotics**. Consolidate schemes under **INEP** with coordination between **States, Ministries, and Industry**.
Mismatch between **availability of people** and **jobs**; political/systemic barriers limit mobility.	Centre and States to coordinate on **migration policies** and **support systems**, implement the **four Labour Codes**, and provide clear **transition guidelines** for businesses to build **"One India" for employment mobility**.
Labour-intensive sectors (**textiles, tourism, agro-processing, real estate, healthcare**) are under-supported; **MSMEs** need better support.	Provide **finance, technology, skilling, and market access** to MSMEs and high-employment sectors to generate **"growth with jobs"**.
Urban job distress, informal workforce issues, underutilised **gig economy**, regional imbalances, and poor job quality.	Pilot **urban employment guarantee programmes**, implement a **national gig economy policy** with **worker protection, skilling, finance, and social security**. Create a **centralized registry** for workers. Promote **affordable housing**, **rural internships**, remote work, and targeted interventions in underdeveloped districts.
Low **female labour force participation** due to societal norms, care responsibilities, and informal work barriers.	Boost participation through **Employment-Linked Incentives (ELI)**, formalise **Anganwadi** and **ASHA roles**, invest in **childcare and eldercare**, and run awareness campaigns to challenge restrictive **societal norms**.
Lack of **high-quality, real-time employment data**, especially for informal and rural sectors.	Set up a **dedicated task force** to improve **data collection**, expand coverage to informal and rural workforce, and reduce **data lag** for better **evidence-based policies**.

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4. Holistic Demographic Mission

Context

India's announcement of a **demographic mission** in **August 2025**, focused on **undocumented immigration**, has stirred debate, highlighting the need for a **broader**, **inclusive approach**. As the world's **most populous nation** with a vast youth base, India stands at a **demographic crossroads** where **diversity** must be seen as a **strategic asset**, **not** just a **population control issue**.

What is a "Demographic Mission"?

1. A **demographic mission** is a **national, long-term strategy** to understand and manage key population trends, including **fertility, mortality, migration, and aging**, in a coordinated and inclusive manner.
2. It goes beyond merely counting people to focus on **building human capabilities** through **education, health, and livelihoods**. (**Demographic planning = human development planning)**

India's Changing Demographic Landscape

India's population is undergoing a rapid transition marked by fertility decline, migration, ageing, and inequality, creating both opportunities and challenges.

1. **Fertility and Age Structure**
   a. **Declining fertility:** Most states show reduced fertility; southern states are below replacement levels.
   b. **Regional contrast:** The south faces ageing and labour shortages, while the north faces youth bulge and unemployment.
   c. **Policy need:** Region-specific demographic and labour strategies.
2. **Migration as a Balancing Force**
   a. **Equaliser of population pressures:** Rural-urban and inter-State migration reshapes labour markets.
   b. **Challenges:** Migrants face exclusion, loss of voting rights, and poor access to welfare.
   c. **Policy need:** Recognise migration as a **developmental driver**; ensure rights and portability of benefits.
3. **Longevity and Social Security**
   a. **Rising life expectancy:** Expanding elderly population demands new social protection models.
   b. **Gaps:** Overreliance on the state; weak pension and care systems.
   c. **Policy need:** Shared responsibility between state, employers, and individuals; promote productive ageing (both young and old can contribute if healthy).
4. **Inequities in Capability Building**
   a. **Uneven access:** Education and skills are concentrated among the affluent; poorer regions lag behind.
   b. **Risk:** Youth potential may turn into demographic burden.
   c. **Policy need:** Invest in **equitable education, health, and skill development** to harness the demographic dividend.

Why Is a Holistic Mission Needed?

India's population policies are **fragmented**; family planning, education, health, and employment are all handled separately. A **holistic demographic mission** would integrate these areas by:

1. Linking **health** with **education** and **skill development**,
2. Connecting **job** creation to **demographic zones**,
3. **Planning cities** to manage **migration** and **housing**,
4. **Strengthening social security** for elderly care.

Such **integration** ensures that **population changes** lead to **inclusive** and **sustainable development**.

Challenges and Way Forward

Challenges	Way Forward / Solutions
1. Fragmented and narrow demographic policies: Current policies focus mainly on fertility control and population growth, ignoring links with education, health, employment, and migration.	**Launch a National Demographic Mission** to integrate population, health, education, employment, and social policies under one coordinated framework.
2. Lack of real-time, reliable demographic data: Census delays and poor regional data make planning reactive instead of forward-looking.	**Invest in real-time demographic data systems** using digital platforms, AI, and predictive modelling for evidence-based policymaking.
3. Regional demographic imbalance: Southern states ageing rapidly, while northern states have youth surplus, creating uneven labour and resource pressures.	**Region-specific demographic planning:** skill training and job creation in the north; ageing care and labour mobility facilitation in the south.

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4. Migration and exclusion issues: Migrants face identity loss, lack of social protection, and disenfranchisement in both home and host states.	**Ensure migrant rights and inclusion:** portable social benefits, voting reforms, and equal access to housing, healthcare, and education.
5. Inequities in education and skill development: Uneven access creates a gap between aspirations and opportunities.	**Invest in equitable human capital:** expand quality education, vocational training, and digital literacy across regions.
6. Rising ageing population and weak social security systems: Longer life expectancy without adequate pensions or healthcare increases dependency burden.	**Strengthen social security and elderly care:** promote contributory pension schemes, employer participation, and community-based elderly services.
7. Gender and reproductive inequities: Women's reproductive rights and access to healthcare often neglected under population control drives.	**Adopt a rights-based approach:** ensure informed choice, reproductive autonomy, and gender-sensitive health services.
8. "Per capita hangover" in policymaking: Policies based only on average figures ignore real demographic variations such as age, dependency, and regional composition.	**Adopt demographic-sensitive planning:** use age-structure and dependency ratios in allocation of funds and development programs.
9. Weak inter-ministerial coordination: Health, education, and labour policies work in silos, leading to inefficiency.	**Institutional reforms:** create a permanent **National Demographic Commission** for coordination among ministries and state governments.
10. Public unawareness of demographic issues: Population debates remain politicised rather than understood as development challenges.	**Promote demographic literacy and public awareness:** include population education in curricula and use media for informed dialogue.

5. Safeguarding India's Carbon Market

Context

1. India's launch of the **Carbon Credit Trading Scheme (CCTS)** aims to promote **low-carbon growth** by reducing **pollution** and **emissions**.
2. However, global experiences like **Kenya's** show that **poorly designed carbon projects** can harm **local communities** by violating **land** and **consent rights**.
3. To avoid such pitfalls, experts urge India to embed **strong safeguards** that ensure its **carbon market** remains **fair**, **inclusive**, and **socially just**.

Background

1. The model of development that began with the **Industrial Revolution** has led to widespread **ecosystem degradation**.
2. While some advocate for **"degrowth"** (reducing economic activity to protect the environment) this approach is **not viable for developing nations** like India, which continue to grapple with **poverty** and **unemployment**.
3. The sustainable alternative lies in **decoupling growth from pollution**, enabling economic expansion without environmental harm.
4. A key tool in this strategy is **carbon credits**, which allow countries to **reduce emissions** while still **pursuing development goals**.

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What are Carbon Credits?

1. A **carbon credit** represents a **certified reduction or removal of one tonne of carbon dioxide (CO_2)** or its equivalent greenhouse gases.
2. These credits are given to projects that reduce pollution, for example:
   a. Installing **renewable energy** (solar, wind, etc.)
   b. Planting trees (afforestation and reforestation)
   c. Sustainable agriculture (eco-friendly farming)
   d. Waste management and **biogas plants**
3. Companies can **buy these credits** to "offset" their emissions while they shift to cleaner technologies.
4. This system helps developing countries earn money for adopting green practices.

India's Carbon Market: Carbon Credit Trading Scheme (CCTS)

1. The **CCTS** was launched under the **Energy Conservation Act, 2001**.
2. It aims to create a **national carbon market** that sets limits on pollution and allows trading of carbon credits.
3. **Main features:**
   a. **Emission intensity** (pollution per unit of production) **benchmarks** for key industries like cement, steel, and power.
   b. Voluntary carbon offset projects are allowed, even small farmers or companies can participate.
   c. A national **registry** and **trading platform** will manage all transactions.
   d. Draft guidelines for **biomass, biogas, and low-emission rice farming** have already been released.
4. This scheme supports India's long-term goals of achieving **Net Zero emissions by 2070** and promoting sustainable growth.

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Global Example: The Kenya Experience

1. The **Northern Kenya Rangelands Carbon Project** (started in **2012**) aimed to remove 50 million tonnes of CO_2 over 30 years.
2. The project introduced **rotational grazing** (managing livestock movement to protect grasslands) and **rangeland restoration** (reviving dry lands).
3. However, **serious problems** emerged:
   a. Local communities said they were not given **Free, Prior, and Informed Consent (FPIC)** — meaning they were not properly consulted.
   b. Their **land rights** were ignored, and the project was managed in a **top-down** (authoritarian) manner.
   c. There were **opaque (unclear) benefit-sharing systems**, where profits did not reach the people.
4. In 2025, a Kenyan court confirmed these issues and suspended the project.
5. This example shows that if carbon projects ignore people's rights, they can become **unfair and exploitative**, even if they are meant to protect the environment.

Why Must India Be Careful?

1. Many Indian carbon projects, such as tree plantations or agricultural projects, are located near **village commons (shared community land)** or **forest areas** used by tribal and rural communities.
2. If these projects are done without proper consent, they could:
   a. **Limit local access** to grazing land, firewood, or forest produce.
   b. **Displace vulnerable people** like small farmers and forest dwellers.
   c. Create a form of "**green colonialism**" (environmental projects that harm local people instead of helping them).
3. Therefore, India needs to design its carbon market with **strong social safeguards** to ensure that climate action does not lead to injustice.

Challenges and Way Forward

Challenges	Way Forward
1. Weak Land Rights: Many tribal and village communities don't have legal ownership of the land they use, making them vulnerable.	**Recognise Land Tenure:** Secure community ownership under the Forest Rights Act and local self-governance laws before approving projects.
2. Lack of FPIC (Free, Prior, and Informed Consent): Projects may start without proper consultation with local people.	**Make FPIC Mandatory:** Ensure every carbon project obtains written, informed consent from the affected communities.
3. Unclear Benefit-Sharing: Companies often earn profits, but communities receive little.	**Transparent Benefit Sharing:** Set clear rules for how profits and benefits are distributed among all participants.
4. Top-Down Planning: Decisions are taken by outsiders with little knowledge of local conditions.	**Community Involvement:** Include Panchayats, NGOs, and local institutions in project design and monitoring.

5. Poor Monitoring: There is limited capacity to verify actual carbon savings and social impacts.	**Independent Audits:** Appoint third-party evaluators and create grievance redress systems for affected communities.
6. Lack of Awareness: Farmers and locals often don't understand carbon markets or contracts.	**Training and Awareness:** Conduct workshops and build capacity among farmers, tribal communities, and officials.
7. Risk of Overregulation: Too many rules can discourage investors and innovators.	**Simple and Balanced Rules:** Design a light but effective regulatory framework that ensures both participation and protection.

6. Potential Growth Rate of India

Why in the News?

India's first quarter GDP growth for **2025–26** was reported at **7.8%**, sparking debate on whether the country's **potential growth rate**, estimated at **6.5%**, needs to be revised. Despite the **strong quarterly performance**, experts argue that the **long-term potential** remains unchanged due to **structural factors.**

What Is Potential Growth Rate?

1. The potential growth rate is the **highest rate at which an economy can grow** over the **long term without** causing **inflation** or **economic instability**.
2. It reflects the **maximum sustainable growth** based on the economy's resources like labor, capital, and productivity.
3. It is different from the **actual growth rate**, which is the real growth achieved in a specific period.
4. **Actual growth** can be **higher** or **lower** than potential growth due to **short-term factors** like demand, government spending, or global conditions.

Key Components of Potential Growth Rate

1. **Gross Fixed Capital Formation Rate (GFCFR)**
   a. This refers to the **percentage of GDP** that is **invested** in **fixed assets** like buildings, machinery, infrastructure, etc.
   b. A **higher GFCFR** means **more investment** in **productive capacity**, which can lead to higher growth.
2. **Incremental Capital-Output Ratio (ICOR):**
   a. ICOR measures **how efficiently capital** is **used** to produce output.
   b. It is calculated by **dividing the investment rate (GFCFR) by the GDP growth rate**.
   c. A **lower ICOR** means capital is being used more efficiently, leading to higher growth.
3. **Potential growth rate** can be estimated using the **formula: GFCFR / ICOR**.
4. **For example,** if GFCFR is **33.6%** and ICOR is **5.2**, the potential growth rate is around 6.5%.

India's Recent Growth Performance

Year	Real GDP Growth	GFCFR (%)
2022–23	7.6%	33.6
2023–24	9.2%	33.5
2024–25	6.5%	33.7
2025–26 (Q1)	7.8% (GDP)	34.6

ICOR for **2025-26** is estimated at **5.2**, indicating **moderate capital efficiency**.

2. **GFCFR** has **remained stable**, meaning investment levels haven't significantly increased.
3. **So, potential growth** remains at **6.5%**.
4. To **raise potential growth:**
   a. **GFCFR** must increase (more investment)
   b. **ICOR** must decrease (better use of capital)

Sectoral Contributions

Growth in different sectors affects the overall potential:

1. **Manufacturing**: Improved performance in **Q1 2025–26 (7.7%)** compared to **previous years (5.8%).**
2. **Services**:
   a. **Trade & Transport:** 8.6% (earlier average 13%).
   b. **Finance & Real Estate:** 9.5% (earlier ~11%).
   c. **Public Administration:** 9.8% (earlier ~13%).
3. **Public Sector: Government investment** has **increased**, especially in infrastructure. But growth in **capital expenditure** is **slowing down** (from around 39% in 2021–22 to around 11% in 2024–25).

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4. **Private Sector: Share** in **total investment** has **declined** from 37% to ~34%. Reviving private investment is crucial for long-term growth.
5. **External Factors and Trade Challenges: Net Exports** turned **negative** in **Q1 2025–26, reducing overall growth** due to **uncertainties** (tariffs and supply chain issues) in **global trade**.
6. **Technology and Future Prospects:** Technologies like **Artificial Intelligence** (AI) and **Generative AI** can **boost productivity** but for that, the **older capital** will need **faster replacement** which will lead to increased costs. This may balance out the effects keeping potential growth near 6.5%.

While some sectors are growing, they are still below their previous highs. Sustained improvement across all sectors is needed to raise potential growth.

Challenges and Way Forward

Challenges	Way Forward
Weak private investment	Boost investor confidence, ensure policy stability, and offer targeted incentives.
Low capital efficiency	Improve project execution, promote technology use, and reduce delays.
Infrastructure and skill gaps	Invest in logistics, human capital, and innovation ecosystems
Sectoral bottlenecks	Support MSMEs, reform agriculture, and strengthen manufacturing.
Fiscal limits on public spending	Focus on quality investment and expand PPP models.
External trade risks	Diversify trade partners and attract stable FDI.
Tech transition pressures	Encourage upskilling and balanced adoption of new technologies.
Employment gaps	Promote labour-intensive sectors and inclusive growth measures.

7. Municipal Bonds and Urban Fiscal Reform

Why in the News?

1. Urban India produces almost **two-thirds of the national GDP**, yet **municipalities control less than 1% of total tax revenue**.
2. This imbalance between **responsibility and resources** has raised concerns about the weak **fiscal architecture** (system of income and spending) of Indian cities.
3. The government and policy think tanks like **NITI Aayog** are now promoting **Municipal Bonds** as a new way to fund city infrastructure.

What Are Municipal Bonds?

1. Municipal Bonds are **debt instruments (loans raised from the public)** issued by **Urban Local Bodies (ULBs)** to fund projects like roads, water supply, sanitation, and housing.
2. **Types:**
   a. **Tax-free bonds**: Investors don't pay income tax on the interest earned.
   b. **Taxable bonds**: Interest is taxable as regular income.
3. **Regulation:** Controlled by **SEBI (Securities and Exchange Board of India)** under the **2015 Municipal Debt Securities Regulations**.
4. **Purpose:** To create a **market-based source of finance**, reducing dependence on state or central grants.

Why Are They Important for the Economy?

Aspect	Importance
Bridging Infrastructure Gap	Helps fund projects like public transport, drainage, and housing without burdening state budgets.
Encourages Fiscal Discipline	ULBs improve accounting, transparency, and planning to attract investors.
Creates New Investment Options	Investors gain a new, low-risk financial instrument, supporting local development.
Boosts Decentralisation	Strengthens the financial independence of city governments.

How Do Municipal Bonds Work?

1. **Issuance:** A financially sound ULB with a good **credit rating (measure of repayment ability)** issues bonds to investors.
2. **Investment:** Citizens, banks, and institutions buy these bonds.
3. **Utilisation:** The ULB uses the money for approved urban infrastructure projects.

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4. **Repayment:** Investors are paid interest from municipal income or project revenues.

Example: Pune and Ahmedabad have raised funds through such bonds for water and transport projects.

Constitutional Basis of Municipal Finance

Provision	Description
74th Constitutional Amendment (1992)	Gave municipalities (ULBs) constitutional status as the third tier of governance.
Article 243W	Empowers municipalities to perform local government functions.
12th Schedule	Lists 18 local functions (e.g., sanitation, water supply, urban planning).
State Finance Commissions (SFCs)	Recommend how state governments should share revenue with municipalities.

Key Committees and Schemes

Committee / Scheme	Main Focus / Recommendation
Rangarajan Committee on Fiscal Decentralisation	Suggested more financial powers and accountability for ULBs.
Kelkar Committee on Municipal Bond Market Development	Advised on improving credit ratings and developing bond markets.
Smart Cities Mission & AMRUT	Encouraged ULBs to use bonds for infrastructure funding.
Swachh Bharat Mission (Urban)	Linked to municipal capacity for waste and sanitation services.

What are the flaws in fiscal architecture of municipalities and what is the way ahead?

Challenges	Reforms and Way Forward
Centralisation of Tax Powers: Cities have very limited power to collect taxes independently.	**Democratise Fiscal Federalism (share powers more equally):** Treat grants and shared taxes as a rightful part of municipal income rather than "aid".
Revenue Loss after GST: Local taxes like octroi and entry tax (around 19% of municipal revenue) were merged into GST, reducing city revenues.	**Leverage GST System:** Allow cities to use a part of their GST compensation or State share as collateral (security) for raising funds through bonds.
Unpredictable Transfers: State and Central grants are often irregular and based on discretion (political choice), making fiscal planning difficult.	**Institutionalise Transfers:** Make intergovernmental transfers formula-based, predictable, and untied (not linked to specific schemes).
Credibility Crisis in Municipal Bonds: Despite policy push from NITI Aayog and reform-linked grants, investor confidence is low.	**Strengthen Credibility Framework:** Recognise grants and shared taxes as legitimate, regular income while assessing city creditworthiness.
Narrow Creditworthiness Assessment: Cities are rated mainly on their *own revenue* (property tax, user charges, fees), while regular transfers from higher governments are ignored.	**Revise Credit Rating System:** Include governance factors like transparency, audit compliance, financial disclosure, and citizen participation, not just revenue figures.
Ideological Bias (Treating Grants as Charity): RBI and credit agencies often call grants "non-recurring income", creating the false idea that cities survive on charity.	**Fiscal Justice Principle:** Acknowledge that intergovernmental grants are constitutional entitlements, not favours. Cities are equal partners in governance, as envisioned by the **74th Amendment**.
Over-Reliance on Property Tax and User Charges: Property tax contributes only 20–25% of total revenue, and user-fee based models burden poor residents.	**Reform Revenue Model:** Strengthen property tax systems but avoid over-dependence on user charges. **Ensure equity:** Basic services like water, sanitation, lighting are public rights, not market goods.

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Weak Institutional Capacity: Many ULBs lack trained staff, proper accounts, and digital systems.	**Capacity Building:** Train municipal personnel, improve financial management, and promote digital tools and participatory budgeting (citizen involvement in planning).
Fragmented Accountability: Cities are responsible for key services (housing, sanitation, climate resilience) but lack resources to deliver effectively.	**Learn from the Scandinavian Model:** Countries like Denmark, Sweden, and Norway allow cities to levy local income taxes and ensure cooperative transfers, creating transparent and self-sufficient city finances.
Ideological Overemphasis on "Self-Reliance" (World Bank/Asian Development Bank Approach): Promoting only "own-revenue" focus undermines redistributive justice.	**Reimagine Fiscal Contract:** Build a shared fiscal ecosystem where municipal finance combines its own revenues with constitutionally mandated transfers.

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8. Does India's 1.9 Fertility Rate Reflect Reality?

Context

India's reported **Total Fertility Rate of 1.9** in the **United Nations Population Fund's (UNFPA) State of World Population 2025 Report**, below the **replacement level** of 2.1, has sparked debate over whether this figure truly reflects the country's fertility reality or conceals methodological biases, as concerns shift from **overpopulation to ageing, labour shortages, and economic slowdown.**

What is Total Fertility Rate (TFR)?

1. The **Total Fertility Rate (TFR)** is the **average number of children a woman is expected to bear during her lifetime**, assuming she experiences the **current age-specific fertility rates (ASFRs)** throughout her reproductive years (ages **15-49**).
2. In simple terms, TFR tells us **how many children a woman would have** if she lived through her **reproductive life** experiencing **today's fertility patterns.**

Why is TFR Important?

The **Total Fertility Rate (TFR)** helps us understand how fast or slow a country's population is growing. It is one of the most important indicators for planning development, economy, and social policies.

Area	Why It Matters
Population Growth	TFR shows whether the population is increasing, stable, or shrinking. A TFR of about **2.1** keeps the population size stable (called **replacement-level fertility**).
Economic Planning	Helps the government plan for jobs, schools, housing, and pensions. Too low TFR means fewer workers in the future; too high TFR means pressure on resources.
Health & Family Welfare	TFR helps design **maternal health**, **family planning**, and **childcare programs**.
Social Development	A low TFR often reflects **better education for women**, **urbanisation**, and **changing lifestyle choices**.
Demographic Dividend	When fertility falls moderately, more people are of working age, giving a chance for **higher economic growth**. But if fertility drops too fast, it can lead to **ageing** and **labour shortages**.

How is TFR Calculated?

1. The reproductive age (15–49 years) is divided into **7 five-year groups:**
   a. 15-19 years, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years, and 45-49 years.
2. For each group, we find the **Age-Specific Fertility Rate (ASFR).**
3. Each ASFR is multiplied by 5 (for 5 years) and divided by 1,000.
4. Adding up the results for all 7 groups gives the **Total Fertility Rate (TFR)**.

This method assumes that **younger women today** will behave like **older women now** when they reach that age, this is called the **synthetic cohort assumption**. This assumption is often unrealistic in a changing society like India.

What is Age-Specific Fertility Rate (ASFR)?

1. The **Age-Specific Fertility Rate (ASFR)** represents the **number of live births per 1,000 women in a specific age group during a given year**.
2. It shows which age groups contribute most to childbearing.
3. **Example:** If the ASFR for the 20-24 age group is 120, it means 120 babies are born per 1,000 women aged 20-24 in that year.
4. **Relevance:** ASFRs reveal shifts in fertility behaviour. For instance, a decline in fertility among younger women and a rise among older ones indicates **delayed childbirth**, not necessarily fewer births overall.

About the State of World Population 2025 Report

1. **Released by:** UNFPA (United Nations Population Fund).
2. **Theme:** Focuses on fertility, ageing, and population transitions across the globe.
3. **Key Finding for India:**
   a. India's **TFR = 1.9**, below the replacement level.
   b. Highlights the **demographic transition** from high fertility to potential population ageing.
   c. Raises questions on **data accuracy** and the **impact of changing socio-economic trends**, particularly in urban India.

Challenges and Way Forward

Challenges	Way Forward
Synthetic Cohort Assumption: TFR assumes that younger women today will behave like older cohorts in future, unrealistic amid rapid social change.	Update fertility models using **longitudinal data** and **cohort studies** reflecting real-life fertility patterns.
Tempo Effect (Timing Bias): Delayed childbirth leads to artificially low TFR, even if total births remain the same.	Introduce **tempo-adjusted TFR measures** to capture postponed births accurately.
Point-in-Time Measurement: TFR represents fertility for one year, missing long-term trends.	Use **multi-year averages** or rolling fertility indicators for stability.
Underreporting of Births (especially below 15 and above 49): Early/late pregnancies (esp. in rural or conservative settings) may be hidden due to social stigma or survey bias.	Train enumerators, anonymise data collection, and improve **survey sensitivity and coverage**.
Urban-Rural Disparity: Urban women delay childbirth; rural women still have earlier fertility, making national averages misleading.	Calculate **region-wise TFR** for targeted policy interventions.
Cultural and Economic Transition: Women's higher education and career goals shift fertility timing.	Encourage **family-friendly work policies**, **childcare infrastructure**, and **flexible careers** to support desired fertility.
Policy Misinterpretation: Panic over low TFR may prompt coercive or pro-natalist measures.	Adopt **balanced, rights-based population policies** focusing on health, education, and empowerment rather than numbers.

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9. 2025 Nobel Prize in Economics

Introduction

The Nobel Prize in Economics 2025 has been awarded to **Joel Mokyr, Philippe Aghion, and Peter Howitt** for having explained **"innovation driven economic growth"** and addressing **why sustained growth occurred only in the last two centuries**, after a long period of economic stagnation.

What is the Nobel Prize in Economics?

1. Official name: **Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel**.
2. Established in **1969** by **Sweden's central bank (Sveriges Riksbank)**; it is not one of the original five Nobel Prizes.
3. The **Royal Swedish Academy of Sciences** awards it annually to outstanding contributors in economics.

Joel Mokyr's Contribution

Understanding Mokyr's Work

1. **Joel Mokyr** studied how the **Industrial Revolution** and the **Enlightenment** changed the way economies grew. He wanted to understand **why continuous economic growth started only after the 18th century**.
2. Before this period, progress was slow because people had only **prescriptive knowledge** - they knew *how* to do things but not *why* they worked.
3. During the Enlightenment, people began to value **science, experiments, and evidence** (**propositional knowledge**), which helped turn knowledge into useful inventions.
4. This new mindset led to major advances like better **steam engines**, **steel production**, and **mechanical tools**.
5. Mokyr found that **societal openness to change** was the real driver of sustained growth - societies that welcomed new ideas and innovations grew faster.
6. However, innovation always creates **winners and losers** - new technologies replace older ones, often facing resistance from **established interest groups**.
7. Mokyr argued that societies willing to **accept this disruption and adapt** were the ones that achieved continuous economic progress.

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Prescriptive v/s Propositional Knowledge

Type of Knowledge	Meaning	Example
Prescriptive Knowledge	Knowing how to do something (but not why), often through experience or tradition.	Blacksmiths knew how to make steel but not why certain techniques worked.
Propositional Knowledge	Knowing why something works, backed by scientific explanation and principles.	Understanding chemical reactions that improve steel quality.

Policy Implications of Mokyr's Research

1. **Invest in Skills**: Governments must develop technical, practical, and commercial skills so that new ideas can be implemented.
   a. Example: Britain succeeded in industrialization due to skilled artisans and engineers.
2. **Encourage Openness to Change**: Societies must tolerate short-term losses (job displacement, resistance from vested interests) to achieve long-term innovation gains.
3. **Knowledge Ecosystem**: Sustained growth requires interaction between inventors, engineers, and entrepreneurs.

Aghion and Howitt's Contribution

1. **Philippe Aghion** and **Peter Howitt** developed a **mathematical model (1992)** to explain how **innovation by firms** drives **long-term economic growth**.
2. They built their model around the idea of **"creative destruction"** (a term by **Joseph Schumpeter, 1942**) - where **new technologies replace old ones**, causing short-term disruption but leading to long-term progress.
3. It is based on **general equilibrium**, meaning all markets (goods, labour, and finance) stay balanced as innovation continues.
4. Their model showed how **competition and innovation at the firm level** together create overall **economic stability and growth**.
5. Firms compete to create **new, patentable technologies**; patents give **temporary monopoly profits** as a reward for innovation, but soon other firms try to **out-innovate** them.
6. This **cycle of innovation and renewal** keeps the economy **dynamically efficient**, ensuring steady growth despite constant change.
7. **Research and Development (R&D)** is funded through **household savings**, linking innovation with the wider economy - more innovation raises profits and savings, which then fund more R&D.
8. The model helps **policymakers** find the **right level of R&D investment** needed to maintain stable and sustainable economic growth.

Innovation by Firms → **Creative Destruction** (new technology replaces old one) → **Higher Productivity & Profits** → **More Household Savings** → **More** Funds for **R&D** → **Further Innovation & Technological Progress** → Sustained Long-Term **Economic Growth.**

Policy Implications of the Aghion-Howitt Model

1. **Optimal R&D Investment:**
   a. Innovation benefits society even after firms stop earning profits, so R&D should sometimes be subsidised.
   b. However, if innovations are only small improvements and firms earn large monopoly profits, excessive R&D may not be necessary.
   c. Policy must balance social and private returns.
2. **Encouraging Competition**: Competition drives innovation but must be managed to avoid excessive monopolies.
3. **Link with Financial Markets**: Efficient capital markets are vital to fund innovation through savings and investment.

Commonalities Between the Models

Both Mokyr and Aghion-Howitt highlight **innovation as the key driver of sustained economic growth**. They show that progress creates winners and losers, so **openness to change** is crucial. Both emphasize the importance of **knowledge, skills, and supportive policies** like R&D investment and competition to maintain continuous growth.

Lessons for India

1. **Skilling and Human Capital**: India must invest in vocational education, engineering, and digital literacy to convert ideas into innovation.
2. **Promote R&D**: India's R&D expenditure is below 1% of GDP - needs to rise to at least 2–3% for sustained growth.
3. **Foster Openness to Change**: Encourage start-ups and technology adoption, even if it disrupts traditional sectors.
4. **Balanced Policy for Creative Destruction**: Protect displaced workers through re-skilling and social safety nets.
5. **Innovation Ecosystem**: Strengthen linkages between universities, industries, and financial markets to promote applied research.

Indian Economists in Nobel Tradition

1. **Amartya Sen (1998)** – Welfare economics, capabilities approach.
2. **Abhijit Banerjee and Esther Duflo (with Michael Kremer, 2019)** – Experimental approach to poverty alleviation.
3. India continues to contribute through research in development economics, behavioral economics, and public policy.

Challenges and Way Forward

Challenges	Way Forward / Solutions
Low R&D Spending: India invests less in research compared to global peers.	**Increase R&D Funding**: Encourage higher investment in research by both public and private sectors.
Resistance to Change: Bureaucratic inertia and fear of job losses slow innovation.	**Promote Social Acceptance of Change**: Build awareness about the long-term benefits of new technologies.
Skill Gap: Education and industrial needs are often mismatched.	**Strengthen Skilling Ecosystem**: Focus on applied science, technical skills, and innovation-oriented education.
Intellectual Property (IP) Issues: Weak IP enforcement and limited patent culture.	**Ease of Doing Innovation**: Simplify patenting, licensing, and regulatory procedures to encourage new ideas.

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10. District Domestic Product (DDP)

Context

The Ministry of Statistics and Programme Implementation (MoSPI) stated that, **from January 2025 onwards**, the existing **ASUSE** and **PLFS** datasets **have developed the capability to generate district-level economic estimates (DDP)** in collaboration with states, enabling more accurate and ground-level data for policy planning.

About District Domestic Product (DDP)

1. **DDP (District Domestic Product):** Measures the **total value of goods and services** produced within a district (like GDP at the district level).

2. **Importance:** Helps identify **regional disparities** and supports **targeted planning** by showing which districts are growing faster or lagging behind.
3. **Relation:** DDP → adds up to **GSDP (State GDP)** → which adds up to **National GDP**.
4. Currently, India only has GDP and GSDP data - **DDP will add a third, more granular layer** for local policy decisions.

About ASUSE and PLFS

Survey	Covers / Purpose	Role in DDP Estimation
ASUSE: Annual Survey of Unincorporated Sector Enterprises	Captures data from **households, micro, small and informal enterprises** in manufacturing & services.	Measures district-level **enterprise output and productivity.**
PLFS: Periodic Labour Force Survey	Collects data on **employment, unemployment, and labour participation** (monthly & annual).	Measures **labour force structure and income trends** across districts.

Together, these surveys **combine enterprise** and **labour data**, forming a base for accurate DDP estimates.

Why the Move to Estimate DDP?

1. To **shift from top-down** (national/state) estimates to **bottom-up** (district- based) calculations.
2. Supports **data-driven local policymaking** by states and districts.
3. Helps in **evaluating schemes** like the Aspirational District Programme and local development planning.
4. Enables identification of **micro-level growth trends** and **employment patterns.**

What is Changing?

1. MoSPI and states to jointly compute DDP using **ASUSE (enterprise data)** and **PLFS (labour data)**.
2. **Frequency increased:** PLFS now monthly; ASUSE being released quarterly.
3. **Pilot projects** underway before nationwide rollout.
4. Upcoming surveys like **ASSSE (Annual Survey of Service Sector Enterprises)** and **Household Income Survey** to further enhance data coverage.

Expected Benefits

1. Provides **granular data** for district-level economic planning.
2. Improves **targeted policy design** and **public investment allocation.**
3. Helps **monitor regional inequality** and **sectoral growth** at micro levels.
4. Strengthens **evidence-based governance** and **fiscal devolution.**

Challenges and Way Forward

Challenges	Way Forward
Data quality and inconsistency across states.	Adopt **uniform data collection templates** and standard estimation methods.
Limited statistical capacity at district level.	Strengthen **District Statistical Offices** and provide staff training.
Delay in surveys and coordination issues.	Use **digital tools** and promote **real-time data collection**.
Integration of multiple datasets (PLFS, ASUSE, GST, etc.)	Develop a **centralized data platform** for seamless integration.

11. New CPI to Measure Rural Housing Inflation

Context

The **Ministry of Statistics and Programme Implementation (MoSPI)** has proposed a new **Consumer Price Index (CPI)** series that will, for the first time, **measure rural housing inflation** and **exclude employer-provided dwellings** to make the housing index more accurate and representative.

About CPI

1. The **Consumer Price Index (CPI)** shows the change in prices of goods and services that households usually buy — it measures **inflation** (rise in general price levels).

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2. It is prepared by the **National Statistical Office (NSO)** under MoSPI.
3. CPI is important because:
   a. It is used by the **RBI** to set interest rates (under its 4% ± 2% inflation target).
   b. It helps measure **cost of living** and is used for **wage and pension adjustments**.
4. **Current base year:** 2012 (base year = reference year for comparison).
5. CPI has separate indices for **rural, urban, and combined** areas.
6. In the current CPI, "Housing" has a weight of **21.67% in urban areas** and **10.07% at the national level**.

What is Changing? (Key Features of the New CPI Approach)

Parameter	Existing	Proposed (New CPI)
Coverage	Only urban areas	Both urban & rural areas
Sample size	12 dwellings per market (urban only)	Urban – 12 and Rural - 6 dwellings/market
Employer accommodation	Included	Excluded
Methodology	3 different methods for different periods	One uniform method –Short/ Chain index
Source for dwelling weights	NSS 69th Round (Housing Condition Survey)	Census 2011
Data frequency	Collected every 6 months (urban only)	Collected monthly (urban & rural)

Short Index / Chain Index: These methods update price changes regularly by linking new data to the previous month's data, making inflation estimates more current and reliable.

Need for Change

1. Earlier, CPI covered only **urban housing**, leaving out the rising **rural housing market**.
2. **Employer-provided dwellings** (like government housing) were distorting data since rents were based on **House Rent Allowance (HRA)**, not actual market rent.
3. The new **Household Consumption Expenditure Survey (HCES 2023–24)** has now collected **rural rent data**, making it possible to include rural areas.
4. The change aims to make the CPI **more realistic, data-driven, and closer to international best practices** (as advised by IMF experts).

Significance

1. **More Accurate Data:** Reflects true rental trends in both cities and villages.
2. **Better Policy Decisions:** Helps **RBI and government** design policies using more reliable inflation data.
3. **Improved Welfare Planning:** Assists in assessing **cost of living** for rural households and improving schemes like **PMAY (housing)** or **MGNREGS (wages)**.
4. **Global Standards:** Brings India's CPI method in line with **UN and IMF recommendations**.

Challenges and Way Forward

Challenges	Way Forward
Collecting accurate rent data in rural areas where few houses are rented	Use regular household surveys and tech tools (mobile data apps, GIS mapping)
Excluding employer housing may understate true inflation for some groups	Develop a separate **sub-index** for such dwellings
New and old CPI data may not be directly comparable	Run **parallel series** for a few months to ensure smooth transition
Dependence on older data sources like Census 2011	Update using newer surveys or Census when available
Limited field staff and coordination at NSO level	Provide **training and digital tools** to field teams

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12. Uneven Industrial Growth

Why in the News?

1. The latest **Index of Industrial Production (IIP)** data for **September 2025** provides a crucial snapshot of India's industrial health during the first half **(April-September)** of **FY 2025-26.**

2. While there are some signs of recovery, the overall industrial growth has been **uneven and sluggish**, raising concerns about **employment generation and consumer demand**.

What Does the Data Show?

Period	Industrial Growth (IIP)	Key Trend
April-September 2025 (H1)	**3%**	Slowest half-yearly growth in 5 years
Q1 (Apr-Jun 2025)	**2%**	Weak momentum
Q2 (Jul-Sep 2025)	**4.1%**	Signs of recovery
Manufacturing Growth (Q2)	**4.9%**	Strongest since Dec 2023
Mining Sector	**Contraction**	Poor performance despite post-monsoon recovery expectation

Key Observations

1. **Growth Not Broad-Based**
   a. Of the **23 manufacturing sub-sectors**, more than half **contracted** in **Q2 2025-26**.
   b. **Labour-intensive sectors** (like textiles, leather, rubber, and plastics) shrank.
   c. Growth is driven mainly by **capital-intensive sectors** like metals, fabricated products, and mineral products.
2. **Weak Consumer Demand**
   a. The **consumer non-durables** category has **contracted for six consecutive quarters**, showing sustained demand weakness.
   b. Indicates stress in **household spending**, especially in rural areas.
3. **Mining Sector Weakness**
   a. Performance hit by monsoon disruptions and structural inefficiencies.
   b. Has implications for **energy and mineral security**, vital for industries like steel and power.

Implications of Uneven Growth

1. **Jobless Growth:** Labour-intensive sectors shrinking means fewer employment opportunities.
2. **Demand Deficiency:** Lower incomes → weak consumption → reduced industrial output → vicious cycle of slowdown.
3. **Energy Dependence:** Mining sector weakness threatens strategic self-reliance.
4. **Regional Imbalance:** States dependent on small industries (e.g., textiles, leather) face greater distress.

Challenges and Way Forward

Challenges	Way Forward
1. Concentrated growth: Limited to capital-intensive industries.	Diversify growth through incentives for **labour-intensive manufacturing** and MSMEs.
2. Weak consumer demand: Declining sales in consumer goods and essentials.	Boost **rural incomes** via MGNREGS support, PM-KISAN, and urban job programs.
3. Contraction in the mining sector: Affects energy and raw material supply.	Strengthen **domestic mineral exploration**, streamline clearances, promote sustainable mining.
4. Low private investment: Companies hesitant due to demand uncertainty.	Encourage **private capex** via tax incentives, ease of doing business, and credit support.
5. Skill and employment mismatch: Industrial recovery not translating into jobs.	Focus on **skill development**, local manufacturing clusters, and value-chain integration.

Policy Significance

1. The data highlights the **dual challenge** of reviving industrial growth and **stimulating demand**.
2. Fiscal and monetary policies must focus not just on production, but on **income generation and job creation**.
3. Structural reforms, such as **logistics efficiency, MSME credit flow, and ease of labour compliance**, are vital for sustained industrial growth.

Conclusion

India's industrial recovery remains **uneven and fragile**. While headline figures show moderate improvement, the underlying weakness in **labour-intensive sectors and consumer demand** signals deeper structural concerns. A durable recovery demands **inclusive growth**, one that creates **jobs, raises incomes, and expands purchasing power**, to build a sustainable cycle of production and demand.

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SCIENCE & TECHNOLOGY

1. Antibiotic Resistance

Why in the News?

1. **Antimicrobial resistance (AMR)** is a **growing public health threat** in India, flagged by WHO as **one of the top 10 global health risks**, with projections of **10 million annual deaths worldwide by 2050.**
2. India's position as the **2nd highest antibiotic consumer**, with a **47% rise** between **2010 and 2020**, combined with **over-the-counter access and poor sanitation** which significantly **accelerates resistance**.

What is Antibiotic or Antimicrobial Resistance (ABR or AMR)?

Antibiotic resistance (ABR) occurs when **bacteria evolve mechanisms** to **resist** the **effects of drugs** that once killed them or inhibited their growth.

What are the causes of ABR?

1. **Human Misuse**: Bacteria become resistant when **antibiotics** are **misused** (like Self-medication, incomplete antibiotic courses, and unnecessary prescription).
2. **Healthcare System Gaps**: Inadequate diagnostics, poor infection control, and overcrowded hospitals facilitate the spread of resistant infections.
3. **Environmental Factors**: Pharmaceutical waste, untreated sewage, and antibiotic residues in water bodies contribute to environmental resistance.
4. **Agricultural Practices**: The use of antibiotics in agriculture, particularly as growth promoters, accelerates resistance development.
5. **Global Movement**: International travel and trade facilitate the spread of resistant strains across borders.

Impact and Consequences

1. **Health**: Increased mortality and morbidity due to treatment failures and prolonged illnesses.
2. **Economic**: Higher healthcare costs, loss of productivity, and economic strain on families, especially in low-income settings.
3. **Social**: Erosion of trust in medical systems and a rise in alternative medicine practices.
4. **Global**: Threatens the effectiveness of surgeries, cancer treatments, and maternal care, undermining medical advancements.
5. **Examples:** Some bacteria are **becoming hard to treat**, including:
   a. **Tuberculosis (TB): Multi-Drug Resistant** (MDR - resistant to some key drugs) and **Extensively Drug Resistant** (XDR - resistant to almost all drugs) strains.
   b. **Gonorrhea, Pneumonia, and Urinary Tract Infections:** Increasing resistance makes standard treatments less effective.
   c. **Superbugs:** Certain bacteria resist multiple antibiotics. The **NDM-1 gene**, discovered in India, makes some infections nearly untreatable with last-resort drugs like carbapenems.

Government Initiatives and Policy Framework

1. **National Action Plan on AMR (2017–2021)**: Launched by the Ministry of Health and Family Welfare (MoHFW), this plan focuses on **surveillance**, **awareness**, and **regulation** to combat AMR.
2. **Red Line Campaign**: Introduced to **mark antibiotics** that are prescription- only, aiming to curb over-the-counter sales.
3. **AMR Surveillance Network**: ICMR leads a **national network monitoring resistance** patterns across hospitals.
4. **FSSAI Regulations**: The Food Safety and Standards Authority of India (FSSAI) has s**et norms to limit antibiotic use** in food-producing animals.
5. **One Health Approach**: Integrating **human**, **animal**, and **environmental health** to address AMR comprehensively.

Global Efforts and Best Practices

1. **WHO's Global Action Plan on AMR**: Provides a strategic framework for countries to combat AMR through surveillance, stewardship, and innovation.

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2. **Tripartite Collaboration**: **WHO, FAO, and World Organisation for Animal Health (OIE)** work together to coordinate global efforts against AMR.
3. **Antibiotic Stewardship Programs**: Implemented in hospitals worldwide to optimize antibiotic use and reduce resistance.
4. **EU Regulations**: The European Union has banned the use of antibiotics as growth promoters in livestock.
5. **Global Surveillance Systems**: Systems like **GLASS monitor resistance patterns** and inform policy decisions.

Ethical and governance considerations in tackling ABR

1. **Access vs. Regulation**: Balancing antibiotic availability with strict controls is vital. Over-regulation can hurt vulnerable groups; under-regulation fuels resistance.
2. **Equity in Treatment**: Marginalized communities face limited access to effective care. Ethical governance must ensure no one is left behind.
3. **Pharmaceutical Responsibility**: Companies must avoid overpromotion, ensure quality, support stewardship (responsible management and use of antibiotics to preserve their effectiveness.), and invest in new treatments.
4. **Civil Society's Role**: NGOs, media, and communities are key to spreading awareness, promoting hygiene, and supporting responsible antibiotic use.

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Challenges and Way Forward

Challenges	Way Forward
Weak enforcement & regulatory gaps: Prescription laws are not properly followed, and over-the-counter antibiotic sales still happen, leading to misuse.	**Stronger rules & stewardship**: Enforce prescription-only antibiotics, ban over-the-counter sales, and ensure hospitals adopt **antibiotic stewardship programs**.
Low awareness: People and healthcare workers do not fully understand **antibiotic resistance (AMR)**.	**Awareness campaigns**: Educate the public and healthcare workers on the proper use of antibiotics.
Poor infrastructure: Not enough labs to test for **resistant bacteria**.	**Improve diagnostics**: Build more labs and make testing faster and easier.
Poor coordination: Health, agriculture, and environment departments do not work together.	**One Health approach**: Link human, animal, and environmental health policies.
Lack of research funding: Not enough money for **new antibiotics** or alternative treatments.	**Promote research**: Invest in developing new antibiotics and treatments.
Antibiotic use in livestock and environmental impact: Antibiotics in animals and pharmaceutical waste contribute to resistance.	**Regulate use & environment**: Control antibiotic use in farms and manage pharmaceutical waste to reduce environmental exposure and resistance spread.

2. Coldrif Cough Syrup Deaths

Why in the News?

1. At least **11 child deaths in Madhya Pradesh** and **3 in Rajasthan** have been linked to the consumption of *Coldrif* cough syrup contaminated with **Diethylene Glycol (DEG)**; a toxic industrial chemical.
2. The incident has renewed focus on **wide drug safety oversight** and **regulatory lapses in the pharmaceutical supply chain**, especially for paediatric medicines.

Key Highlights

1. **Nature of the Incident**
   a. The **Drug Testing Laboratory, Chennai**, found 48.6% Diethylene Glycol in Coldrif samples; a highly poisonous substance injurious to health.
   b. DEG is a **cheap substitute for pharmaceutical-grade solvents** like propylene glycol but is **toxic to kidneys and the nervous system**.
   c. Several batches of Coldrif were allegedly manufactured without adequate quality checks or testing.
   d. The contamination led to **acute kidney failure and death** in multiple children.

2. **State and Central Government Response**
   a. States including Madhya Pradesh, Rajasthan, and others immediately banned Coldrif and related formulations.
   b. The **Rajasthan government** banned all syrups containing **dextromethorphan** after three child deaths were linked to such products.
   c. The **Central Drugs Standard Control Organisation (CDSCO)** has begun probe and coordination with state drug controllers to track the source of contamination.
   d. A wider **recall of suspect cough syrups** is underway; local chemists were instructed to remove unlabelled and untested syrups.
3. **Understanding Cough Syrups and Their Safe Use**
   a. Two broad types exist:
      i. **Cough Suppressants** (e.g., Dextromethorphan Hydrobromide) act on the brain to block the cough reflex; used for *dry coughs*.
      ii. **Decongestants** (e.g., Phenylephrine, Pheniramine) reduce nasal congestion and discharge; used for *wet coughs*.
   b. Children under 4 years should *not* be given cough syrups except under a paediatrician's strict supervision.
   c. Parents often misuse **over-the-counter syrups** without prescription — increasing the risk of overdosing and exposure to substandard formulations.
4. **Medical Risks and Overdose Effects**
   a. Overdose symptoms: drowsiness, sedation, increased heart rate, vomiting, and nausea.
   b. In adolescents, high doses can cause **addiction or "drug highs"** due to the psychoactive effect of dextromethorphan.
   c. Only **paediatricians** can prescribe correct dosages — typically **0.5 to 1 mg/kg** of body weight, up to three doses daily.
   d. Parents must use the **dosing spoon** provided with the bottle; using household spoons can cause accidental overdosing.
5. **Preventing Contamination and Safe Alternatives**
   a. Pharmaceutical-grade solvents (like propylene glycol) must be used — not cheaper industrial substitutes such as DEG.
   b. Parents should buy **labeled syrups from reputed companies only**, not loose or unlabeled formulations.
   c. Homemade and safe remedies for cough relief:
      i. Steam inhalation and humidified air.
      ii. Saline nasal drops for congestion (drug-free).
      iii. Warm fluids and rest for minor viral infections.
   d. For infants (<2 years), no pharmaceutical cough syrup is recommended, only symptomatic relief through simple remedies.

Key Terms

1. **Central Drugs Standard Control Organisation (CDSCO)**
   a. India's **national drug regulatory authority** under the Ministry of Health and Family Welfare.
   b. Headed by the **Drugs Controller General of India (DCGI)**.
   c. Responsible for new drug approval, import licensing, and pharmacovigilance.
   d. Coordinates with state drug controllers to maintain uniform standards.
2. **Over-the-Counter (OTC) Drugs**
   a. Medicines sold directly to consumers without a prescription.
   b. In India, these include common cough/cold syrups, painkillers, and antacids.
   c. Unregulated OTC sales often lead to misuse, resistance, or poisoning.
   d. Requires strict monitoring and consumer education to prevent misuse in children.
3. **Schedule H and H1 Drugs (Drugs and Cosmetics Rules, 1945)**
   a. Lists of drugs that must be sold only with a **registered medical practitioner's prescription**.
   b. Schedule H1 introduced in 2014 to control antibiotics and psychotropic drugs.
   c. Violations attract fines and imprisonment.
   d. Inclusion of paediatric syrups under these schedules could prevent misuse.

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Challenges and Way Forward

Challenge	Way Forward
1. Weak drug quality control and fragmented enforcement	Strengthen CDSCO's coordination with state drug controllers; implement real-time digital batch tracking for all pediatric formulations.
2. Unregulated over-the-counter (OTC) sale of medicines	Enforce Schedule H1 norms strictly; make pediatric syrups "prescription-only" with penalties for illegal OTC sales.
3. Use of toxic industrial solvents (like DEG)	Mandate third-party testing of excipients (solvents) and random audits of small-scale manufacturers.
4. Lack of consumer awareness and medical supervision	Conduct mass public-health campaigns on safe paediatric medication and the risks of self-medication.
5. Inadequate pharmacovigilance and recall mechanisms	Develop a nationwide Adverse Drug Reaction (ADR) database, accessible to doctors, pharmacies, and citizens; institutionalise a swift national recall protocol.

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3. Nobel Prize 2025 in Chemistry

Why in the News?

1. The **2025 Nobel Prize in Chemistry** was awarded to three scientists: **Susumu Kitagawa (Japan)**, **Richard Robson (Australia)**, and **Omar Yaghi (USA)**.
2. They discovered and developed a new kind of material called **Metal-Organic Frameworks (MOFs)**.
3. These materials can be used to **store clean fuels, capture carbon dioxide (CO_2)**, and even **harvest water from dry air**.

What are MOFs (Metal-Organic Frameworks)?

1. Imagine a **building made of metal pillars and organic beams** but without walls; this is how a MOF looks at the atomic level.
2. In most materials, atoms are packed tightly together but in MOFs, **metal atoms** are linked with **organic molecules (carbon-based compounds)** in such a way that **empty spaces (pores)** are created.
3. These empty spaces can **trap or store other substances** like gases or moisture.
4. So, MOFs act like **microscopic sponges** that can be designed for specific uses.

How Did the Discovery Happen?

1. **Richard Robson**, a chemistry professor in Australia, came up with the idea in the **1970s** while making classroom molecular models using balls and sticks.
2. He thought, what if instead of connecting atoms directly, he connected them using molecules?
3. The first MOFs he made were not stable, but they proved the idea could work.
4. Later, **Susumu Kitagawa** and **Omar Yaghi** improved the process and created **stable and useful MOFs**.
5. Over time, scientists designed **tens of thousands of MOFs**, each serving a different purpose.

What makes MOFs different from naturally porous materials?

1. MOFs are different from naturally porous materials (like sponge or bread) in that their **pores are uniform and can be precisely designed**, unlike sponge or bread whose pores are not uniform.
2. This means scientists can **decide the size, shape, and chemistry** of the pores depending on what they want to capture. For example, CO_2, water, or hydrogen.

Why Are MOFs Important?

1. **Carbon Capture:** MOFs can selectively absorb **carbon dioxide (CO_2)** from the air, helping to fight climate change.
2. **Water Harvesting:** Some MOFs can **pull water molecules from dry desert air**, providing a new source of drinking water.
3. **Gas Storage:** MOFs can store **hydrogen or toxic gases** safely, helping in clean energy and industrial safety.
4. **Medicine and Health:** Scientists are exploring MOFs for **drug delivery systems**, where medicine can be released slowly inside the body.
5. **Pollution Control:** MOFs can filter harmful gases and purify air, similar to an advanced version of air filters.

Key Terms

1. **Reticular Chemistry**
   a. This is the **science of connecting molecules like Lego blocks** to make larger, structured materials.
   b. It helps chemists design materials with **predictable shapes and spaces**.
   c. Pioneered by Nobel laureate **Omar Yaghi**.
   d. It's the foundation behind **MOFs and other similar materials**.
2. **Water Harvesting from Air**
   a. Some MOFs can **pull water vapour** from dry air and release it as liquid water.
   b. This can be very helpful in **deserts or drought areas**.
3. **Hydrogen Storage**
   a. Hydrogen is a clean fuel, but it's hard to store safely.
   b. MOFs can **hold hydrogen molecules** tightly and release them when needed. Therefore, they are useful for **green energy** and **fuel-cell vehicles**.

Challenges and Way Forward

Challenges	Way Forward
1. MOFs are **expensive** to make.	Develop **cheaper production methods** using common metals and local materials.
2. Many MOFs are **not stable** in moisture or heat.	**Improve design for durability** under real-world conditions.
3. **Lack of research funding** in developing countries like India.	**Government and private sectors** should invest in materials science research.
4. **Difficulty in recycling** or disposing of old MOFs.	Create **environmentally safe, recyclable** versions.
5. **Limited awareness** about MOFs.	Include **MOF research in higher education** and innovation missions.

4. Nobel Prize 2025 in Physics

Why in the News?

The **2025 Nobel Prize in Physics** was awarded to **John Clarke, Michel Devoret, and John Martinis**. They proved in the 1980s that the **strange laws of quantum mechanics** do not just apply to tiny particles like electrons or atoms but can also apply to **entire electrical circuits visible to the eye**. Their experiments opened the way for modern **quantum computers** and many other technologies.

How 2 parts of Physics (Classical & Quantum Physics) are very different from each other?

Physics can be classified in many sub groups depending on different parameters, but on the basis of **size of objects**, Physics can be classified into 2 sub groups: 1. Classical Physics 2. Quantum Physics

1. Classical Physics deals with big objects at macro level but quantum physics deals with very small (atomic & sub atomic) objects at micro level. The word **"quantum"** means the **smallest possible unit of energy** or matter that cannot be divided further.
2. Classical Physics has **normal laws of physics** like Newton's law but Quantum Physics has **different laws** like the laws of probability, wave–particle duality, and quantization of energy.

Which 5 properties make Quantum Physics different and unique as compared to Classical Physics?

1. **Superposition:** In classical physics, one particle will show **only one state at a time** like either on or off but in quantum physics, one particle can show **multiple states at the same time** like one switch can be off & on simultaneously. One state is superpositioned on another.
2. **Entanglement:** It means a **strong connection** between particles. In **classical physics**, particles are connected/ entangled because of **past interactions**, like the speed of two balls depend on a collision they had. Each ball still behaves **independently after collision**. In **quantum physics**, particles get **entangled so deeply** that **measuring one instantly affects the other**, no matter how far apart they are. Their states can't be described separately—they share **one combined state**. **Quantum entanglement** also has **practical uses** in quantum computing, teleportation, and cryptography, where it serves as a vital informational resource.

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3. **Wave - Particle Duality:** In classical physics, a system **can not** simultaneously **show both wave-like and particle-like properties** but in quantum physics every quantum particle **behaves both like a wave and a particle**, depending on how you observe it.
4. **Quantum Tunneling:** According to classical physics, big objects can't pass through barrier but in quantum physics, small particles pass through barrier (insulator/ josephson junction). This process is called quantum tunneling.
5. **Energy Quantization:** In classical physics, energy levels are continuous (like a ramp) but in **quantum mechanics**, energy levels are **discrete (like steps on a ladder)**. This is called **Quantized Energy**.

How are normal conductors and super conductors different in terms of resistance, heat decay and current flow with voltage?

Ans. In a normal conductor, electrons move through a lattice and frequently collide with atoms, causing heat or energy loss. In contrast, in a superconductor, below its critical temperature, electrons don't collide rather pair up. This electron pair plays a very important role and is called a Cooper pair. It moves synchronously without collisions. This perfect coordination of electrons eliminates resistance, meaning current flows endlessly without voltage input or heat loss whereas in normal conductors, voltage is always needed to push electrons because resistance can't be zero in conductors.

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How did the popular experiment of josephson junction by John Clarke, Michel Devoret, and John Martinis in the 1980s based on quantum physics surprised classical physics?

Normally, **quantum behaviour** is shown at **micro level** only (not at macro) but In the 1980s, Michel H. Devoret, John Clarke, and John M. Martinis at the University of California, Berkeley, conducted a pioneering experiment that demonstrated quantum behavior on a macroscopic scale.

They built a superconducting electrical circuit by using two superconductors separated by a thin insulating layer. This insulating layer was called **josephson junction**. When the circuit was cooled and carefully controlled, it showed that billions of electrons could act as a single quantum entity because of its **wave-like properties**. The system transitioned between energy levels in discrete jumps (quantization) rather than continuously, and sometimes "escaped" its stable, zero-voltage state through quantum tunneling—a phenomenon previously thought to occur only at atomic scales. It showed **quantum behavior at a macroscopic scale** which means that large electrical systems could act like single quantum particles. Tunnelling rates depend on barrier height, width, and the effective mass of the tunnelling coordinate.

According to **classical physics**, current flowing in this system should get **stuck** because of an insulating barrier unless it has **enough energy to cross the barrier**.

But this experiment, conducted between 1984 and 1985, provided the first direct evidence of macroscopic quantum tunneling and energy quantization in a man-made system. It proved that entire electrical circuits could exhibit quantum mechanical effects, fundamentally connecting the microscopic and macroscopic worlds.Their findings became the foundation for superconducting qubits used in modern quantum computers by institutions such as Google and IBM.

What is the Pauli Exclusion Principle?

It means 2 electrons can't be in the same state. Fermions follow this rule but in Cooper pairs, electrons behave like Bosons (many can occupy the same state).

Ensuring the Results Were Genuine

1. To ensure these effects were **not due to experimental error or outside noise**, the scientists carefully shielded the circuits from **stray microwave radiation**.
2. The scientists proved that in a superconductor, **trillions of electrons move together** in such perfect coordination that they behave like a **single object**, and this **collective behaviour** can be described by just one quantum rule i.e., superconducting phase difference**.**
3. **Superconducting phase difference:** The flow of current across the Josephson junction depends on the quantum phase difference between the two superconductors.

Technological Applications of the Work on Josephson Junctions

1. **Foundation for Quantum Computers (Circuit QED):**
   a. The circuits behave like artificial atoms with quantised energy levels.
   b. Microwaves can make the system "jump" between these energy levels.
   c. When linked to a *resonator* (like an echo chamber for microwaves), scientists can measure the system's state *without disturbing it*.
   d. This setup is called **Circuit Quantum Electrodynamics (Circuit QED)**. It is the *basis of today's superconducting quantum computers*.
2. **Quantum Amplifiers:**
   a. These circuits can **amplify extremely weak signals** without adding extra noise.
   b. This is very useful in **medical diagnostics**, **radio astronomy**, and **dark matter detection experiments**.
3. **Ultra-Precise Measurements:**
   a. Josephson-based circuits can **measure electric current and voltage with very high precision**.
   b. They are used in **metrology laboratories** to define electrical standards.
4. **Quantum Communication Networks:**
   a. The circuits can act as **microwave-to-optical converters**, linking quantum processors to **fibre-optic networks**.
   b. This helps in developing **quantum internet** and long-distance secure communication.
5. **Quantum Simulators:**
   a. These circuits can model **complex physical and chemical systems** at the atomic level.
   b. Scientists use them to simulate **materials, molecules, and chemical reactions**, helping design new materials or drugs.
6. Some other modern technologies are:
   a. Superconducting qubits – the heart of today's leading **quantum computers**.
   b. Quantum magnetometers (SQUIDs) – devices that measure extremely weak magnetic fields.
   c. Quantum voltage standards – used for precise electrical measurements.
   d. Single-photon detectors – used in **astronomy** and **biomedical imaging**.

What is the actual challenge in it & solution to it?

1. The question today is not whether macroscopic quantum behaviour exists, but **how to preserve it for practical use**.
2. Quantum states are very **fragile** and can collapse if disturbed by the environment. This problem is called **Quantum Decoherence**.
3. Current research focuses on:
   a. Developing **better materials** with fewer energy losses.
   b. Improving **cryogenic (ultra-low temperature) control systems**.
   c. Designing **hybrid architectures** that combine superconducting circuits with **light (photonic systems), mechanical devices, or spin-based systems**.

What was the unexpected revolution through their experiment?

1. When Clarke, Devoret, and Martinis began their experiments, they were simply curious about whether **quantum mechanics applied to large systems**.
2. No one at that time imagined their work would help build **quantum computers** decades later.
3. Their discovery shows how **curiosity-driven basic science** can lead to **unexpected technological revolutions** and bring **prestige** to the countries that support such research.

Superconducting Qubit

1. A **qubit** (quantum bit) is the smallest unit of information in a **quantum computer**, similar to a "bit" in a normal computer.
2. But unlike a bit (which is either 0 or 1), a **qubit can be both 0 and 1 at the same time**; a property called **superposition**.
3. A **superconducting qubit** is made from **tiny electrical circuits** built using **superconducting materials** (materials that conduct electricity without resistance at very low temperatures).
4. These circuits behave like **artificial atoms**. They have quantised energy levels, meaning they can "jump" between states just like electrons in an atom.

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5. Scientists can control these jumps using **microwaves**, allowing them to perform quantum operations.
6. Used in quantum computers developed by companies like **Google and IBM**.

What are the Implications of Quantum Tunneling?

1. **Scientific**: Proved that **quantum mechanics applies to macroscopic systems**, not just atoms.
2. **Technological**: Enabled **quantum computing, ultrasensitive detectors, and precision measurement tools**.
3. **Research Direction**: Shifted focus from proving quantum effects to **preserving them for applications**.
4. **Policy**: Highlights the importance of investing in **basic research**, which can later power revolutions in technology.
5. **India's Context**: Strengthens the case for India's **National Quantum Mission** to develop indigenous quantum technologies.

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Conclusion

The Nobel Prize 2025 celebrates a discovery that bridged the gap between **tiny quantum particles** and **visible macroscopic systems**. By showing that entire circuits could follow quantum laws, the laureates opened the door to **quantum computing and advanced technologies**. Their work is a reminder that **fundamental curiosity-driven science can lead to revolutionary applications**.

5. Nobel Prize 2025 in Physiology or Medicine

Context

1. The 2025 Nobel Prize in Physiology or Medicine was awarded to **Mary Brunkow, Fred Ramsdell (USA) and Shimon Sakaguchi (Japan)**.
2. They discovered **how the immune system is kept in check** so it does not attack the body.
3. Their work helps develop treatments for **autoimmune diseases, cancer, and organ transplants**.

What Did They Discover?

1. **Regulatory T Cells (Tregs):**
   a. A type of immune cell that acts as a **"brake"** on the immune system.
   b. Stops the immune system from attacking the body's own organs.
2. **Foxp3 Gene:**
   a. A gene that is essential for the **formation** and **function** of **Tregs**.
   b. Mutations in this gene cause **serious autoimmune diseases** like IPEX in humans.
3. **Peripheral Immune Tolerance:**
   a. Mechanism by which Tregs **keep mature T cells from attacking healthy tissues**.
   b. Complements central tolerance: Regulatory T cells keeps the self-reactive T cells in check after they leave the **thymus** (an organ behind the breastbone), **ensuring the immune system does not attack the body.**

Why It's Important

1. **Autoimmune Diseases:** Tregs prevent T cells from attacking the body, avoiding diseases like type 1 diabetes or autoimmune thyroid disease.
2. **Cancer:** In tumors, Tregs sometimes protect cancer cells. Treatments may **remove or suppress Tregs** so the immune system can attack cancer.
3. **Organ Transplants:** Tregs help the body **accept transplanted organs** by preventing immune rejection.

How Regulatory T Cells Work

1. T cells are like **soldiers**; they **attack invaders** (bacteria, viruses).
2. Some T cells can **accidentally attack** the **body**.
3. **Regulatory T cells** act like commanders, telling these T cells: "Don't attack our own body."
4. This **balance** prevents autoimmune diseases while still fighting infections.

Key Examples from Research

1. **Sakaguchi (Japan)** studied mice without Tregs - The mice developed autoimmune diseases.
2. **Brunkow and Ramsdell (USA)** identified **Foxp3 gene** - Explained why humans with mutations get autoimmune diseases.

3. Today, over **200 studies** are exploring Tregs for treatments in cancer, autoimmune conditions, and organ transplants.

Challenges and Way Forward

Challenges	Way Forward
Balancing Treg activity: Too many Tregs can suppress immunity, too few can trigger auto-immune diseases.	**Develop therapies** that modulate Tregs precisely, increasing or decreasing them only where needed.
Targeted delivery: Treg-based interventions may affect the whole body instead of specific tissues/ organs.	**Use localized**, tissue-specific, or temporary Treg modulation **techniques** to minimize systemic side effects.
Safety and long-term effects: Manipulating Tregs is new, and long-term outcomes in humans are uncertain.	**Conduct extensive preclinical** and **clinical trials** to ensure **therapies** are safe, effective, and sustainable over time.
Individual variation: Genetic differences (e.g., Foxp3 mutations) influence Treg function and treatment responses.	**Implement precision medicine approaches** by tailoring therapies to individual genetic and immunological profiles.
Integration with existing treatments: Combining Treg modulation with conventional therapies can be complex.	**Research** optimal combination protocols, **monitor** biomarkers, and **personalize** treatment plans to **improve efficacy**.

6. Gaganyaan's Crew Escape System (CES)

Why in the News?

1. India's **Gaganyaan** programme uses a dedicated **Crew Escape System (CES)** to rapidly pull the crew module away from a failing launch vehicle during early atmospheric ascent.
2. ISRO has already flight-tested CES technology (first successful test in **October 2023**) and plans further tests to validate astronaut safety across critical ascent conditions.

Gaganyaan Mission

1. The **Gaganyaan Mission** is India's first **human spaceflight programme** launched by the **Indian Space Research Organisation (ISRO)**. Its main goal is to send **Indian astronauts (Vyomnauts)** to **low Earth orbit (around 400 km altitude)** and bring them back safely to Earth.
2. **Key Features:**
   a. **Launch Vehicle:** The mission will use the **Human-rated LVM3 rocket (HLVM3)**, a modified version of ISRO's most powerful rocket, capable of carrying astronauts safely.
   b. **Crew Module:** A specially designed **Crew Module** will house the astronauts. It will have life support systems, navigation, and safety features.
   c. **Crew Escape System (CES):** A **Crew Escape System** is built to ensure astronaut safety. It can separate the crew module from the rocket in case of an emergency during launch and help it land safely in the sea.
   d. **Orbit and Duration:** The mission aims to carry a crew of **three astronauts** to a **low-Earth orbit (~400 km)** for a **few days** before re-entry and splashdown.
   e. **Testing and Preparation:**
      i. ISRO has already conducted **uncrewed test flights** to validate systems like the CES.
      ii. Astronauts are undergoing **training in India and Russia**.
      iii. Several test vehicle missions will be completed before the final human flight.
3. **Objectives:**
   a. To demonstrate **India's capability** to send humans to space and bring them back safely.
   b. To build indigenous technologies for **life support, crew safety, and re-entry**.
   c. To lay the foundation for **future space exploration**, including a possible space station.
4. **Significance:**
   a. Positions India among a select group of nations (USA, Russia, China) with human spaceflight capability.

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b. Boosts India's **aerospace and defence technologies**.
c. Promotes **STEM innovation, national pride, and self-reliance** under the "Atmanirbhar Bharat" initiative.

5. Phases of the Gaganyaan Mission

a. Launch Phase
i. The HLVM3 rocket lifts off from Sriharikota.
ii. Two large S200 solid boosters provide the initial thrust.
iii. The rocket carries the Crew Module (with astronauts) into space.

b. Ascent Phase (Atmospheric Flight)
i. The rocket passes through dense atmospheric layers.
ii. This is the most critical phase because of high speed and pressure.
iii. If any problem occurs, the Crew Escape System (CES) activates.
iv. CES pulls the Crew Module away to safety within seconds.

c. Orbit Insertion
i. The rocket places the Crew Module in Low Earth Orbit (~400 km).
ii. The astronauts start orbiting the Earth at around 28,000 km/hour.
iii. The module provides life support, power, and communication.

d. In-Orbit Operations
i. Astronauts conduct basic scientific experiments.
ii. ISRO monitors all systems — oxygen, pressure, and temperature.
iii. The mission lasts for a few days in orbit.

e. Re-entry Phase
i. The Crew Module fires small thrusters to slow down.
ii. It begins descending towards Earth's atmosphere.
iii. Heat shields protect it from extreme temperatures (2000°C+).

f. Descent and Parachute Deployment
i. Multi-stage parachutes open one after another.
ii. The module slows down gradually for a soft landing.

g. Splashdown and Recovery
i. The Crew Module lands safely in the sea (Indian Ocean).
ii. Recovery ships and helicopters pick up the astronauts.
iii. Medical checks and debriefing follow the safe return.

Why a Crew Escape System (CES) is needed

1. During early ascent the rocket accelerates to **hypersonic** speeds and faces huge structural loads.
2. **Solid-fuel S200 boosters** on HLVM3 cannot be shut down once ignited, so if they malfunction the only option is to pull the crew module away quickly.
3. Therefore, the CES has to pull the crew module away from the rocket **faster than the rocket itself is moving**, and it must do this **within a few seconds** to keep the astronauts safe.

How does the CES work?

1. Gaganyaan uses a **puller-type CES**: a tower or motor assembly pulls the crew module away from the rocket.
2. The CES can impart accelerations up to **~10 g** for a few seconds; humans can tolerate such short pulses if strapped correctly (chest-to-seat orientation).
3. After separation, the crew module is released and slowed by a **multistage parachute system** to ensure safe splashdown in the sea.

Types of CES and rationale for choice

1. **Puller type** (used by Gaganyaan): rapid separation using solid motors or rockets above the crew module.
2. **Pusher type** (used by some other systems): small liquid engines push the capsule away.
3. Choice depends on integration constraints, propulsion technology and mission design.

Decision-making & monitoring systems

1. An **Integrated Vehicle Health Management (IVHM)** system (sensors, electronics, software) continuously monitors vehicle health and crew status to trigger CES activation when needed.

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2. Timely and reliable detection is critical to avoid false triggers and to maximise crew survival.

Challenges and Way Forward

Challenge	Way Forward
Verifying CES across flight regimes (transonic, supersonic, max Q)	Conduct multiple test flights simulating varied ascent trajectories and failure modes.
Human tolerance to high acceleration (up to ~10 g)	Rigorous biomedical testing, ergonomics design (seating posture), and medical screening for crew.
Avoiding false triggers of CES	Improve IVHM algorithms, redundancy, and sensor fusion to ensure reliable decision-making.
Safe descent & splashdown under varying sea conditions	Validate multistage parachute systems in diverse conditions and ensure robust recovery operations.
Integration with overall vehicle performance (mass, aerodynamics)	Iterative design optimisation to minimise weight penalty and aerodynamic impact; trade-off studies.

7. Dopamine and Digital Life

Why in the News?

1. **Dopamine** is the brain's key "**reward**" chemical which explains why modern stimuli (drugs, social media, games) feel compelling and can lead to addiction.
2. Rising concerns about **screen time, attention problems and youth mental health** make understanding dopamine important for public policy and personal well-being.

Key Highlights

1. **What is dopamine?**
   a. Dopamine is a **brain chemical (neurotransmitter)** that signals **reward, motivation** and **learning**. When we enjoy something like food, praise, achievement, then the dopamine release makes us want to repeat it.
2. **How does the brain's reward circuit work?**
   a. The **mesolimbic pathway** is a connection in the brain that controls how we feel pleasure and motivation. It links two main parts — the **ventral tegmental area (VTA)**, which releases the "feel-good" chemical dopamine, and the **nucleus accumbens**, which receives it.
   b. When we do something enjoyable, like eating or achieving a goal, this pathway gets activated. It helps our brain remember what made us feel good so that we try to do it again. This system is what drives motivation, reward, and learning from positive experiences.
3. **Dopamine: From substances to screens**
   a. Earlier, **addiction was mainly caused by substances** such as drugs, alcohol, or nicotine. These triggered huge releases of dopamine, making people feel intense pleasure. Over time, the brain became **desensitised**, needing more of the substance to feel normal, which led to addiction.
   b. Today, the same kind of addiction is seen with **technology and screens**. Every time we get a message, "like," or watch a short video, our brain releases a small amount of dopamine, which makes us feel good. Apps and social media are **made to keep us hooked**, just like slot machines that give random rewards, making us check our phones again and again.
4. **Effects on attention and youth mental health**
   a. This constant stimulation **rewires the brain's reward system**, especially in young people. It can lead to **short attention spans, anxiety, restlessness, and reduced ability to enjoy real-life experiences**.
   b. In short, the **addiction to substances has evolved into an addiction to screens**, both exploiting the same dopamine-driven pleasure pathways in the brain.

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5. **What dopamine overload does to everyday life?**
   a. Constant overstimulation can **reduce enjoyment of ordinary activities**, cause fatigue of the reward system, lower motivation for long-term goals, disturb sleep, and worsen mental health.
6. **How to rebalance dopamine?**
   a. Balance is the goal — not elimination. Measures include **digital detoxes (tech breaks, greyscale screens), mindfulness, physical activity, good sleep and meaningful social interaction**. These promote steady, sustainable reward and restore motivation for deeper activities.

Dopamine Fasting (Practical Tool)

1. A temporary, **intentional reduction of high-stimulus activities** (social media, junk food, nonstop entertainment) to reduce compulsive seeking.
2. Aims to restore sensitivity to natural rewards, such as exercise, learning, relationships.
3. Should be **practiced sensibly**, not as permanent deprivation and combined with sleep, nutrition and social support.
4. Useful as a self-management strategy.

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Implications

1. **Public health challenge:** Widespread screen-related dopamine overstimulation may increase anxiety, depression and attention disorders, particularly among young people.
2. **Education impact:** Shorter attention spans can affect learning outcomes and require changes in teaching methods and curriculum design.
3. **Workplace productivity:** Constant digital distractions reduce deep-work capacity and can lower long-term productivity despite short bursts of engagement.
4. **Consumer & platform responsibility:** Tech firms' dopamine-optimised designs raise ethical questions about addiction, especially for minors.
5. **Policy need:** Regulators may need to consider digital-wellness guidelines, age limits, and awareness campaigns to protect vulnerable groups.

Challenges and Way Forward

Challenge	Way Forward
Pervasive attention-stealing design (notifications, autoplay)	**Promote design ethics**, offer default "do not disturb" modes, and encourage platforms to provide **time-use reports**.
Youth vulnerability	Introduce **digital-literacy** and **mental-health education in schools**; set age-appropriate limits and parental controls.
Stigma around behavioural addiction	Run **public campaigns** to normalise help-seeking; increase access to counselling and digital-detox programs.
Workplace distraction culture	Encourage organisational policies for focused work (no-meeting blocks, **device-free times**) and promote **mindfulness breaks.**
Measuring harm & policy evidence gap	Fund **longitudinal research on screen time**, dopamine changes, and mental health to guide evidence-based regulation.

8. Tiny Superfluid Reveals Big Nonlinear Wave Behaviour

Why in the News?

A research team built a **wave flume on a microscopic chip** using a few-nanometre film of **superfluid helium** and observed extreme **nonlinear wave** behaviour which was previously inaccessible in laboratory tanks.

What is a Wave?

1. A **wave** is a **disturbance or vibration** that **transfers energy** from one place to another **without transferring matter**.
   Example: When you drop a stone in a pond, ripples move outward — the water itself doesn't travel, only the wave energy does.
2. **Main Characteristics of Waves:**
   a. **Crest:** The highest point of a wave.
   b. **Trough:** The lowest point of a wave.

c. **Amplitude:** The maximum displacement of particles from their rest position. It represents the wave's energy.

d. **Wavelength:** The distance between two consecutive crests or troughs.

e. **Frequency:** The number of waves passing a point per second (measured in Hertz).

f. **Velocity:** The speed at which the wave travels.

What are the different types of Waves based on Energy Behaviour?

Type	Description	Example
Linear Waves	Energy and amplitude are small, so wave behaviour is simple and predictable.	Small ripples in water
Nonlinear Waves	Energy is high, causing complex effects — wave height and speed change unpredictably.	Tsunamis, shock waves, solitons

Why do scientists study nonlinear waves?

1. **Large natural events** like tsunamis and extreme tides are **governed by nonlinear physics**, where small changes can produce large, surprising effects. Therefore, it is important to study nonlinear waves.
2. The study of how fluids move has fascinated scientists for centuries because **hydrodynamics** governs everything from ocean waves and the swirl of hurricanes to the flow of blood and air through our bodies.

What made scientists study nonlinear waves on a microscopic level?

1. Traditional **large water tanks** which were used to study nonlinear waves **cannot reach the extreme conditions** needed to study the most intense nonlinear waves found **in nature**.
2. Researchers therefore sought a new **experimental route** to explore full nonlinear behaviour under **controlled conditions**.

About the Experiment

1. **Objective of the study:** Scientists wanted to create **powerful waves** on a **tiny scale** to explore the physics behind **wave motion and turbulence**, which affect oceans, weather, and even blood flow.
2. They created a **wave flume** on a **microscopic chip** and used a unique kind of **fluid (helium) to generate more powerful waves** (relative to their size) than anything ever seen on the earth.
3. This setup allowed them to study **fluid dynamics** at an ultra-small scale with high precision.
4. They used **helium**, which became **superfluid** when **cooled to just a few degrees above absolute zero** (−273°C). In this state, **helium flows without friction or viscosity**, making it ideal for observing pure wave motion.
5. The team then fabricated a **silicon beam** about the **width of a human hair** on the chip. When cooled, a **6.7-nm** deep film of **superfluid helium** could naturally **coat this beam**, creating a **perfect wave channel**.
6. **Outcome of the setup:** The researchers successfully produced a **microscopic environment** capable of generating and studying extremely **powerful nonlinear waves** (relative to their size).

How were waves driven and seen on the chip?

1. The researchers used a **photonic crystal cavity** and a laser to heat the superfluid locally; the superfluid's fountain effect caused it to flow — acting as a tiny, light-powered paddle.
2. By monitoring the light exiting the cavity, the team measured wave **height and shape** in real time.

What they observed — exotic nonlinear phenomena

1. The team saw **backward steepening**: troughs moved faster than crests, causing the wave to lean backward before breaking. This is the reverse of normal water waves behaviour.
2. They produced **near-vertical shock fronts** by increasing drive power.
3. They observed **soliton fission**: one powerful pulse split into a train of solitary waves (up to 12), specifically **"hot solitons"** that were troughs slightly warmer than the surrounding fluid.

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4. A **Soliton** is a solitary wave that **holds its shape and speed** over incredibly long distances. They are examples of nonlinear wave dynamics.

Implications of this Research in the Real World

1. **Better understanding of extreme waves:** The findings improve theoretical understanding of how large nonlinear waves form and break, which helps modelling tsunamis and coastal hazards.
2. **New laboratory platform:** A compact, controllable **waves-on-a-chip** system allows rapid, repeatable experiments that would take hours in big tanks, accelerating discovery.
3. **Communications & optics:** Insights into **soliton dynamics** are relevant to optical fibre communications and information-carrying solitary pulses that resist dispersion.
4. **Advanced sensing and metrology:** The optomechanical measurement technique points to ultra-sensitive sensors for surface waves, thin films and small-scale fluid problems.
5. **Cross-disciplinary innovation:** The platform links **quantum fluids**, **nonlinear dynamics**, and **optomechanics**, creating opportunities in materials science, microfluidics and fundamental physics.

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Challenges and Way Forward

Challenge	Way Forward
Scaling results to real oceans	Use theoretical scaling (matching dimensionless numbers) and targeted field/large-flume tests to validate which chip results apply to macroscales.
Different governing forces (van der Waals vs gravity)	Map parameter ranges where **KdV-like** dynamics hold; run comparative experiments across fluids and depths to delineate limits of equivalence.
Need for specialized conditions (superfluid helium, cryogenics)	Develop alternative fluids or engineered surfaces that mimic key nondimensional behaviours at more practical temperatures.
Complex data interpretation & modelling	Invest in joint experimental–theory programs, build open datasets, and develop validated computational solvers for nonlinear regimes.
Translation to engineering applications	Create translational projects with communications, coastal engineering and sensor companies to test applied use-cases (optical solitons, early-warning algorithms).

9. Powering the AI Era through Data Centres and SMRs

Why in the News?

1. India's electricity demand is steadily growing at **~5% annual rate**. It is believed to accelerate because of large-scale rollouts of data centres, electric vehicles, green hydrogen projects and 5G/IoT applications.
2. Rapid build-out of **AI-capable data centres** and the search for reliable, low-carbon baseload power has brought **Small Modular Reactors (SMRs)** and new energy strategies to the forefront of national planning.

What is a Data Centre?

1. A data centre is a facility that **houses computer systems and associated components** such as storage, networking and power systems.
2. It provides **centralized infrastructure for processing, storing and distributing digital information and services**.
3. Their location decisions are influenced by latency, connectivity, power availability and regulatory factors.

Why does India need data centres?

1. India needs local data centres because the government's **Digital India** push and **data-localisation rules require storing and processing data** inside the country.
2. More people using the internet, mobile apps and cloud services, plus upcoming 5G speeds, will generate huge

amounts of data that must be hosted **close to users for speed and security**.

3. India currently has far **fewer large-scale data centre** resources than demand suggests.
4. As AI and other data-intensive services grow, more domestic capacity is needed to avoid bottlenecks and to **meet regulatory and performance requirements**.

How much power is required?

1. Modern AI data centres are far more power-hungry than traditional server farms because they run **energy-intensive hardware** like GPUs that draw tens to hundreds of kilowatts per rack.
2. AI workloads require **continuous computing and cooling**, causing very large electricity consumption per facility.
3. Global trends show data centre energy demand rising steeply; examples from other countries show power needs can grow much faster than earlier forecasts.
4. Therefore, India's planned data centre growth will significantly raise national and local electricity demand unless accompanied by careful planning.

Where are data centres being built?

1. Globally, major data centre clusters are concentrated in a few regions; in India, **coastal and metropolitan hubs** are preferred for connectivity and power access.
2. Large tech players and domestic firms are selecting sites near **ports, industrial zones and major cities** to build GW-scale facilities.
3. The pattern follows availability of land, connectivity, proximity to users and readiness of local power infrastructure.

What are the power sources?

1. Data centre operators seek low-carbon and reliable power to meet sustainability goals and secure constant operation.
2. **Renewable energy** (solar, wind) is a major option but is intermittent; therefore storage, hybrid solutions, and firming power sources (like gas, hydrogen, or nuclear) are considered.
3. Emerging alternatives include on-site generation, advanced storage, and low-carbon firm power such as **SMRs** that can offer 24/7 baseload with smaller footprints.
4. Operators therefore pursue diverse energy mixes to combine decarbonisation targets with high reliability.

What is a Small Modular Reactor (SMR)?

1. An **SMR** is a **small-sized nuclear power plant** that produces electricity using nuclear energy, just like big reactors — but on a smaller scale.
2. It is called **"modular"** because its parts are built in factories and then transported to the site for quick assembly.
3. Each SMR can generate **a few megawatts to a few hundred megawatts** of power — enough to supply a city or an industrial area.
4. SMRs are **safer** because they use modern designs that cool themselves automatically (called *passive safety*) even if there is no human action.
5. They need **less land, less water, and fewer workers**, making them easier to build in remote or special-purpose areas like near factories or data centres.
6. Since they produce steady power without emitting carbon, SMRs can **work together with solar and wind energy** to provide reliable, clean electricity all day.

How can India capitalise on SMRs?

1. SMRs are **attractive** because they are smaller, factory-built reactors that can be sited closer to demand centres and manufactured at scale.
2. To succeed, India needs **legal reforms, international technology partnerships, regulatory updates, workforce re-skilling** and **local manufacturing linkages**.
3. **Collaboration** between SMR vendors, data-centre companies and renewables firms can create integrated, low-carbon electricity solutions for high-demand consumers.

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How do SMRs enhance safety?

1. SMR designs include passive safety systems that reduce dependence on external power and human intervention, **lowering the risk of severe accidents**.
2. Their smaller core size and reduced radioactive inventory limit potential consequences, and simplified systems can **shorten emergency planning requirements**.
3. Modern fuels and containment strategies improve thermal and structural tolerance, giving operators **more time to respond** to incidents.
4. These design features aim to make SMRs inherently safer than many legacy reactor types.

What about SMR regulation?

1. Existing **nuclear licensing frameworks** were mainly **designed for large reactors** and may not fit SMR technology and factory-based approaches.
2. Countries are **reforming rules to allow technology-neutral standards,** streamlined licensing, fleet approvals and harmonised international recognition.
3. India will need **regulatory modernization, capacity building** for regulators, and coordination with international agencies to accelerate safe deployment.
4. Clear, predictable regulations are critical to attract private capital and vendors.

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What are the concerns related to transportation and waste of SMRs?

1. **Factory fabrication** and **transportation of fuel-loaded modules** raise security and accident-liability concerns; regulation must address these risks specifically.
2. New fuel types (e.g., HALEU) and coolant choices may **change the nature of radioactive waste streams**, requiring fresh disposal and interim-storage strategies.
3. On-site **interim storage** is a common vendor plan, but long-term national waste pathways must be established.
4. Transportation, safeguards, and waste management **rules** must evolve with technology to ensure safety and public confidence.

Key Terms

1. **HALEU (High-Assay Low-Enriched Uranium)**
   a. HALEU refers to uranium fuel enriched to higher levels (e.g., 5–20% U-235) than traditional low-enriched uranium but well below weapons grade.
   b. HALEU can improve reactor efficiency and enable advanced reactor designs, including many SMRs.
   c. Its production requires specialized enrichment capability and raises non-proliferation and supply-chain considerations.
   d. Regulatory, transport and safeguards frameworks must account for HALEU's physical and radiological properties.
   e. Availability of HALEU is a strategic enabler for many next-generation nuclear projects.
2. **Green Hydrogen**
   a. Green hydrogen is hydrogen produced by electrolysis using renewable electricity, with near-zero lifecycle carbon emissions.
   b. It can be used as an energy carrier, industrial feedstock, or fuel for flexible power generation.
   c. Green hydrogen can help decarbonise hard-to-electrify sectors and provide seasonal energy storage.
   d. Cost reductions in electrolysers and cheap renewable power are key to scalability.
   e. It can be co-located with data centres or SMRs for sector coupling and flexibility services.
3. **Digital India**
   a. Digital India is a government initiative to expand digital infrastructure, deliver services electronically and increase digital literacy.
   b. It aims to make government services accessible, foster online economic activity and connect citizens across regions.

c. The program drives demand for data, cloud services and secure digital platforms.

d. It intersects with infrastructure policy, cybersecurity and digital governance frameworks.

e. For planners, Digital India highlights the need for resilient data and power infrastructure to support public services.

Implications

1. **Grid stress and planning needs:** Rapid data-centre build-out will increase base and peak electricity demand, requiring grid reinforcement, local generation and strategic planning with utilities.
2. **Energy mix transformation:** To decarbonise data centres at scale, India must accelerate storage, renewables integration, and consider firm low-carbon sources like SMRs and green hydrogen.
3. **Local economic opportunity:** Data centres and SMR deployments can spur investments, jobs, manufacturing and regional development if aligned with local industrial strategies.
4. **Regulatory and legal reform imperative:** Licensing, liability, safeguards and transport regulations must be updated to enable safe, timely deployment of SMRs and new fuel cycles.
5. **Environmental and social safeguards:** Waste management, transport security and equitable energy access need robust policies to prevent adverse environmental and societal impacts.

Challenges and Way Forward

Challenge	Way Forward
Rapidly rising electricity demand from AI-scale data centres stressing local grids.	Integrated planning between data centre developers, state utilities and central agencies; targeted grid upgrades and dedicated evacuation plans.
Intermittency of renewables making 24/7 reliable power difficult for high-availability data centres.	Hybrid energy strategies combining renewables + storage + firm low-carbon sources (SMRs, gas with CCS, green hydrogen) and demand-side scheduling.
High capital and operational costs of SMR deployment and regulatory uncertainty.	Streamline licensing, offer fiscal incentives, enable public-private partnerships, and adopt technology-neutral regulatory frameworks to attract investment.
Safety, transport and waste management issues for modular nuclear units and new fuel types.	Develop specific transport, liability and waste regulations; mandate robust security protocols; plan interim and long-term waste storage pathways.
Limited domestic ecosystem for SMR manufacturing and skilled workforce.	Promote technology transfer, local manufacturing incentives, vocational training and skilling programs tied to SMR value chains.
Land, environmental clearances and social acceptance challenges near proposed sites.	Early stakeholder engagement, transparent environmental assessments, community benefit-sharing and reuse of decommissioned coal-site land.

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GEOGRAPHY & ENVIRONMENT

1. Coral Cryobanks

Why in the News?

1. The **Philippines** is set to host **Southeast Asia's first coral larvae cryobank**, a major step in marine conservation.
2. The initiative aims to **preserve coral genetic diversity** and restore damaged reefs amid rising climate threats.
3. It is part of a **regional collaboration** across the **Coral Triangle nations** to protect the world's richest marine ecosystem.

Key Highlights

1. What are corals?

a. Corals are **invertebrate animals** belonging to a large group of colourful and fascinating animals called **Cnidaria**.

b. A coral is made up of individual animals called **polyps**.

c. Each polyp has a stomach that **opens at only one end** and is surrounded by **tentacles**.

d. Food enters the stomach through that opening (mouth) and after consumption, **waste** products are **expelled** through the **same opening**.

e. They live in groups of hundreds to thousands of **genetically identical polyps** that form a '**colony**'.

f. The colony is formed by a process called **budding**, which is where the original polyp literally grows **copies of itself**.

g. Corals are generally classified as either "**hard coral**" or "**soft coral**".

h. **Colonial hard corals** are made up of hundreds to hundreds of thousands of individual coral polyps that cement themselves together by the **calcium carbonate** they secrete.

i. **Soft corals** do **not** produce rigid calcium carbonate skeletons and do not form reefs, though they are found in reef ecosystems. Soft coral colonies tend to **resemble trees, bushes, fans, whips, and grasses**.

2. What are coral reefs?

a. A coral reef is a term used to describe the **collective structure of hard corals** that help shape a coral reef ecosystem.

b. Coral reefs begin to form when **free-swimming coral larvae** attach to submerged rocks or other hard surfaces along the edges of islands or continents.

c. As the corals grow and expand, reefs take on one of **three major characteristic structures**—fringing, barrier, or atoll.

d. **Fringing reefs** are the most common, projecting seaward directly from the shore, forming borders along the shoreline and surrounding islands.

e. **Barrier reefs** also border shorelines, but at a greater distance. They are separated from their adjacent land mass by a lagoon of open, often deep water.

f. If a fringing reef forms around a volcanic island that sinks completely below sea level while the coral continues to grow upward, an **atoll** forms.

g. Coral reefs are the **largest living structure** on the planet, and the only living structure to be **visible from space**.

h. The largest coral reef in the world is **Australia's Great Barrier Reef**.

3. The Coral Triangle – The 'Amazon of the Seas'

a. Covers **5.7 million sq. km** across **Indonesia, Malaysia, Papua New Guinea, the Philippines, Solomon Islands, and Timor-Leste**.

b. Home to **76% of world's coral species**, **33% of reef fish**, and **6 of 7 marine turtle species**.

c. Supports **over 120 million people** through fisheries and tourism.

d. Faces threats from **climate change**, **pollution**, and **destructive fishing**, leading to **coral bleaching** and **habitat loss**.

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4. **Global Coral Decline**
   a. As per *Status of Coral Reefs of the World 2020*, **14% of corals lost between 2009–2018**.
   b. Scientists warn that **70–90% of coral cover could vanish by 2050** if global warming exceeds 1.5°C.
   c. Even under best scenarios, **ocean temperatures may take decades to stabilise**, leaving corals vulnerable.
5. **The Coral Cryobank Initiative**
   a. **Led by:** University of the Philippines Marine Science Institute.
   b. **Process:** Coral larvae (tiny free-swimming coral "seeds") are **frozen and preserved** using **cryopreservation** techniques.
   c. **Goal:** To store genetic material for **reef restoration and research** in future.
   d. **Regional network:** Linked with research bodies in **Taiwan, Malaysia, Indonesia, and Thailand** under the **Coral Research & Development Accelerator Platform**.
6. **The Science Behind Cryopreservation**
   a. Technique: **Vitrification** — larvae are treated with protective solutions, then frozen rapidly in **liquid nitrogen at –196°C**.
   b. This prevents **ice crystal formation**, preserving delicate coral tissues.
   c. Thawing: Done using **laser-based rapid warming** to prevent re-crystallisation.
   d. Revival: Rehydrated larvae are observed for **movement and settlement in ocean**, then transferred to tanks for growth.
   e. It acts as a **"genetic insurance policy"**, safeguarding coral biodiversity for future generations.
7. **Broader Regional Collaboration**
   a. Cryobanks for **coral symbionts (algae living in corals)** are also being developed in **Thailand**.
   b. Scientists stress that **all coral species are endangered**, not just a few.
   c. The initiative combines **science, community awareness, and policy**, aiming to ensure **resilience and sustainable livelihoods** in the Coral Triangle.

Key Terms

1. **Coral Bleaching**
   a. Occurs when **ocean temperatures rise**, causing corals to expel **symbiotic algae (zooxanthellae)**.
   b. Leads to **loss of color** and energy starvation of corals.
   c. Major cause: **climate change**, **pollution**, and **ocean acidification**.
   d. Repeated bleaching events can lead to **mass coral death**.
   e. Considered one of the **most visible impacts of global warming** on marine ecosystems.
2. **Blue Economy**
   a. Refers to **sustainable use of ocean resources** for economic growth, improved livelihoods, and jobs.
   b. Includes **fisheries, aquaculture, renewable energy, and tourism**.
   c. Balances **economic development with ecological sustainability**.
   d. Promoted under **SDG 14 – Life Below Water**.
   e. Key for coastal nations like **India and ASEAN countries**.

Implications

1. **Scientific Breakthrough:** Cryobanks create a long-term backup of coral biodiversity, enabling future restoration even if species go extinct.
2. **Climate Adaptation Tool:** Offers resilience against **warming oceans** and **mass bleaching events**.
3. **Regional Cooperation:** Strengthens **ASEAN-level marine conservation** through shared research and innovation.
4. **Livelihood Protection:** Sustains the **fishing and tourism sectors** dependent on healthy coral reefs.
5. **India's Relevance:** Provides lessons for **Indian Ocean coral systems** (Lakshadweep, Andaman & Nicobar) on how to integrate **science with conservation**.

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Challenges and Way Forward

Challenges	Way Forward
1. **Climate change and ocean warming** threaten coral survival.	Strengthen **global commitments** under the Paris Agreement and promote **blue carbon ecosystems**.
2. **High cost and complexity** of cryopreservation technology.	Increase **international funding** and share **technological expertise** through joint research platforms.
3. **Limited local awareness** among coastal communities.	Launch **community education and eco-tourism programmes** to promote reef protection.
4. **Pollution and destructive fishing practices** persist in the region.	Enforce **marine protected areas (MPAs)** and promote **sustainable fishing methods**.
5. **Lack of policy integration** across Coral Triangle nations.	Develop a **unified regional framework** for coral conservation and data-sharing.

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2. Crowd Disasters in India

Context

A stampede at a political rally in **Karur, Tamil Nadu**, caused multiple deaths and injuries, highlighting India's recurring **crowd-safety issues** at rallies, religious events, sports, and railway stations.

What is a stampede?

1. A **stampede** is a sudden, uncontrolled rush of a large crowd of people or animals, often causing injuries, deaths, and damage, usually triggered by panic, fear, or overcrowding. It is classified as a **crowd disaster.**
2. **Examples: Karur Stampede** (September 2025), **Mahakumbh Mela stampede** (Feb 2025), **Hathras religious gathering stampede** (July 2024), etc.
3. As per **NCRB**, approximately **3000 lives** were lost in stampedes between **2000-2022.**

What are the factors leading to crowd disasters/ Stampedes?

1. **Structural Factors:** Weak or temporary structures, narrow or blocked exits, slippery roads, steep terrain, poor lighting, and unauthorized construction that blocks evacuation.
2. **Fire and Electrical Hazards:** Fires in temporary structures, short circuits, illegal wiring, electricity failures causing panic, and lack of fire safety measures.
3. **Crowd Control Failures:** Overcrowding, blocked exits, poor queue management, lack of Public Address (PA) systems, inadequate partitions, and traffic mismanagement.
4. **Crowd Behaviour:** Sudden rushes, collisions, panic due to rumours, delays, disasters, or free distribution, and overcrowding during events like celebrity appearances or promotions.
5. **Security Lapses:** Insufficient or untrained security personnel, poor surveillance (CCTV, PA systems, observation towers), weak communication, and misuse of force.
6. **Lack of Coordination Among Stakeholders:** Poor coordination between police, administration, fire, medical, and transport services; delayed key personnel; inadequate emergency services.

What are the Consequences of Crowd Disasters/ Stampedes?

1. **Human Cost:** Large-scale deaths, crush injuries, and lasting psychological trauma for survivors.
2. **Governance Deficit:** Reveals weak administrative planning and reduces public trust in the State.
3. **Economic Burden:** High expenditure on rescue, medical care, rehabilitation, and compensation.
4. **International Image:** Repeated incidents signal poor preparedness for mass gatherings, affecting India's global reputation.

Role of Technology and Law Enforcement in Reducing These Cases:

Role of Technology:

1. **Monitoring:** CCTV, drones, thermal imaging track crowd density and identify risks.

2. **Communication:** PA systems, mobile alerts, digital signage guide crowds and coordinate staff.
3. **Prediction & Management:** AI analytics, crowd simulation, digital ticketing help control inflow and prevent surges.
4. **Emergency Preparedness:** IoT sensors, smart alarms, and apps aid early hazard detection and first-aid response.

Role of Law Enforcement:

1. **Pre-event Planning:** Coordination with organizers, municipal authorities, and intelligence gathering reduce risks.
2. **Crowd Control:** Trained personnel, barricades, snake-line queues, and emergency routes manage inflow/outflow.
3. **During Event:** Continuous monitoring, tactical interventions, and traffic control prevent accidents.
4. **Post-event Response:** Rapid evacuation, ambulances, mock drills, and audits improve safety and preparedness.

What are the NDMA guidelines for crowd management in India?

1. Integrated Planning Approach

a. **Capacity Planning**: Assess and design venues to accommodate expected crowd sizes safely.
b. **Risk Assessment**: Identify potential hazards and vulnerabilities associated with the event and venue.
c. **Preparedness Planning**: Develop contingency plans for various emergency scenarios.
d. **Incident Response**: Establish clear protocols for managing emergencies effectively.
e. **Capacity Building**: Train personnel and stakeholders to handle crowd management tasks proficiently.

2. Stakeholder Coordination

a. **Unified Control System**: Ensure collaboration among organizers, local administration, police, fire services, medical teams, and other relevant agencies.
b. **Role Definition**: Clearly delineate responsibilities to avoid confusion during operations.

3. Use of Technology

a. **Surveillance Systems**: Implement CCTV cameras and drones for real-time monitoring of crowd movement.
b. **Communication Tools**: Utilize public address systems and mobile alerts to disseminate information promptly.
c. **Data Analytics**: Employ software to predict crowd behavior and identify potential risks.

4. Legal and Regulatory Framework

a. **Compliance with Laws**: Adhere to existing laws and regulations related to public safety and crowd control.
b. **Permits and Approvals**: Obtain necessary permissions from authorities before organizing events.

5. Community Engagement

a. **Public Awareness**: Educate the public about safety measures and emergency procedures.
b. **Feedback Mechanisms**: Establish channels for attendees to report concerns or incidents.

Challenges and Way Forward

Challenges in Prevention	Way Forward / Solutions
Event scale & unpredictability: Large religious, political, or sporting gatherings attract unmanageable crowds.	**Scientific crowd management:** AI-based predictive modelling, sensors, drone surveillance; dedicated Crowd Management Units. Adoption of global best practices like one-way flow crowd design (Hajj in Saudi Arabia).
Low compliance with safety norms: NDMA guidelines on crowd flow, barricading, and exits are often ignored.	**Strict accountability:** Penal provisions under Disaster Management Act; real-time audits of event preparedness.
Coordination gaps: Fragmented responsibilities among police, civic agencies, and organisers.	Unified command and control; clearly defined roles for police, civic agencies, and organisers

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Limited use of technology: Tools like AI, drones, and real-time monitoring underutilised.	**Technology integration:** Mobile apps for crowd alerts, geo-fencing, SMS advisories; e.g., GIS mapping at Kumbh Mela 2019. Real-time digital ticketing for sports/cultural events.
Public behaviour: Ignoring advisories, rushing towards focal points, panic on rumours.	**Community awareness:** Mass awareness campaigns, volunteer training in first aid and evacuation drills.
Oversubscription & congestion at events.	**Infrastructure redesign:** Wider entry/exit routes, crash barriers, overhead monitoring, dedicated evacuation corridors.

3. Hanle Protects Its Dark Skies

Context

1. In 2025, the **Hanle region** of **Ladakh** gained national attention as **India's first Dark Sky Reserve**, a pioneering initiative blending **science**, **sustainability**, and **local participation**.
2. The Reserve, located in the **Changthang Wildlife Sanctuary**, now serves as a **global example** of how protecting the night sky can also strengthen livelihoods through **astro-tourism and education.**

What is a Dark Sky Reserve?

1. A **Dark Sky Reserve** is a designated area where **artificial light pollution is strictly controlled** to preserve natural night skies for scientific, educational, and cultural purposes.
2. Globally, such reserves are certified by the **International Dark-Sky Association (IDA)**.
3. They enable both **professional astronomy** and **public stargazing** while promoting **ecological balance** and **sustainable tourism**.

Hanle Dark Sky Reserve: Location and Significance

1. The **Hanle Dark Sky Reserve** lies at an altitude of around 4,250 metres in Ladakh's **Changthang Plateau**, one of the world's most pristine astronomical sites.
2. It is managed through a tripartite agreement among the **Indian Institute of Astrophysics (IIA), the Union Territory of Ladakh**, and the **Ladakh Autonomous Hill Development Council (LAHDC), Leh**.
3. Hanle's **Bortle-1 rated skies**, the highest clarity on a 9-point scale, make it ideal for deep-sky observations and astrophotography.
4. Its **dry climate**, **low humidity**, **minimal aerosols**, and **near-zero light pollution** ensure uninterrupted **celestial visibility.**

Scientific Institutions and Observatory Infrastructure

1. Hanle hosts the **Indian Astronomical Observatory (IAO)**, operated by the IIA.
2. Major telescopes here include:
   a. **Himalayan Chandra Telescope (HCT)**: Optical and infrared observations.
   b. **GROWTH-India Telescope**: A collaboration with IIT Bombay for time-domain astronomy.
   c. **High Altitude Gamma-Ray Telescope (HAGAR)**: In partnership with TIFR.
   d. **Major Atmospheric Cherenkov Experiment (MACE)**: India's largest gamma-ray telescope, developed with BARC.
3. These facilities make **Hanle** one of **Asia's highest-altitude astronomical hubs** and a vital contributor to **India's space science ecosystem.**

Astro-Tourism and Community Participation

1. To integrate science with sustainable development, IIA has trained **25 local youth (including 18 women)** as **Astronomy Ambassadors**.
2. They conduct **night-sky tours, telescope demonstrations**, and basic astronomy sessions for tourists, earning income while promoting scientific literacy.
3. In 2024, the reserve recorded nearly **10,000 visitors**, indicating the rapid growth of **astro-tourism** as a livelihood source for the remote Himalayan community.

Conservation and Light Pollution Control

To preserve Hanle's dark skies:

1. The IIA distributed **lamp shades, blackout curtains, and warm-tone LED bulbs** to local households.
2. Outdoor lighting is regulated, and **no white or blue light** is permitted during stargazing events.

3. Local residents actively participate in maintaining the light-free environment, linking conservation with community ownership.

Annual Star Party: Science Meets Society

1. Since **2023**, the Reserve has hosted an annual **"Star Party"** - a public astronomy festival combining lectures, observation sessions, and astrophotography workshops.
2. The **2025 edition** saw participants from across India, supported by volunteers from the **Bangalore Astronomical Society**.
3. Attendees observed rare phenomena such as **zodiacal light**, **gegenschein** (faint glow at the point in the sky opposite the Sun), and the **Belt of Venus**, visible only from ultra-clear skies like Hanle's.
4. These gatherings also promote **hands-on science learning** and **inspire interest** in **astronomy** among youth.

Challenges and Way Forward

Challenges	Way Forward
Harsh climatic conditions and low oxygen levels limiting long stays	**Develop acclimatization facilities** and **medical support** for visitors
Limited digital connectivity and logistics in remote areas	**Expand digital infrastructure** and eco-friendly visitor amenities
Balancing tourism with **ecological conservation**	**Implement strict visitor caps** and light pollution **audits**
Need for **long-term funding** for research and outreach	Establish a **dedicated** Hanle Sky Foundation for **research**, **education**, and **conservation**

4. E-Waste Crisis in India

Why in the News?

India's rapid digitalisation, from smartphones to smart homes, has boosted convenience but generated **2.2 million tonnes of e-waste in 2025**, making it the **third-largest global producer** (after China and the USA). At current rates, this volume may **double by 2030**, posing serious **environmental and public health challenges**.

What is E-Waste?

E-waste refers to discarded **electrical and electronic devices** such as smartphones, computers, TVs, and appliances, which can release **toxic substances** if not properly managed.

Why is E-Waste a Concern in India?

1. **Rapid growth:** India's e-waste rose from **0.71 MT in 2017–18 to 2.2 MT in 2025**.
2. **Urban hotspots:** 65 cities contribute **over 60%** of total e-waste; key areas include **Seelampur (Delhi), Mustafabad (Delhi), Moradabad (UP), and Bhiwandi (Maharashtra)**.
3. **Informal recycling dominance:** More than **50% of e-waste is processed informally**, exposing workers and communities to hazards.

How is E-Waste Processed Informally?

1. **Manual dismantling** (by kabadiwalas, scrap dealers, and slum-based workshops) without protective equipment.
2. **Open-air burning** of wires and circuit boards.
3. **Acid leaching and dumping** of components without gloves, masks, or protective clothing.
4. **Toxins released:** Heavy metals (**lead, mercury, cadmium, chromium**), **POPs (persistent organic pollutants)**, and **PM2.5/PM10**.
5. PM2.5 levels in hotspots often exceed **300 µg/m³**, over **12 times the WHO safe limit**.

What are the Health Impacts of E-Waste?

1. **Respiratory illnesses:** Chronic bronchitis, asthma, wheezing, breathlessness.
2. **Neurological and developmental damage:** Lead, mercury, and cadmium affect **children's IQ, attention, and behavior**.
3. **Skin and ocular disorders:** Chemical burns, dermatitis, eye irritation from acids and heavy metals.
4. **Genetic and systemic effects:** DNA damage, **oxidative stress**, immune alterations.
5. **Syndemic risks:** Poverty, malnutrition, and unsafe housing **worsen health outcomes**.
6. **Studies and Data:**
   a. In **Benin, West Africa**, exposed workers had higher respiratory ailments than non-exposed

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control groups, and in **India**, around **80% of informal e-waste workers** report similar health issues.

b. **Studies from China and WHO data** show that **millions** of **children** exposed to **hazardous lead** from **informal e-waste** face all the above impacts.

c. **WHO** reports **18 million children and 13 million women** live or work near informal **e-waste zones**. In **India**, children often dismantle **electronics**, facing serious **health risks**.

What are the Environmental Implications?

1. **Air pollution:** PM2.5/PM10 from burning electronics.
2. **Soil and water contamination:** Heavy metals and POPs accumulate in the ecosystem.
3. **Bioaccumulation:** Toxins enter the **food chain**, affecting humans and animals.

What Policies Exist to Manage E-Waste in India?

1. **E-Waste (Management) Rules, 2022:**
   a. Strengthened **Extended Producer Responsibility (EPR)**.
   b. Mandatory **registration for recyclers and dismantlers**.
   c. Incentives for **formalisation and scientific handling**.
2. **Implementation gaps:**
   a. Only **43% of e-waste is formally processed (2023-24 data)**.
   b. Legal disputes over **EPR credit pricing** hinder enforcement.
      i. **EPR credit pricing** is the **price producers pay to recyclers** to meet their responsibility of safely collecting and recycling e-waste. Low or capped prices can **discourage proper recycling** and affect compliance.

Challenges and Way Forward

Challenges	Way Forward
Majority of e-waste processed informally	Formalise the informal sector through **skill certification, PPE provision, and regulated infrastructure.** Also include access to healthcare and social security.
Weak implementation of E-Waste Rules	Strengthen **enforcement via pollution control boards, environmental audits, and digital e-waste tracking** to ensure compliance
Limited public awareness	Launch **mass awareness campaigns and include e-waste education in schools** to build public responsibility from an early age.
High health risks for workers	Expand **medical surveillance, health camps, and long-term studies,** especially for children in e-waste hotspots.
Inefficient recycling technologies	Promote **R&D for affordable local recycling methods and decentralised treatment hubs** to improve efficiency.

5. Environmental Surveillance and Wastewater Sampling

Why in the News?

1. The **Indian Council of Medical Research (ICMR)** has announced wastewater surveillance for **10 viruses across 50 cities**.
2. Environmental surveillance is gaining importance after the **COVID-19 pandemic experience**, where wastewater sampling helped in early detection.

Key Highlights

1. **What is Environmental Surveillance?**
   a. **Environmental surveillance** monitors **pathogens** in places like **sewage**, **soil**, and **air** by detecting pathogens shed in **urine** or **stool**, even from **people without symptoms**, providing a **reliable measure** of **infection levels** within a **community**.
2. **How Does Wastewater Surveillance Work?**
   a. **Samples** are collected from **sewage plants**, **hospital waste**, and **public places** like railway stations and airplane toilets.
   b. These samples **monitor diseases**, including those caused by **parasitic worms** such as **roundworms** and **hookworms**, using wastewater and soil.

c. **Strict protocols** guide how samples are collected, processed, and analyzed for **accurate results**.
d. Following these **protocols** allows **comparison** of **pathogen levels** over time.
e. Additionally, **whole-genome sequencing** helps identify different variants of the same pathogen.

3. **Why is it Important?**
   a. Traditional **clinical case detection** depends only on people who show symptoms or get tested.
   b. **Silent carriers** remain undetected but contribute to disease spread.
   c. Wastewater surveillance offers **early-warning signals**, often preceding clinical cases by **a week or more**.
4. **Why do early-warning signals matter?**
   a. **Early-warning signals** detect rising levels of **pathogens** in the environment, helping **public health officials** estimate **infection rates** and gain crucial time to prepare for and respond to potential **outbreaks**.
   b. For example: **Wastewater-based epidemiology** has tracked diseases like **measles**, **cholera**, and **polio** for over 40 years. **India** began **wastewater surveillance** for polio in **Mumbai** in 2001. During the **COVID-19 pandemic**, similar surveillance was launched in five Indian cities and continues to operate today.
   c. These signals are vital for effective **disease control** and **planning**.
5. **Current Developments in India**
   a. The **Indian Council of Medical Research (ICMR)** is launching **wastewater surveillance** for 10 **viruses** across 50 cities to monitor **viral loads** in communities, building on its existing work with viruses like **avian influenza**.
   b. Improving **data sharing**, standardizing **protocols**, and moving from isolated projects to integrated, **programmatic surveillance** are key priorities.
   c. Developing a **national wastewater surveillance system** is essential for comprehensive disease monitoring in India.
   d. Emerging methods, like analyzing public **cough audio** with **machine learning**, show expanding possibilities for **environmental surveillance**.

Implications

1. **Public Health Preparedness:** Early-warning enables **timely containment** of outbreaks. Helps optimize **healthcare resource allocation** (ICU beds, medicines).
2. **Tracking Silent Infections:** Captures data on **asymptomatic carriers** who otherwise remain invisible. Provides a more **accurate estimate of disease burden**.
3. **Policy and Governance:** Strengthens **integrated disease surveillance systems (IDSP)**. Encourages a shift from **reactive response** to **preventive action**.
4. **Research and Innovation:** Opens scope for **whole-genome sequencing research** on variants. Encourages **AI and machine learning applications** in disease prediction.
5. **Global Health Diplomacy:** Sharing of data can help **cross-border collaboration**. Aids in **WHO-led global disease surveillance frameworks**.

Challenges and Way Forward

Challenges	Way Forward
Lack of uniform protocols across states	Develop **standardised national frameworks** for wastewater surveillance
Data-sharing barriers between institutions	Ensure **inter-agency collaboration** and create **open-access platforms**
Limited coverage of cities and rural areas	Expand surveillance to **tier-2, tier-3 cities and villages**
Project-based initiatives, not long-term	Shift towards **programmatic and institutionalised approaches**
Technological & financial constraints	Invest in **lab capacity, genome sequencing, AI tools**

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6. India's Disaster Resilience

Why in the News?

Darjeeling, known for its **beauty** and **climate**, has faced **multiple natural disasters** (like **landslides** and **floods**) in recent years, including **October 2025's extreme rainfall** event that collapsed **Dudhia Bridge**, disrupting key roads between **Siliguri** and **Mirik**, highlighting

India's **need for a multi-faceted approach** to manage its **diverse hazards** (like **heat related challenges and extreme rainfall events**) effectively.

What is a hazard and a disaster?

1. A **hazard** is a natural or human-made event with the **potential to cause harm** to people, property, or the environment.
2. A **disaster** occurs when a hazard **actually causes severe damage, loss of life, or environmental degradation** that exceeds a community's capacity to cope, impacting the vulnerable populations.

What are the causes of increasing disasters?

1. **Population Pressure and Unregulated Urbanization:** Migration (from plains and neighboring countries) and unchecked land buying have exceeded the hills' carrying capacity, blocked drainage, and weakened slopes, heightening landslide and flood risks.
2. **Climate Change and Altered Rainfall Patterns:** Steady monsoons have turned into short, intense downpours, making the terrain more unstable.
3. **Hydrological Instability:** Rivers and streams are altering course, flooding and eroding settlements.
4. **Unsustainable Development Projects:** Hydropower, rail, and tourism projects on fragile slopes strain ecology and amplify disaster vulnerability.

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What impacts do these increasing disasters have?

1. **Social:** Leads to loss of life, injuries, displacement, and long-term health risks, especially for vulnerable groups like children, the elderly, and marginalized communities.
2. **Economic:** Damage to agriculture, infrastructure, tourism, and livelihoods.
3. **Environmental:** Soil erosion, deforestation, river siltation, biodiversity loss.
4. **Strategic:** Disruption of border areas and critical infrastructure.

What steps have been taken by the Government for Disaster Management?

1. **Institutional Framework:**
   a. **The Ministry of Home Affairs (MHA)** and the **National Disaster Management Authority (NDMA)** oversee both **pre- and post-disaster phases.**
   b. It is guided by PM's **Ten-Point Agenda on Disaster Risk Reduction (2016)**.
      i. It offers a holistic approach to managing disaster risk. It integrates preparedness across all levels of society by emphasizing inclusive policies, leveraging technology, building local capacity, and fostering international cooperation.
   c. Established **inter-ministerial and Centre-State committees** to oversee implementation of policies.
2. **Disaster Risk Reduction (DRR) and Funding**
   a. The **15th Finance Commission** in 2021, allocated around **$30 billion over 5 years for DRR**, covering **prevention**, **mitigation**, **preparedness**, **capacity building**, and **post-disaster reconstruction**.
   b. Distribution of Funds: 10% to Preparedness/ Capacity Building, 20% to mitigation, 40% to post-disaster response and 30% to reconstruction.
   c. **Five priority areas for nature-based DRR:**
      i. **Identify Risks:** Find and prioritise the most dangerous hazards.
      ii. **Science-Based Planning:** Use scientific methods for mitigation and reconstruction.
      iii. **Avoid Overlap:** Make sure new programmes don't repeat existing ones.
      iv. **Better Coordination:** Improve cooperation between Centre, States, and ministries.
      v. **Simple Rules:** Keep regulations practical and easy to follow.
3. **Capacity Building**
   a. Created 2 volunteer groups (approx 2.5 volunteers) - Apda Mitra and Yuva Apda Mitra
   b. Established geo-spatial training labs and action based research at National Institute of Disaster Management (NIDM).
   c. NIDM now has a 36-stream disaster management course to mainstream training down to the panchayat level.

4. **Mitigation Projects**
   a. **National Cyclone Mitigation Programme (2011–22)** successfully reduced coastal vulnerability through **early warning systems, cyclone shelters, and embankments**.
   b. The government aims to prioritize **nature-based solutions** to address climate change and extreme weather. NDMA also urges **States and urban authorities** to:
      i. Rejuvenate water bodies and green spaces to prevent urban floods.
      ii. Use remote sensing and automated weather stations to monitor glacial lakes.
      iii. Apply bio-engineering for slope stabilisation in landslide-prone zones.
      iv. Revive beels (water bodies) along the Brahmaputra and implement fire prevention measures.
5. **Early warning Systems**
   a. The government has developed **advanced early warning systems** for multiple **hazards**, reducing **casualties**.
   b. The **Common Alerting Protocol** provides timely **alerts** in **regional languages**. **Community capacity** is strengthened through a **network of universities** and various **training programmes**.
   c. **Mock drills**, **hazard-specific awareness campaigns**, and **school safety programs** further prepare **citizens** for **disasters**.
6. **International Cooperation:**
   a. **India** coordinates internationally to **learn** and **share knowledge** on **disaster risk reduction**.
   b. It created the **Coalition for Disaster Resilient Infrastructure (CDRI)** and leads initiatives at **G20, SCO, BIMSTEC, and IORA**.

Challenges and Way Forward

Challenges	Way Forward
Weak local institutions and disaster management units	Strengthen local units with trained personnel, emergency funds, and clear responsibilities
Unplanned urbanisation and encroachment on hill slopes	Enforce strict **land-use zoning** and protect **eco-sensitive areas**
Unsustainable tourism and infrastructure development	Implement **eco-tourism guidelines** and assess **carrying capacity** before projects
Ignored scientific warnings and lack of preparedness	Use **regular early warning systems**, community drills, and awareness campaigns
Construction on fragile slopes increasing landslide and flood risk	Ban construction on **fragile hilltops** and conduct **scientific risk assessments** for new projects

7. Cloud Seeding

Context

The **Delhi government** proposed **cloud seeding** in **winter 2025** as an **emergency response** to **worsening air pollution**. However, the **region's dry, stable winter atmosphere** offers little scope for successful rainfall. Experts highlight that cloud seeding provides **only temporary relief** and **fails to tackle** the fundamental causes of pollution such as **emissions** and **poor waste management**.

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Cloud Seeding and Conditions Required for It

1. **Definition:** Cloud seeding is a form of weather modification that **artificially induces rainfall** by dispersing specific particles into existing clouds to promote condensation or freezing.
2. **Mechanism:** Substances such as **silver iodide (AgI), sodium chloride (NaCl), potassium iodide (KI),** or **dry ice (CO_2)** are introduced into clouds. These particles act as **condensation or ice nuclei,** enabling water vapour to freeze or condense around them. As droplets become heavier, they precipitate as rain or snow.
3. **Conditions Required:**
   a. Presence of **moisture-laden clouds**; seeding cannot create clouds.
   b. **Adequate humidity** and **vertical air motion** to sustain cloud growth.

c. **Favourable temperature** conditions for condensation or freezing.
d. **Unstable atmospheric layers** to allow vertical mixing.
e. Absence of **high-pressure, stagnant weather systems** that trap pollutants.

Types of Cloud Seeding

1. **Static Cloud Seeding:** Uses agents like **silver iodide** to stimulate ice formation in supercooled clouds.
2. **Dynamic Cloud Seeding:** Enhances **vertical air currents** within clouds to increase their mass and potential rainfall.
3. **Hygroscopic Cloud Seeding:** Sprays salts such as **sodium chloride** in warm clouds to encourage droplet coalescence and rainfall.

Objectives and Applications of Cloud Seeding

1. **Rainfall Augmentation:** To increase precipitation in drought-prone or arid regions.
2. **Water Resource Management:** Enhances groundwater recharge and reservoir levels.
3. **Agricultural Support:** Provides moisture during dry spells to safeguard crops.
4. **Weather Modification:** Used for fog dissipation at airports and hail suppression.
5. **Pollution Mitigation (Experimental):** Intended to wash out suspended pollutants, though its effect is temporary and uncertain.

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Global and Indian Examples

1. **Global Context:**
   a. **China:** Implements large-scale weather modification projects for agriculture and events like the 2008 Beijing Olympics.
   b. **United Arab Emirates:** Runs advanced rain enhancement programs using aircraft-based technology.
   c. **United States & Australia:** Use seeding for drought relief and snowpack improvement.
   d. **Israel:** Conducted decades of experimentation but scaled down due to limited benefits.
2. **Indian Context:**
   a. **Karnataka - Project Varshadhare:** Aimed at inducing rain during droughts.
   b. **Maharashtra, Tamil Nadu, Andhra Pradesh:** Undertook similar operations with mixed results.
   c. **Institutional Role:** IMD and various state agencies provide technical guidance and data support for pilot projects.

Challenges and Way Forward

Challenges	Way Forward
1. Scientific Uncertainty: Results remain inconsistent; no conclusive evidence of success.	Conduct rigorous, long-term trials under IMD and WMO supervision before operational use.
2. Meteorological Constraints: Ineffective during dry and stable atmospheric conditions such as Delhi's winter.	Apply seeding only during favourable conditions with existing cloud systems.
3. Environmental Risks: Accumulation of silver iodide or salts may harm soil and aquatic systems.	Use environmentally safe agents, monitor impacts, and regulate chemical use.
4. Ethical Misuse: Presenting unverified science as a solution misleads public policy.	Enforce scientific integrity and ensure transparent evaluation of results.
5. Governance & Accountability: Lack of liability frameworks in case of floods or unintended outcomes.	Develop clear legal and institutional protocols defining responsibility.
6. High Costs vs. Low Returns: Cloud seeding is expensive with uncertain benefits.	Prioritise emission reduction, renewable energy, and sustainable air quality programs.
7. Public Perception: Creates illusion of a quick fix, diverting attention from structural reforms.	Strengthen awareness campaigns on long-term pollution control and sustainable urban planning.

8. Rare Earth Geopolitics

Context

China, which **dominates the global supply** of **Rare Earth materials**, has announced new **export restrictions** on their **mining and processing**, citing concerns that

foreign entities are allegedly **diverting these resources for military applications**.

What are rare earth elements?

1. **Rare Earth Elements** (REEs) are a group of **17 metallic elements - 15 lanthanides** + **scandium** + **yttrium**.
2. They are known for their **unique magnetic**, **conductive**, and **optical properties**.
3. These elements are integral to the production of **high-tech devices** such as **smartphones**, electric vehicles (**EVs**), **wind turbines**, and **military systems**.

What are rare earth minerals?

1. They are **naturally occurring minerals** that contain one or more REEs as major constituents.
2. Examples include **monazite** and **bastnäsite**.
3. These minerals are **mined to extract REEs**, which are then **processed** into **usable forms** for various applications.

What are rare earth magnets?

1. Rare Earth Magnets are **powerful permanent magnets** made from alloys of REEs, primarily **neodymium**, **terbium**, **samarium** and **dysprosium**.
2. Essential in EV motors, wind turbines, and advanced electronics due to their **high magnetic strength and efficiency**.

What are rare earth critical minerals?

1. Rare Earth Critical Minerals refer to REEs that are **deemed essential** for **national security** and **economic stability** but have **supply chains** that are **vulnerable** to **disruption**.
2. These include **elements** like neodymium, dysprosium, and terbium, which are crucial for **defense technologies** and **green energy solutions**.

Why are they called rare/critical?

1. Despite their name, REEs are **relatively abundant** in the Earth's crust.
2. However, they are termed "**rare**" because they are **rarely found** in **concentrated deposits**, making extraction challenging and costly.
3. They are considered "**critical**" due to their **importance in high-tech and defense industries** and the geopolitical risks associated with their supply.

Positive and negative uses of REEs

Positive Uses:

1. **Green Technologies:** Used in EVs, wind turbines, and energy-efficient lighting.
2. **Medical Applications:** Essential in MRI machines and cancer treatments.
3. **Defense Systems:** Vital for radar, guidance systems, and advanced weaponry.

Negative Uses:

1. **Environmental Impact:** Mining and processing can lead to radioactive waste and pollution.
2. **Geopolitical Tensions:** Control over REE supply can lead to trade disputes and strategic leverage.

Which countries have control on these REE and why?

1. **China** dominates the global REE supply, accounting for **over 90% of processing and magnet production**. It uses this **monopoly** as a bargaining chip in trade disputes.
2. **Other** significant **producers** include **Australia**, the **United States**, and **India**.
3. Control over REEs allows countries to **influence global supply chains** and **maintain strategic advantages** in technology and defense sectors.

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How has China created a new blockade or quiet war against the USA through REE?

1. **In October 2025**, China expanded its **export controls** on **12 REEs and related technologies**, requiring licenses for exports and banning shipments to foreign military users.
2. This move is seen as a **strategic response** to U.S. policies and aims to assert China's dominance in the REE supply chain

What is India's role in the geopolitical triangle of China-India-USA?

1. The geopolitical triangle involves **China** maintaining REE **monopoly** and using export controls as leverage, the **US** seeking to **reduce dependence** on China through **alliances** (e.g., India, Japan, Australia – Quad countries), and **India** positioned as a **key intermediary** with significant REE reserves.

2. India holds **approximately 8.52 million tonnes of REEs,** making it a strategically important player in global supply chains but needs to develop **domestic processing capabilities** and **diversify imports** to lessen reliance on Chinese REEs.
3. A **stable REE supply is needed** as India aims to expand its electric vehicle production and strengthen defense technology development.

What conditions similar to Wassenaar have been put forth by China for India even when China is not itself a member of Wassenaar?

China, though **not a member of the Wassenaar Arrangement** (which governs dual-use technology exports), is implementing similar export control rules for Rare Earth Elements (REEs) and magnets to **regulate end-use and prevent strategic diversion,** particularly to the USA.

Conditions China Has Requested from India:

1. REE magnets supplied by India should be **used within India** and not re-exported.
2. India must **guarantee that exports do not reach the United States**, directly or indirectly.
3. India is expected to issue **assurances that REE products will not be used in Weapons of Mass Destruction**.
4. **End-User Certification (EUC):** Firms must issue **certificates confirming peaceful, approved use** of REE products.

India's Current Position:

1. **Has not agreed** to China's re-export conditions yet.
2. Indian firms issue **End User Certificates (EUCs)** to confirm **peaceful usage**.
3. **Impact on EV Sector:**
   a. Two-wheeler EV makers are **adapting using lighter magnets**.
   b. Larger EVs face **performance losses due to restricted access to high-quality REE magnets**.

The situation shows **China using REE supply as geopolitical leverage**. India must balance **strategic autonomy**, **domestic EV ambitions**, and **international trade commitments**.

How does this affect India's EV ambitions, defense sector, and global diplomacy?

1. **EV Sector:** Limited access to REEs hampers the production of EVs and related infrastructure.
2. **Defense Sector:** Restrictions on REE exports affect the development of advanced defense technologies.
3. **Global Diplomacy:** India's strategic decisions regarding REE exports influence its relations with both China and the United States.

Can India break free from this rare earth monopoly?

India is actively working to **develop domestic processing capabilities** and has signed agreements with countries like **Australia**, **Argentina**, and **Zambia** to secure alternative REE supplies. However, **challenges remain** in scaling up **infrastructure** and **technology** to achieve **self-reliance**.

Further Challenges and Way Forward

Challenges	Way Forward
Technological Gaps: India lacks advanced REE processing technologies.	**Strengthen International Partnerships:** Collaborate with countries possessing REE resources to secure supply chains.
Environmental Concerns: REE mining and processing have significant environmental impacts.	**Invest in Research and Development:** Focus on developing sustainable and efficient REE processing technologies.
Geopolitical Tensions: Strained relations with China affect REE supply chains.	**Enhance Domestic Capabilities:** Invest in infrastructure and capacity building to process REEs domestically. Also, create strategic mineral reserves.

9. Managing Heavy Rainfall in Urban Areas

Context

1. Traditionally, excess rainfall was seen as a sign of abundance, but in recent times, **climate change has emerged as a major challenge** that has influenced rainfall patterns.

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2. **Rainfall has become erratic, short, and intense**, leading to **flooding, waterlogging, and widespread disruption**.
3. In **2025**, the **northeast monsoon arrived early in Tamil Nadu**, posing challenges related to **urban flooding, agricultural losses, and infrastructure management**.

About Northeast Monsoon and Its Importance for India

1. The **Northeast Monsoon (October-December)**, also known as the **retreating monsoon or winter monsoon**, occurs when winds reverse direction after the southwest monsoon withdraws.
2. These **winds blow from land to sea**, picking up moisture from the Bay of Bengal and bringing rainfall mainly to **southeastern India**, especially **Tamil Nadu, Puducherry, coastal Andhra Pradesh, and parts of Kerala**.
3. Tamil Nadu receives **nearly 48-50% of its annual rainfall** during this season, making it the **main rainy season** for the state.
4. The rainfall supports **rabi crop cultivation**, **drinking water supply**, **groundwater recharge**, and **reservoir filling** in southern India.
5. It also helps maintain **hydropower generation**, **livelihoods of farmers**, and **ecosystem balance** in the rainfed regions.

What challenges does excess rainfall pose and what can be done to mitigate it?

Challenges	Way Forward
1. Urban flooding and infrastructure strain: In cities, widespread concretisation prevents rainwater absorption. This causes rapid surface runoff, overwhelming drainage networks and leading to flash floods, traffic disruptions, and property damage. Power cuts are often imposed as a safety measure during such events.	Develop **sponge cities** with permeable pavements, green roofs, and urban wetlands to enhance rainwater absorption. Upgrade stormwater drains, ensure regular desilting, and integrate **urban flood management plans** with real-time rainfall forecasting systems.
2. Sewage overflow and water contamination: Excess rainfall can cause sewage systems to overflow, discharging untreated wastewater into streets and waterbodies. This leads to severe **health hazards**, **water pollution**, and the spread of infections.	Establish **separate networks for sewage and stormwater**, improve treatment capacity in wastewater plants, and promote **nature-based solutions** such as constructed wetlands for filtering runoff.
3. Agricultural waterlogging and soil degradation: Prolonged rainfall leads to **waterlogged soils**, suffocating plant roots and washing away seeds and topsoil. This depletes soil nutrients and reduces fertility, threatening long-term productivity.	Promote **raised-bed and contour farming**, improve **drainage channels** in farmlands, and incentivise the use of **climate-resilient and flood-tolerant crop varieties**. Encourage **soil health restoration** through organic manure and mulching.
4. Crop diseases and pest outbreaks: Excess moisture favours the spread of **fungal diseases** and pests, which destroy crops and lower yields, leading to financial stress for farmers.	Expand **agro-advisory services** with timely pest and disease alerts, strengthen **crop insurance coverage**, and promote **integrated pest management (IPM)** practices.
5. Pollution of waterbodies: Heavy runoff washes **fertilisers, pesticides, and agrochemical residues** into rivers, reservoirs, and lakes, degrading water quality and harming aquatic ecosystems.	Adopt **buffer zones** and **vegetative barriers** along fields and waterbodies to trap sediments. Encourage **judicious fertiliser use** and promote **organic and sustainable farming practices**.
6. Spread of vector-borne and zoonotic diseases: Stagnant water after heavy rainfall becomes a breeding ground for **mosquitoes and pathogens**, increasing the risk of malaria, dengue, and other infectious diseases.	Conduct regular **drainage clearance and anti-larval operations**, enhance **public health surveillance**, and ensure **rapid medical response** in vulnerable areas.

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7. Damage to infrastructure and building foundations: A persistently high **water table** weakens soil stability, damaging roads, foundations, and basements. Saturated soil can cause cracks, leaks, and even collapse of structures over time.	Use **proper soil compaction, waterproofing, and foundation design standards** in flood-prone regions. Introduce **zoning regulations** to restrict construction in low-lying or flood-risk areas.
8. Economic and social losses: Flooding disrupts economic activity, damages property, and displaces people. It imposes heavy costs on recovery and rebuilding and takes a psychological toll on affected communities.	Implement **comprehensive disaster risk reduction (DRR) plans**, strengthen **early warning and evacuation systems**, and promote **community-based resilience programs** with livelihood diversification and post-disaster mental health support.

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Why is Tamil Nadu Particularly Vulnerable?

1. **Dual Monsoon Impact:** Tamil Nadu and Kerala receive rain from different systems: the **Southwest Monsoon (Kerala)** and **Northeast Monsoon (Tamil Nadu)**. When both occur simultaneously, it leads to **heavy and overlapping rainfall**, worsening flood risks.
2. **Mullaperiyar Dam Factor:** The **Mullaperiyar Dam**, though located in Kerala, is **operated by Tamil Nadu**. Hence, heavy rainfall in Kerala's catchment areas directly affects **Tamil Nadu's river systems**.
3. **Simultaneous Inflows:** During intense rains, Tamil Nadu must open the dam's shutters to maintain safety. Released water flows **towards both States**; flooding **Kerala's Idukki** and increasing **inflow to Tamil Nadu's Vaigai Dam**, already filled by monsoon rains.
4. **On-Ground Situation:** Currently, all **13 shutters of the Mullaperiyar Dam** are open, releasing thousands of cusecs of water to manage inflow. As a result, **farmlands and residential areas in Theni district** have been submerged, even as the region continues to face heavy monsoon rain.
5. **Overall Concern:** Tamil Nadu faces **dual challenges:** managing its own monsoon rainfall and **inflows from Kerala**. This calls for **better inter-State coordination**, **real-time water management**, and a **shift from the "excess is good" mindset**.

Conclusion

The early and intense northeast monsoon in Tamil Nadu, worsened by inflows from Kerala via the Mullaperiyar Dam, exposes the state to floods, agricultural losses, infrastructure damage, and health risks. Effective mitigation requires urban planning, resilient agriculture, inter-state water management, and a shift from the "excess rainfall is good" mindset.

10. Wildlife Protection (Kerala Amendment) Bill, 2025

Context

Kerala's amendment to the Wildlife (Protection) Act, 1972 was driven by escalating **human-wildlife conflicts**, especially **wild boar attacks**, and prolonged **inaction from the Centre** in declaring them **vermin**, prompting the State to seek **independent powers** for timely intervention.

Key Features of the Amendment

1. **Empowerment of the State:** Enables Kerala to declare a Schedule II animal as 'vermin', temporarily removing its protection in specific areas and time periods.
2. **Powers to Chief Wildlife Warden:** Authorizes the Warden to kill, tranquillise, capture, or relocate animals that have severely injured humans.
3. **Departure from the Central Act:** Unlike the Central Act where only the Union can declare vermin (Section 62), the amendment transfers this power to the State.
4. **Scope and limitations:** While the Bill increases state autonomy, it must still adhere to conservation safeguards and constitutional checks under Article 254(2).

Related Federal and Constitutional Provisions

1. **Concurrent List Placement:** Wildlife is in the **Concurrent List**, enabling both the Centre and States to frame laws on the subject.

2. **Article 254(2) – Presidential Assent:** As Kerala's amendment may conflict with the Central Act, it needs **Presidential assent** to become operative.
3. **Centre-State Tension:** The amendment underscores Kerala's dissatisfaction with excessive central control and its push for **greater federal flexibility** in addressing local ecological challenges.

Environmental Governance Implications

1. **Shift in governance:** The amendment signals a **decentralization** of wildlife management from the Centre to the State.
2. **State role in biodiversity conservation:** States gain a stronger hand in aligning wildlife management with local socio-ecological conditions.
3. **Need for ecological balance:** Devolution must still preserve *national conservation baselines* and international biodiversity commitments.

Comparative Perspective

1. **Other Indian States:** States like **Himachal Pradesh** and **Uttarakhand** have also sought vermin status for certain species but did so through the Central route.
2. **International parallels:** Some countries practice **decentralized wildlife governance**, allowing local communities controlled rights for conflict management under scientific oversight.

About the Wildlife Protection Act, 1972

1. **Overview:** Landmark Central legislation protecting wild animals, birds, plants through **Schedules**, **protected areas**, and **hunting regulations**.
2. **Centralized Control:** Powers like declaring vermin, creating sanctuaries, and enforcing penalties are mainly with the **Union Government**, limiting state flexibility.
3. **Key Provisions of 1972 Act:**
    a. **Definition of Wildlife:** Includes **terrestrial and aquatic animals**, **plants**, **insects**, **fish**, and **vegetation forming part of habitats**.
    b. **Wildlife Advisory Boards:** State-level boards advise on management of **Sanctuaries** and **National Parks, conservation policies** for wildlife and plants and **harmonizing tribal/ community needs** with conservation goals
    c. **Schedules of the WPA:** Flora and fauna classified into six Schedules:
        i. **Schedule I & II:** Endangered species; absolute protection; highest penalties
        ii. **Schedule III & IV:** Species not endangered; lesser protection
        iii. **Schedule V:** Vermin species that can be hunted with license. Example: Crows, Rats.
        iv. **Schedule VI:** Regulates cultivation and trade of certain plants.
4. **Wildlife Protection (Amendment) Act, 2021:**
    a. **CITES Implementation:** Expanded protection for species under international trade regulations.
    b. **Rationalized Schedules:** Reduced from six to four for clarity and better enforcement:
        i. **Schedule I:** Species with highest protection
        ii. **Schedule II:** Species with slightly lower risk but still protected
        iii. **Schedule III:** Protected plants; trade and cultivation regulated to prevent depletion.
        iv. **Schedule IV:** CITES-listed species under international trade restrictions.
    c. **Regulation of Invasive Alien Species:** The Central government can prohibit or control invasive species affecting native biodiversity.
    d. **Voluntary Surrender:** Captive animals and trophies can be surrendered without compensation.

Challenges and Way Forward

Challenges	Way Forward / Solutions
Risk of indiscriminate or unethical culling: Transferring vermin-declaration powers could normalize lethal responses without scientific or ethical scrutiny, potentially driven by political or social pressures.	**Scientific and ethical protocols**: Apply data-driven thresholds, ecological assessment, and ethical review before declaring species as vermin; ensure decisions are transparent and accountable.

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Ecological impact and biodiversity loss: Indiscriminate killing can disrupt ecosystems and threaten local biodiversity.	**Non-lethal alternatives**: Prioritize fencing, relocation, sterilization, habitat management, and coexistence strategies before lethal measures.
Legal and constitutional challenges: Amendment may face judicial scrutiny under **Article 254** for repugnancy with the Central Act; courts will examine if conservation duties are preserved.	**Legal alignment and safeguards**: Ensure state rules comply with constitutional provisions, national conservation norms, and maintain baseline protections while exercising autonomy.
Implementation, monitoring, and coordination challenges: Risk of misuse, arbitrary actions, lack of scientific validation, and poor collaboration between forest departments, local bodies, and law enforcement.	**Strengthen monitoring, capacity, and coordination**: Establish data-driven tracking, reporting mechanisms, enforce ethical standards, and improve interdepartmental communication and training.
Community disengagement: Limited participation from local communities may reduce effectiveness of conflict mitigation measures.	**Promote community involvement**: Engage local communities in wildlife monitoring, awareness campaigns, and coexistence programs to ensure sustainable solutions.

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11. Saranda Forest Sanctuary Case

Context

The Supreme Court **(October 2025)** directed the Jharkhand government to notify **314 sq km** of the verdant **Sal Forests of Saranda** as a **wildlife sanctuary**, reviving a long-ignored NGT order to protect its biodiversity.

About Saranda Forests

1. **Location:** West Singhbhum district, Jharkhand; bordering Odisha.
2. **Size:** 856 sq km total forest area.
3. **Meaning:** Saranda translates to "seven hundred hills" in local Ho language.
4. **Ecological Importance:**
   a. Home to some of India's **finest Sal (Shorea robusta) forests**.
   b. Houses **elephants**, **four-horned antelopes**, **sloth bears, tigers** (recently sighted), and **diverse flora and fauna.**
   c. Functions as an important **elephant corridor** and carbon sink.
5. **Wildlife Institute of India (WII) report: Anthropogenic pressures** have fragmented the forest habitat. **2016 report** highlighted reduction in mammals, butterflies and birds.
6. **Resources:** Accounts for **around 26% of iron ore reserves** of India. **Justice MB Shah Commission** highlighted **illegal mining** of these ores leading to wildlife and biodiversity loss.

NGT Ruling (2020)

1. A petitioner approached the **National Green Tribunal (NGT)** seeking **"eco-sensitive zone"** status for Saranda.
2. NGT held that Saranda should be deemed a **wildlife sanctuary** under the **Wildlife Protection Act, 1972**, as it was already notified as a **"game sanctuary"** in **1968**.
3. It directed Jharkhand to consider the area for **sanctuary notification** and submit **compliance**.

Why the NGT Ruling Was Ignored

1. The Jharkhand government **delayed** action despite repeated SC reminders (2021, 2022).
2. The state argued that **mining operations** (generating a good amount of revenue) and **tribal livelihood concerns** (as the area is under 5th schedule) made sanctuary notification difficult.

Reason and Importance of Sanctuary Status

1. **Why Given Sanctuary Status:**
   a. To ensure **legal protection of biodiversity** under the Wildlife Protection Act, 1972.

b. To curb unregulated **iron ore mining** and **deforestation** threatening species diversity.

c. To comply with **judicial and environmental directives** pending since early 2000s.

2. **Importance:**

a. Provides a **statutory safeguard**, prohibiting industrial exploitation and mining.

b. Promotes **eco-tourism and sustainable livelihoods** through conservation-linked development.

c. Helps India meet its **Convention on Biological Diversity** and **SDG-15 (Life on Land)** targets.

Impact on Tribal Rights

1. The region falls under the **Fifth Schedule**; inhabited by **Ho, Munda, and other Adivasi communities**.
2. Sanctuary notification may **restrict access to forest resources**, criminalizing traditional sustenance activities.
3. Could violate **Forest Rights Act (2006)** and **PESA Act (1996)** if tribal consultation is ignored.
4. However, with proper implementation, **co-managed conservation models** can safeguard both ecology and livelihood.

Challenges and Way Forward

Challenges	Way Forward
1. Conflict between mining revenue and conservation	Conduct scientific **carrying capacity assessment** and phase-out mining from critical zones
2. Threat to tribal livelihoods and displacement risk	Ensure **Gram Sabha consent** under FRA and promote community-based forest management
3. Illegal mining and encroachment	Strengthen **forest surveillance** and inter-agency coordination
4. Fragmented elephant corridors and biodiversity loss	Create **eco-sensitive buffer zones** and wildlife corridors
5. Weak implementation and monitoring	Establish **independent ecological monitoring committee** with civil society participation
6. Lack of sustainable livelihood alternatives	Introduce **eco-tourism, NTFP value chains, and skill development** for locals

12. Green Crackers

Why in the News?

1. The **Supreme Court (SC)** has indicated a **partial relaxation of the firecracker ban** in Delhi-NCR on a **trial basis** for 2025.
2. This decision aims to **balance public health, festive traditions, and the livelihoods** of workers in the firecracker industry, following a **decade-long legal struggle** over air pollution caused by firecrackers.

Historical and Legal Background

1. **2015:** Petition by three infants seeking protection from **toxic air in Delhi**.
2. **2018 (SC Arjun Gopal Judgment):** Ban on conventional firecrackers; only **green crackers** allowed with fixed time slots.
3. **2020 (NGT):** Imposed an **absolute ban** during Diwali in Delhi-NCR and other highly polluted cities.
4. **2021–2023: Year-round bans** issued by Delhi Pollution Control Committee (DPCC).
5. **2024–2025:** SC noted **short-term bans may be ineffective**, permitted certified green cracker production but restricted their sale until proper verification.

What Are Green Crackers?

1. **Developed by CSIR-NEERI** to reduce air pollution and noise during festivals.
2. **Pollutant reduction:** Release **30–40% fewer harmful particles** than conventional firecrackers.
3. **Non-toxic chemicals:** Avoid **barium nitrate, arsenic, and lead**, using alternative formulations.

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4. **Key variants (2018):**
   a. **SWAS (Safe Water Releaser)**
   b. **STAR (Safe Thermite Cracker)**
   c. **SAFAL (Safe Minimal Aluminium)**
5. **Features:** Lower **noise levels (≤120 dB)**, smaller shells, **dust-suppressant additives**, traceable via **QR code** and **green logo**.
6. Green crackers are **less harmful but not pollution-free**. Studies indicate they still emit **ultra-fine particles**, which can be more dangerous than PM2.5 and PM10.

Supreme Court Directions

1. Only **certified green crackers** may be produced and sold by approved manufacturers.
2. The sale and use of green crackers is **limited to designated points** and strictly controlled **dates and timings** around Diwali.
3. **Toxic chemicals** remain strictly prohibited, and **series crackers ('laris')** cannot be manufactured or sold.
4. **Online sales of firecrackers are banned**, and violators will face **penalties including license cancellation**.
5. **Police and pollution control officials** will monitor sale points, verify authenticity, and collect samples for testing.
6. The relaxation is **trial-based**, with air quality monitoring from **October 14–25, 2025** to evaluate environmental impact.

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Constitutional and Legal Relevance

1. **Article 21:** Right to **clean air** and a healthy environment.
2. **Article 19(1)(g):** Right to **carry on a profession or occupation**, protecting firecracker workers' livelihoods.
3. **Article 51A(f):** Duty of citizens to **protect the environment and cultural heritage**.
4. Upholds **environmental protection**, **economic rights**, and **cultural freedoms** in a balanced manner.

Challenges and Way Forward

Challenges	Way Forward
Despite bans, **air pollution** during Diwali remains **severe** due to continued bursting of conventional firecrackers.	Strictly enforce **regulated sale and usage of green crackers**, and monitor air quality in real time to ensure compliance.
Smuggling and **illegal sale** of conventional firecrackers continues in the NCR.	Establish **designated sale points**, enforce **patrolling**, ban online sales, and implement **strict penalties** for violations.
Verification of green crackers is **weak** due to the lack of testing labs and inspection facilities.	Build **robust testing and inspection infrastructure**, enforce **QR code verification**, and prevent counterfeiting to ensure authenticity.
Firecracker industry **workers** face **economic hardship** due to bans and limited sales.	Support **certified green cracker manufacturing**, provide **skill development**, and offer **financial incentives** to maintain livelihoods.
The general public has **limited awareness** about safe usage and environmental impact.	Conduct **public awareness campaigns** highlighting pollution risks, safe usage practices, and environmental responsibility.
Lack of coordination among NCR states (Delhi, Haryana, Uttar Pradesh, Rajasthan) hampers enforcement.	Strengthen **inter-state collaboration** for uniform regulation and effective monitoring across the NCR region.
Even green crackers emit **ultra-fine particles**, posing health risks.	Promote **further research**, establish stricter emission norms, and issue **public health advisories** for vulnerable groups.

SOCIETY AND CULTURE

1. World Mental Health Day 2025

Context

Mental health has become a **critical public policy issue** in India, driven by rising suicide rates, post-pandemic stress, and increasing awareness around emotional well-being. Its urgency is underscored by **World Mental Health Day 2025** (**10 October**), themed **"Access to Services: Mental Health in Catastrophes and Emergencies"**.

About Mental Health

1. **Definition (WHO):** "Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn and work well, and contribute to their community."
2. Mental health goes **beyond absence of illness**, it enables **productivity**, **social participation**, and **resilience**. It influences physical health, education, family stability, and national development.

Historical and Constitutional Context

1. **Ancient India:**
   a. ***Ayurveda* and *Yoga*** viewed health as harmony of body, mind, and spirit **(*Manas–Sharira–Atman*).**
   b. Emphasised **lifestyle**, **mindfulness**, and **self-regulation** - early forms of psychosocial therapy.
2. **Global Evolution:**
   a. **Post-World War trauma studies, 2004 Tsunami, and COVID-19** highlighted the need for psychological first aid and community-based interventions.
3. **Constitutional Backing:**
   a. **Article 21:** Right to life includes right to mental health (reaffirmed in ***Sukdeb Saha vs State of Andhra Pradesh*).**
   b. **Article 47 (DPSP):** Duty of the State to improve public health.
   c. Judicial interpretations have made mental health an enforceable right.

Current Status in India

1. **Prevalence and Statistics**
   a. Nearly **230 million Indians** live with mental disorders (like depression, anxiety etc.)
   b. **Suicides (NCRB 2023):** Around **1.7 lakh cases** with family problems (~32%) as lead cause (in which around 73% are men). Suicide rate higher in **urban India**. **Farmers** continue to face distress (~6.3% of total suicides).
2. **Treatment Gap and Human Resource Deficit**
   a. Over **four in five persons** with severe illness receive **no formal care** due to stigma, the cost, and a severe shortage of professionals.
   b. **Workforce: 0.75 psychiatrists per 1 lakh** people, far **below WHO minimum** of **1.7** and **ideal standards** of **3**. Also, only **0.12 psychologists** per 1 lakh people are available.
   c. **Lifetime Prevalence** of mental disorders in India: 13.7%.
   d. **Rehabilitation** (vital for recovery and social integration) meets **<15% of identified needs.**
3. **Inequities**
   a. **Urban-Rural Divide:** Urban areas have better facilities; rural areas lack professionals and medicines.
   b. **Vulnerable Groups:**
      i. **Children & adolescents:** exposed to academic pressure and **trauma.**
      ii. **Women & homemakers:** face domestic violence and isolation.
      iii. **Farmers:** suffer economic stress and social neglect.
      iv. **LGBTQ+ & disabled groups:** face stigma and exclusion.
4. **Behavioural Trends:** Growing reliance on **AI chatbots and online apps** due to stigma and lack of safe human spaces. Reflects institutional failure, not technological trust.

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Government Initiatives and Legal Framework

1. **Legal Provisions**
   a. **Mental Healthcare Act, 2017:** Ensures affordable, accessible mental health care and insurance parity. Rights-based approach; decriminalised suicide.
   b. **National Suicide Prevention Strategy (2022):** aims to **reduce suicide mortality by 10% by 2030** through a **multi-sectoral approach** involving early identification, crisis helplines, responsible media reporting, and integration of mental health services across healthcare levels.
2. **National Mental Health Programme (NMHP)** and **District Mental Health Programme (DMHP):** Implemented in 767 districts, it offers decentralized mental health services (e.g., Tele-MANAS helplines), though uneven execution across states persists due to resource and manpower shortages.
3. **Digital & School Initiatives**
   a. **Tele-MANAS:** 24×7 helpline; over 20 lakh tele-counselling sessions conducted.
   b. **Manodarpan:** School-based psycho-social support covering 11 crore students.
   c. **Ayushman Bharat Health & Wellness Centres:** Integration of basic mental health screening and care.
4. **Emergency & Community Response:** India developed **Psychological First Aid protocols** after the 2004 Tsunami, deployed **Institute of Mental Health (IMH) teams for trauma counselling during Cyclone Gaja (2018)**, and now follows **WHO and IASC** (UN Body for humanitarian assistance) **guidelines** to ensure **psychosocial support is integrated into all disaster and humanitarian responses.**

Mental Health and Society

1. **Economic Impact:** Untreated disorders may cost **$1 trillion in GDP loss by 2030**; employers lose ₹1.1 lakh crore annually due to absenteeism and burnout.
2. **Social Impact:** Mental illness fuels **domestic violence, substance abuse, and crime**, and erodes family and community ties.
3. **Youth Crisis:** Suicide is the **leading cause of death among 15–29-year-olds** in India.
4. **Education & Workplace:** Rising stress in coaching hubs and corporates demands institutional counselling.
5. **Media & Social Media:** Can destigmatize mental health if used responsibly, but also spreads misinformation and toxic comparison culture.

Other Associated Dimensions

1. **Ethical Dimension**
   a. Mental health challenges test the ethical foundations of public service as it demands **empathy, dignity, and respect for autonomy**, especially in vulnerable populations.
   b. Ethical dilemmas arise in **involuntary treatment**, **privacy**, and **informed consent**, particularly in cases involving severe mental illness.
   c. **Emotional intelligence** is vital for administrators and public servants to handle sensitive situations with compassion and discretion.
2. **Role of Civil Society & NGOs**
   a. NGOs play a pivotal role in:
      i. **Destigmatizing mental illness** through campaigns and storytelling
      ii. Providing **helplines**, **tele-counselling**, and **community therapy**
      iii. Reaching **rural and underserved areas** where state capacity is limited
   b. Their work complements government efforts and fosters grassroots mental health awareness.
3. **Mental Health in Armed Forces & Police**
   a. Personnel in armed forces and police face **high stress**, **PTSD** (Post-Traumatic Stress Disorder), and **burnout**, often leading to elevated suicide rates. Institutional support is lacking
   b. There's a need for **dedicated counselling units, peer support systems and mental health screening** during recruitment and service.
   c. Mental resilience is key to operational effectiveness and humane law enforcement.

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4. **Mental Health in Judicial and Prison Systems**
   a. A significant number of **undertrials and convicts** suffer from untreated mental illnesses.
   b. Challenges include: Lack of **forensic psychiatric care,** absence of **rehabilitation and reintegration programs and** overcrowded prisons with no mental health infrastructure
   c. Judicial reforms must integrate **mental health assessments**, **diversion programs**, and **post-release support**.
5. **Climate Change and Mental Health**
   a. Climate disasters trigger **eco-anxiety**, **displacement trauma**, and **long-term psychological stress**.
   b. Vulnerable groups (e.g., children, farmers, coastal communities) are disproportionately affected.
   c. Mental health must be integrated into **disaster resilience planning**, aligned with **SDG 3 (Good Health)** and **SDG 13 (Climate Action)**.

Global Best Practices

1. **Community-based care & task sharing:** Nations such as the UK, Australia and Canada have scaled community mental-health teams and trained mid-level providers who deliver a substantial share of counselling and psychosocial interventions.
2. **Robust financing and surveillance:** Many high-income countries devote a higher share of **health budgets to mental health (often 8%–10%)** and maintain data systems to monitor service cascades and outcomes.
3. **WHO Mental Health Action Plan** and community-based psychosocial support models offer internationally agreed standards for scaling up care, particularly in emergencies.

Recognising Early Signs of Mental Health Issues

Mental health disorders are **diverse and complex**, but certain **behavioural and emotional changes** can signal concern:

1. **Persistent anxiety or worry:** Constant fear or tension affecting daily life.
2. **Depression or prolonged unhappiness:** Sadness, irritability, loss of interest, frequent tearfulness.
3. **Emotional outbursts:** Intense anger or distress beyond normal reactions.
4. **Sleep disturbances:** Sleeping too much or too little.
5. **Weight or appetite changes:** Sudden gain or loss indicating depression or eating disorders.
6. **Social withdrawal:** Reduced interaction with family, friends, or colleagues.
7. **Neglect of self-care:** Ignoring hygiene or daily routines.
8. **Repetitive or abnormal behaviours:** Hand-washing, checking, or other compulsions (OCD).
9. **Self-harm or suicidal thoughts:** Serious warning signs of underlying mental illness.
10. **Substance misuse:** Problematic alcohol or drug use, often linked to mental health conditions.

Early recognition and timely support are crucial, if something seems off, **talking to a professional or seeking help is essential**.

Challenges and Way Forward

Challenges	Way Forward / Solutions
Stigma & social taboos: Many see mental illness as weakness; prevents seeking help	Run **anti-stigma campaigns**, share **recovery stories**, and spread **mental health awareness** in communities
Shortage of professionals: Psychiatrists, psychologists, nurses mostly in urban hospitals	Achieve **3–5 mental health professionals per 1,00,000 people** in 5 years; train **mid-level providers** supervised by specialists
Low funding & poor use of funds: Only ~1.05% of health budget; some allocated funds unused	**Increase mental health budget to 5%**, create **cross-ministerial task force** with dedicated funding and accountability
Fragmented services: DMHP and others face gaps, medicine shortages, poor rehabilitation	**Integrate mental health into primary care and Ayushman Bharat centres**; ensure medicine supply, screening, and referrals
Weak insurance & primary care linkage: Limits access and financial protection	Strengthen **insurance coverage** and connect mental health with **primary healthcare services**

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Schools & workplaces lack services: Counselling is token or absent	Provide **full-time counsellors or tele-links** in schools, colleges, hospitals, and agrarian blocks; expand **Manodarpan** programmes
Digital tools unregulated: Apps & AI lack privacy, crisis help, quality checks	**Regulate apps & AI platforms** with privacy rules, disclaimers, crisis referrals; use digital tools to **support, not replace**, human care
Poor data & monitoring: No real-time tracking of treatment	Adopt **ICD-11 diagnostic standards**, track care from **screening → treatment → follow-up → recovery**, and fund mental health research
Mental health often missing in emergencies: Disasters lack psychosocial support	Include **mental health in all disaster planning**: psychological first aid, long-term support, child-focused services (WHO/IASC guidelines)
High-risk groups underserved: Farmers, students, homemakers, abused survivors, refugees	Targeted support combining **social protection and mental health**: farmers get counselling + debt relief, students get continuous support, homemakers get community therapy, survivors & refugees get outreach programs

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2. AI in Education

Why in the News?

1. OpenAI, the U.S.-based company behind ChatGPT, has opened its first office in India, highlighting India's growing role in global AI.
2. The Government of India launched the **India AI Mission** to build a trusted and inclusive ecosystem, especially in education.
3. The rising use of AI by teachers and students in classrooms has raised important ethical questions about its impact on teaching and learning.

Key Highlights

1. **What is Artificial Intelligence (AI)?**
   a. AI is the **ability of computer systems to perform tasks** that usually **require human intelligence**, such as problem-solving, language understanding, and pattern recognition.
   b. It is divided into **Narrow AI** (designed for specific tasks, like ChatGPT) and **General AI** (human-level intelligence, still theoretical).
2. **Entry of Global AI Giants into India**
   a. The year began with OpenAI announcing its first India office.
   b. This was followed by news of earlier investments: in 2023, **NVIDIA partnered with Reliance**, and companies like **Google and Microsoft** had already put in large-scale investments.
   c. These moves showed that India was becoming a **global hub for AI innovation**.
3. **AI in the Classroom – Rising Adoption**
   a. Reports highlighted that **around 70% of school teachers in India are now tech-savvy**.
   b. Teachers increasingly use AI to design lessons, prepare content, and improve classroom delivery.
   c. However, surveys like the National Sample Survey pointed out a **digital divide**: while internet usage is widespread, many students and teachers do not have the skills or quality access to use AI meaningfully.
4. **Philosophical and Ethical Concerns**
   a. Education is not only about passing information; it is about **dialogue, empathy, and critical understanding**.
   b. Thinkers such as **Rabindranath Tagore** and **Bell Hooks** always stressed that teaching must be a **humanistic experience** that builds trust and creativity.
   c. The growing use of AI risks reducing education to a **mechanical, information-driven activity**, undermining the human connection between teacher and student.

5. **India AI Mission – The Roadmap**
   a. To address the challenges arising out of rapid AI adoption, the government launched the **India AI Mission**.
   b. It also aimed at making India a **leader in AI**.
   c. Its pillars include:
      i. **Centres of Excellence (CoE):** Specialised centres for AI research in education.
      ii. **India AI Compute Capacity:** Infrastructure to support large-scale AI innovation (cloud-based tools).
      iii. **India AI Future Skills:** Training teachers and students to use AI responsibly.
   d. The mission also emphasises **professional training for teachers**, focusing not only on technical skills but also on ethics, creativity, and critical thinking.
   e. If implemented properly, the mission can ensure AI reduces inequality rather than worsening the digital divide.

Implications

1. **Economic Growth:** AI adoption can bring global investments and make India a hub for innovation.
2. **Educational Transformation:** AI can help personalise teaching and make classrooms more engaging.
3. **Equity Concerns:** Without careful planning, AI could widen the gap between privileged and marginalised students.
4. **Ethical Risks:** Overuse of AI may undermine creativity, empathy, and trust in classrooms.
5. **Policy Challenge:** The government must ensure AI adoption is ethical, inclusive, and focused on long-term learning outcomes.

Challenges and Way Forward

Challenges	Way Forward
Over-reliance on AI **reduces teacher-student dialogue**	Use AI only as a support tool; **promote blended learning**
Digital divide excludes weaker sections	Provide **affordable internet, devices,** and **digital literacy**
Teachers lack ethical training	Regular **in-service training** on responsible use of AI
Student misuse (plagiarism, exam use)	**Guidelines, awareness, and AI literacy modules** in schools
Misunderstanding of "smart pedagogy"	Redefine teaching quality to **focus on creativity and critical thinking**

3. Industrial Accidents & Erosion of Workers' Rights

Context

1. In **2025**, major accidents, **Sigachi Industries chemical reactor burst** (Telangana, 40 deaths), **Gokulesh Fireworks explosion** (Sivakasi, 8 deaths), and **Ennore Thermal Power** coal-handling **plant collapse** (Chennai, 9 deaths), highlight **chronic lapses** in **workplace safety**.
2. India accounts for **25% of global fatal workplace accidents**, which is also likely underreported among **informal and contract workers.**

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What Are Industrial Accidents?

Industrial accidents refer to **unexpected, harmful events** in workplaces, such as explosions, structural collapses, or chemical leaks, that result in injury, death, or environmental damage. These are **often preventable** and **stem from systemic failures** in safety protocols.

Why Do Industrial Accidents Occur?

Industrial accidents are **not inevitable**. They occur due to:

1. **Negligence by employers**: Outdated machinery, ignored maintenance, and lack of safety systems.
2. **Poor workplace design** and absence of alarms or emergency response.
3. **Dismissal of worker complaints** and lack of trained safety officers.
4. **Unregistered labor**: No entry/exit records, no accountability.
5. **Faulty infrastructure**: As seen in Ennore, where poor scaffolding and anchoring likely caused the collapse.

The ILO emphasizes that even when employers cite **"human error,"** the root causes often lie in exploitative practices, **long hours, low wages, and excessive pressure**.

Impact of Industrial Accidents

1. **Human cost**: Deaths, injuries, trauma.
2. **Economic loss**: Productivity disruption, compensation payouts.
3. **Social fallout**: Families lose breadwinners; informal workers remain invisible.
4. **Legal vacuum**: Employers rarely face criminal liability.

Legal Framework in India

India's labor laws have evolved over time:

1. **Factories Act:**
   a. **1881:** First law in India to regulate factory operations, machinery safety, and basic working conditions.
   b. **1948 (Post-Independence):** Cornerstone of labour law; governed licensing, machinery maintenance, working hours, rest breaks, and welfare facilities like canteens and crèches.
   c. **1976 & 1987 Amendments:** Strengthened safety norms; 1987 amendment was a direct response to the **Bhopal Gas Tragedy**, improving inspection and compliance mechanisms.
   d. **Limitations:** Weak enforcement where inspections could be bribed, false records were maintained and violations were ignored.
2. **Workmen's Compensation Act, 1923 & Employees' State Insurance Act, 1948**
   a. Provide financial relief for workplace injuries or deaths, including loss of earnings.
   b. **Limitations:** Compensation often meagre; employers rarely held criminally accountable; **ex gratia payments** (voluntary payments by government as charity) often replace legal liability.

International Perspective (ILO)

The **International Labour Organization (ILO)** asserts:

1. Industrial accidents are **rarely random**.
2. They result from **cost-cutting and underinvestment in safety**.
3. Employers must be held accountable for creating hazardous conditions.
4. ILO conventions advocate for **decent work, safe environments, and worker dignity**.

Are Workers' Rights Being Eroded?

Yes, workers' rights in India have been **eroded significantly** over the last three decades due to **weakening labour laws, systematic failures, ethical breakdowns, ignored global standards** and **limited awareness.**

Challenges (Erosion of Workers' Rights)	Way Forward
Weakening labour laws: Labour protections weakened since the 1990s; **Occupational Safety, Health and Working Conditions (OSHWC) Code, 2020** moves safety from statutory right to executive discretion.	Restore workplace safety as a **statutory right**; ensure **OSHWC Code** protects rights rather than leaving them to executive discretion.
Systematic Failures: Inspection regimes compromised; unregistered workers remain invisible; States increasing work hours (**e.g., Karnataka 2023**); safety treated as a barrier to business.	Reinstate **effective inspections**; regulate working hours; treat safety as a mandatory **right**, not an obstacle.
Ethical Breakdown: Profit prioritized over human life; informal workers face maximum risk; corporate responsibility often absent.	Hold employers **criminally accountable**; ensure ethical governance protecting vulnerable workers.
Ignored Global Standards: India lags in adoption of international best practices.	Ratify **International Labour Organization (ILO) conventions**; benchmark and implement **global safety standards**.
Limited Awareness: Lack of workplace culture emphasizing safety and dignity.	Promote a **culture of safety, dignity, and accountability** through training, awareness, and strict enforcement.

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4. 2025 Nobel Prize in Literature

Why in the News?

1. Hungarian author **László Krasznahorkai** has been awarded the **2025 Nobel Prize in Literature** for his *"singular prose that, in the midst of apocalyptic terror, reaffirms the power of art."*
2. The recognition honours his **decades-long contribution to philosophical and existential literature**, bridging European and Asian cultural thought.
3. This makes him **the second Hungarian Nobel laureate in Literature** after **Imre Kertész (2002)**, highlighting Hungary's continued global literary significance.

Early Life and Historical Context

1. Krasznahorkai was **born in 1954** in *Gyula, Hungary*, near the Romanian border, his early life was shaped by the **oppressive atmosphere of socialist Hungary**.
2. His **Jewish and rural upbringing** deepened his sensitivity to themes of *history, repression, and human endurance*.
3. He studied **law and literature in Budapest**, where he began exploring existential themes that would define his writing.
4. **Debut novel:** *Sátántangó* (1985) -It is a dark, complex narrative set on a dying collective farm.
5. The book's **philosophical depth** and unique structure established him as a **distinct voice** in postmodern literature.
6. *Sátántangó* was later adapted by filmmaker **Béla Tarr** into a **seven-hour film**, turning both author and director into cult figures in European art circles.
7. **Key works** include:
   a. **The Melancholy of Resistance (1989):** It portrays social breakdown through the arrival of a mysterious circus.
   b. **War and War (1999):** It follows a man's obsession to preserve a mysterious manuscript amid chaos.

What is the central theme of Krasznahorkai's writings?

1. **Three key terms**: *Apocalypse, Resistance,* and *Human dignity*; form the **core themes** of László Krasznahorkai's writings:
   a. **Apocalypse**
      i. He uses the idea of the apocalypse not as the literal end of the world (as described in the Bible), but as a **symbol of moral and social collapse** (a breakdown of order, values, and meaning).
      ii. His novels often depict **societies in decay**: towns falling apart, people losing faith, and institutions turning corrupt. This shows how destruction begins within human minds.
      iii. Through this, he reflects on the **anxieties of modern life**, where chaos, violence, and spiritual emptiness threaten human existence.
   b. **Resistance**
      i. In the face of despair and ruin, his characters often show **quiet acts of resistance** through art, memory, or moral courage.
      ii. This resistance is not political rebellion but a **spiritual defiance** i.e., **staying strong from within**, not giving up hope even when everything seems to be falling apart.
      iii. For Krasznahorkai, resistance means **preserving beauty, truth, and meaning** even when the world offers none.
   c. **Human Dignity**
      i. Amidst destruction, Krasznahorkai's writing insists on the **worth of human beings**, their ability to think, feel, and create.
      ii. He believes that **art and language protect dignity**, allowing humanity to rise above fear and corruption.
      iii. Human dignity, in his view, means **facing pain with courage and kindness**, finding grace even in decay.

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Global Influence and Cross-Cultural Engagement

1. While rooted in **Central European tradition** (Kafka, Musil, Beckett), Krasznahorkai later turned to **Asian philosophy and aesthetics**.
2. Works like *Seiobo There Below* (2008) and *Destruction and Sorrow Beneath the Heavens* (2004) reflect his **engagement with Japanese and Chinese spiritual traditions**.
3. Through this cross-cultural dialogue, he evolved a **philosophy of endurance and artistic devotion**, viewing art as *a sacred act against despair*.

Literary Style and Legacy

1. Krasznahorkai is Known for his **long, flowing sentences** and **dense prose**, often spanning multiple pages. This is a deliberate attempt to mimic **the continuity and chaos of life**.
2. Reading his work demands patience, but rewards the reader with **emotional and intellectual immersion**.
3. His literary style has been described as *"beauty in language, fun in hell"*, revealing his belief that **art must confront darkness to find light**.
4. The Nobel Prize recognises this **faith in language and art as forms of resistance** in a world overwhelmed by speed, noise, and fragmentation.

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Implications

1. **Renewed attention to world literature:** Encourages global readers to engage with non-mainstream, philosophical works.
2. **Cultural diplomacy:** Highlights Hungary's role in European intellectual tradition.
3. **Revival of slow literature:** Counters today's fast, digital reading habits with deep, reflective engagement.
4. **Philosophical relevance:** Reinforces art's role in confronting existential crises like war, climate anxiety, and alienation.
5. **Inspiration for Indian literature:** Promotes introspective storytelling that reflects society, history, and human experiences.

Challenges and Way Forward

Challenges	Way Forward
1. **Limited readership** due to complex prose style.	Promote translated editions and simplified commentaries for wider access.
2. **Declining global attention span** in digital media culture.	Encourage academic and institutional engagement with literary arts.
3. **Underrepresentation of non-English authors** in global publishing.	Support translation funding and global literary networks.
4. **Difficulty in interpreting dense existential themes.**	Incorporate literature-based discussions in humanities curricula.
5. **Risk of elitism in modern literature appreciation.**	Foster inclusive literary outreach and public discussions.

5. Caste Realities and Atrocities in India

Why in the News?

1. Recent incidents, the **lynching of Hariom Valmiki**, the **suicide of IPS officer Y Puran Kumar**, and the **attack on Chief Justice B R Gavai**, have reignited discussions on **caste-based discrimination** in India.
2. Though these events differ in nature, they share one common thread: all victims were **Dalits**, raising questions about the **invisible yet persistent role of caste** in modern India.

Understanding Caste in Contemporary India

1. **Caste is not just a relic of the past**; it continues to shape social interactions, access to resources, and institutional behavior.
2. It is **not confined to rural or backward areas**, it exists in urban spaces, elite institutions, and modern professions.
3. Caste-based injustice often **doesn't announce itself directly**; it hides behind layers of bureaucracy, social norms, and coded language.

Caste Bias in Everyday Realities

1. Caste-based **discrimination** in India often operates **subtly**, even in seemingly **neutral situations**. **Counterfactual reasoning**, asking "what if" questions, can reveal **hidden biases** in **social responses**, **institutional behavior**, and **media coverage**.
2. **Dalits**, for example, may face **slower justice** or **less attention** compared to **dominant caste** individuals.
3. Even in **modern urban settings**, **caste** continues to influence **treatment**, **institutional response**, and **societal reactions**.

Caste-Based Atrocities: Data and Trends

According to the **National Crime Records Bureau (NCRB)**:

Year	Cases Against SCs	Cases Against STs
2022	57,582	10,064
2023	57,789 (+0.4%)	12,960 (+28.8%)

Forms of violence include physical assault, social ostracism, denial of housing, and workplace discrimination.

2. **Urban areas** are not immune, discrimination persists in hiring, housing, and institutional behavior.

Legal and Constitutional Safeguards

1. **Social reformers** like **Ambedkar, Phule, Periyar, and Gandhi** laid the foundation for anti-caste movements which resulted in these safeguards.
2. **Reservation policies**: Aim to ensure representation in education, jobs, and governance. (**Eg** - Reservations under **Article 15 and Article 16**).
3. **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989**: Designed to protect SC/ST communities from violence and discrimination.
4. Despite these efforts, **implementation remains weak**, and **social attitudes are slow to change**.

Challenges and Way Forward

Challenge	Way Forward
Weak enforcement of anti-caste laws and delayed justice	**Strengthen** law enforcement, **ensure** swift prosecution, and **sensitise** police and judiciary about caste discrimination.
Entrenched social prejudices and hierarchical caste norms	**Launch national campaigns** through political leadership, education, media, and public platforms to promote egalitarian values.
Fragmented civil society and inter-community divides	**Foster dialogue** through civil society, religious institutions, cultural organisations, and academia to bridge community gaps.
Ineffective implementation of affirmative action	**Rigorously implement affirmative action policies** with transparent monitoring for equitable access to education, jobs, and resources.
Marginalised groups lack leadership, representation, and cultural platforms	**Amplify** Dalit, Adivasi, and Bahujan **voices**, **revive** anti-caste social **movements**, and **provide platforms** for cultural expression to assert identity and **strengthen social justice agendas.**

6. Menstrual Leave in India

Why in the News?

1. Karnataka recently approved **one paid menstrual leave per month** for women in government and private offices.
2. Comedian Urooj Ashfaq joked: if men menstruate, it would be celebrated with **government support, ministers, and PMS relief funds**.
3. This echoes **Gloria Steinem's 1978 essay "If Men Could Menstruate"**, which argued that biological traits associated with power are socially celebrated, while traits of the powerless are stigmatised.

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What is a Menstrual Leave?

It is a type of leave where women and trans women may have the option of taking a paid leave from their workplace during the period of menstruation.

Significance of Providing Menstrual Leave in India

1. **Promotes Gender Equity at the Workplace**
   a. Menstrual leave recognises that women experience unique biological conditions that can affect productivity.
   b. It moves from "equality" (same treatment) to **"equity"** (fair treatment based on needs), ensuring women can participate fully and fairly in the workforce.
2. **Acknowledges Menstrual Health as a Legitimate Concern**
   a. It treats menstrual pain (like **dysmenorrhea** or **endometriosis**) as a valid health issue, not a taboo.
   b. Encourages women to take care of their health without guilt or stigma.
3. **Encourages Workplace Sensitivity and Inclusivity**
   a. Menstrual leave helps build a **gender-sensitive work environment**, making workplaces more accommodating and humane.
   b. It can also promote open discussions on women's health and reduce long-standing taboos.
4. **Improves Productivity and Employee Well-being**
   a. Allowing rest during painful days improves **mental and physical health**, reducing burnout and absenteeism in the long run.
   b. Healthier employees are more efficient and motivated when they return to work.
5. **Strengthens India's Social Justice and Policy Framework**
   a. Supports India's constitutional goals under **Articles 14 (Equality before Law)** and **42 (Just and Humane Conditions of Work)**.
   b. Aligns with global commitments like the **UN Sustainable Development Goal 5 (Gender Equality)**.
6. **Encourages Retention of Women in the Workforce**
   a. India's female labour force participation is low (~26%); menstrual leave policies can help reduce dropouts due to health issues.
   b. Promotes long-term inclusion and career growth for women.

Global Examples of Menstrual Leave

1. **USSR (1922):** first menstrual leave policy, withdrawn within 5 years.
2. **Japan (1947)** and **South Korea (1953):** introduced paid leave; **Spain (2023)** was first in Europe to legislate it; **Portugal (2024)** allowed limited leave for conditions like endometriosis.
3. Low uptake is common due to **stigma, discrimination, and bureaucratic requirements**, even where legal provisions exist.

India's Policy Landscape

1. **State-level initiatives:** Bihar (1992), Kerala (2023), Odisha (2024), Karnataka (2025) approved paid leave policy. Karnataka's policy extends to **private-sector employees**, a rare step.
2. **National level:**
   a. Supreme Court (2024) refused to mandate menstrual leave under the **Maternity Benefit Act**, fearing women could be shunned in hiring and promotions.
   b. Draft **Menstrual Hygiene Policy (2023)** and **Right to Menstrual Leave Bill (2022)** have not been implemented.
3. **Workplace reality:** Policies often clash with male-designed systems, including rigid schedules, ergonomics, temperature, and assessment criteria. Women's biological realities—menstruation, pregnancy, caregiving require **special accommodation**, which is often seen as "extra" rather than standard.

Socio-Economic and Gender Concerns

1. Indian women earn only **Rs 40 per for every Rs 100 earned by men** (World Economic Forum's Global Gender Gap Report 2024).

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2. Women comprise **26% of workforce** (2025), and menstrual leave could be misinterpreted as reduced productivity.
3. Policy recognition is a **double-edged sword:** it affirms rights but may reinforce stereotypes if poorly implemented.

Implications

1. **Affirmation of women's rights:** Menstrual leave acknowledges menstrual health as part of workplace welfare and gender equity.
2. **Potential workplace discrimination:** Without safeguards, women could face bias in hiring, promotion, or evaluations.
3. **Need for gender-sensitive workplace design:** Policies must be accompanied by ergonomic, schedule, and sanitation reforms.
4. **Influence on public perception:** Raises awareness about conditions like dysmenorrhea and endometriosis, reducing stigma.
5. **Policy as corrective measure:** Menstrual leave promotes equity, integrating biological differences into labor policy rather than treating them as exceptions.

Challenges and Way Forward

Challenge	Way Forward
Stigma and social bias	Awareness campaigns, sensitivity training for managers, workplace dialogues to normalize leave.
Discrimination in hiring/ promotions	Confidential leave records, anti-discrimination laws, monitoring gender representation.
Excessive documentation requirements	Simplify verification (self-certification, doctor's note only for chronic conditions).
Fragmented policy approach across states	Model national policy in consultation with states, stakeholders, and health experts.
Implementation in informal sector	Public health initiatives for free menstrual products, outreach programs, and employer incentives.

7. Foreign Universities in India

Context

1. During UK Prime Minister **Keir Starmer's visit to India (October 2025)**, the announcement that **nine UK universities** will open campuses in India marked a major step toward internationalising higher education.
2. This aligns with the **National Education Policy (NEP) 2020**, which envisions allowing top global universities to operate in India, enhancing access to world-class education and research collaboration.

Background

1. The **NEP 2020** recommended that the world's **top 100 universities** be permitted to set up campuses in India.
2. In **2023**, the **University Grants Commission (UGC)** issued formal regulations enabling foreign higher education institutions (FHEIs) to establish campuses.
3. Before these regulations, only a few foreign universities were allowed to operate within **GIFT City, Gujarat**.
4. As of 2025, **17 universities** have received approval to open campuses in major Indian cities such as **Mumbai, NCR, Chennai, and Bengaluru**.

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Which Universities Are Coming to India?

1. Under UGC norms, foreign universities ranked **within the top 500 globally** are eligible to apply.
2. **Examples** include:
   a. **University of Bristol (Rank 51)**: Mumbai campus by 2026.
   b. **University of Southampton (Rank 87)**: Gurgaon campus operational in 2025.
3. Apart from UK universities, **six institutions from Australia** and **one from the US (Illinois Tech, Mumbai)** have announced plans.

What Will These Universities Offer?

1. **Courses offered**:
   a. **Undergraduate (3 years)** and **Master's (1 year)** programmes.
   b. **Focus areas:** Business management, Computer science, AI, Accounting, Finance.

2. UGC **mandates** that:
   a. **Curriculum**, **pedagogy**, and **assessment** must match the home campus.
   b. Faculty can include both **Indian and international educators**.
3. Fees are expected to be **40-50% lower** than studying at the overseas campus (e.g., ₹13-23 lakh per year at Southampton, Gurgaon).

Why Are Universities Interested in India?

1. **Domestic Push:** UGC reforms and NEP provisions have made India a favourable market.
2. **External Factors:**
   a. **UK universities** are facing financial stress due to tuition freezes and declining international enrolments.
   b. **Cost-cutting and course closures** have pushed them to seek new revenue streams abroad.
3. India offers a **large, growing student base**, strong economic potential, and an opportunity to expand **academic influence in the Global South**.

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What Does It Mean for Indian Students?

1. Students can access **global-quality education locally**, reducing cost and dependency on foreign visas.
2. Possible **student-exchange opportunities** may allow semesters abroad.
3. However:
   a. Studying at Indian campuses **does not guarantee post-study work visas** in the foreign countries.
   b. Visa eligibility generally requires physical study abroad for at least one year.
4. Despite this, these campuses can **familiarize students with international pedagogy and networks**.

Global and Domestic Context

1. According to the **Cross-Border Education Research Team (2023)**, the **US leads** globally with **84 branch campuses**.
2. The entry of multiple UK and Australian universities signals India's rise as a **regional education hub**.
3. This could support the **"Study in India" initiative**, aiming to attract both Indian and foreign students.

Impact on India's Education Ecosystem

1. Boosts **competition and quality** among Indian universities.
2. Encourages **curricular innovation** and **skill-oriented education**.
3. Could make India a **global higher education hub**, reducing outbound student migration.
4. Strengthens **knowledge diplomacy** and **soft power ties**, especially with the UK and Australia.

Challenges and Way Forward

Challenges	Way Forward
Regulatory Clarity: Need for consistent UGC oversight on academic standards, faculty recruitment, and degree recognition.	**Strengthen UGC Framework:** Clear guidelines on accreditation, degree equivalence, and dispute resolution.
Equity and Access: High fee structure may limit access to affluent sections, potentially widening educational inequality.	**Promote Affordability:** Scholarships, credit-based financing, and public-private collaboration to ensure inclusivity.
Brain Drain vs Brain Gain: Foreign campuses may attract top Indian faculty and students, affecting public universities.	**Protect Academic Sovereignty:** Balance openness with regulatory autonomy to safeguard India's education ecosystem.
Quality Assurance: Ensuring parity between Indian and foreign campuses in curriculum, evaluation, and infrastructure.	**Enhance Collaboration:** Encourage research partnerships, faculty exchange, and joint degree programs.
Cultural and Academic Integration: Adapting global education models to Indian socio-economic realities.	**Develop Regional Hubs:** Promote cities like Bengaluru and Mumbai as international education centres.

HISTORY

1. Hind Swaraj and Gandhi's Vision of Swaraj

Context:

1. Written in **1909** aboard the ship Kildonan Castle while returning from South Africa, Mahatma Gandhi's **Hind Swaraj** is a seminal work that critiques **modern civilisation**, advocates **passive resistance**, and lays out his philosophical conception of **self-rule (swaraj)**.
2. It reflects Gandhi's early political thought before leading India's mass independence movement.

What is Hind Swaraj?

1. Hind Swaraj is a **dialogue between an editor and a reader**, exploring themes of **civilisation, colonialism, violence, and self-rule**.
2. Gandhi originally wrote it in **Gujarati** and translated it into **English** himself, emphasizing **cultural authenticity and national identity**.

Why is Hind Swaraj Significant?

1. **Early political thought:** Offers Gandhi's perspective on **colonial India** as an **expatriate observer**.
2. **Critique of early nationalism:** Questions the **petitioner-based approach** of early Congress leadership.
3. **Philosophical basis of swaraj:** Promotes **originality of self-rule** rather than imitation of the British.
4. **Cultural revival:** Advocates **Hindi in Devanagari script** as a national language to strengthen national identity.

Key Highlights

1. **Critique of Professions:**
   a. **Lawyers:** Gandhi criticises their role in **prolonging disputes for profit**.
   b. **Doctors:** Modern medicine profits from ill-health.
   c. **Comparison:** Similar to **Plato's Republic**, where an ideal society minimizes the need for such professions.
2. **Critique of Modern Civilisation:**
   a. **Excessive machinery:** Railways and urbanisation disrupt social and economic balance.
   b. **Moral decay in cities:** Metropolises like **Calcutta and Bombay** foster corruption and loss of values.
   c. **Contrast with Indian civilisation:** Emphasizes **simplicity and sustainability of villages**.
3. **Distinction Between 'Soul Force' and 'Body Force':**
   a. **Body force:** Physical or violent resistance against oppressors.
   b. **Soul force (Satyagraha):** Passive resistance through **internalised suffering**, leading to **profound moral and social change**.
4. **Originality of Swaraj:**
   a. Swaraj is not merely the removal of British rule.
   b. True self-rule requires **revival of Indian values**, not imitation of Western models.
   c. Leaders must **think, write, and speak independently**, avoiding colonial influence.
5. **Language and National Identity:**
   a. Advocates **Hindi in Devanagari** as a medium for national discourse.
   b. Language is seen as a tool to **preserve cultural authenticity** and achieve genuine swaraj.

Implications:

1. **Moral and political:** Emphasises **ethical leadership** and non-violence in political struggle.
2. **Cultural revival:** Encourages **self-reliance and indigenous education**.
3. **Socio-economic:** Critiques modern urbanisation and promotes **rural sustainability**.
4. **Strategic resistance:** Passive resistance as an **effective tool against colonial power**.
5. **Linguistic nationalism:** Language becomes central to **national identity and self-rule**.

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Challenges and Way Forward:

Challenges	Way Forward
Reliance on Western models for governance	Promote **indigenous administrative and educational systems**
Moral corruption in leadership and society	Encourage **ethical and value-based leadership**
Urbanisation leading to social imbalance	Strengthen **rural economy and village-centric development**
Violence and coercion in freedom struggle	Use **soul force/ satyagraha** for lasting change
Cultural alienation through language	Adopt **national languages** for administration and education

2. Pandit Chhannulal Mishra: The Voice of Banaras

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Why in the News?

1. **Pandit Chhannulal Mishra**, Padma Vibhushan awardee and one of the greatest Hindustani classical vocalists, passed away on **02 October, 2025**.
2. His death marks the end of a seven-decade-long career that blended **classical and semi-classical traditions**, deeply rooted in Banaras's cultural ethos.

Key Highlights

1. **Early Life and Struggles**
   a. Born in **humble circumstances**, he faced **hardships in his youth** before success reached him.
   b. His rise was **delayed but meteoric**, shaped by patrons like Mahant Maharaj ji (Sankat Mochan Mandir) and Prof. Veer Bhadra Mishra (IIT-BHU).
2. **Training and Gharana Influence**
   a. A disciple of **Ustad Abdul Ghani Khan** of the **Kirana Gharana**, known for its lyrical and melodious style.
   b. He contributed to enriching the **Banaras Gharana**.
3. **Musical Range and Contributions**
   a. Mastery across genres: **alap, khayal, thumri, bhajan, tappa, dhrupad ang, tarana**.
   b. Specialized in singing from **Ramcharitmanas** of Goswami Tulsidas, connecting music with spirituality.
   c. Composed music for **Odissi dance performances** (1979–2019), including the renowned "**Kewat Prasang**."
4. **Recognition and Mass Appeal**
   a. Garnered a **pan-India following** through his ability to render both **classical and semi-classical forms**.
   b. Admirers included cultural icons like **Amitabh Bachchan**.
   c. His singing evoked **sahrdayatvam** (shared emotional resonance) among audiences across classes.

Hindustani Classical Music

1. **Origin & Evolution**: Hindustani music evolved in **North India** from around the 13th century onwards, influenced by ancient Vedic chants, temple music traditions, and later by **Persian & Central Asian musical elements** during the Delhi Sultanate and Mughal period.
2. **Nature**: It is primarily **improvisational** and based on **ragas (melodic framework)** and **talas (rhythmic cycles)**.
3. **Instrumental music** plays a vital role (sitar, sarod, tabla, shehnai, sarangi).
4. **Distinctiveness from Carnatic Music**: Hindustani music focuses more on **improvisation and slow elaboration (alap)**, while Carnatic is more **composition-based**.
5. **Gharanas in Hindustani Music:** A **gharana** is a **school or style of music**, developed around a guru-shishya (teacher-disciple) tradition. Each gharana has unique techniques, compositions, and performance aesthetics.
6. **Major Styles in Hindustani Musical Compositions**
   a. **Dhrupad**
      i. **Oldest and purest form** of Hindustani music (origin in temples, devotional).

ii. Characterised by **serious, austere, spiritual mood**.
iii. Uses **long, slow alap (elaboration of raga)** and strict **tala**.
iv. Famous Dagar brothers, Tansen (Mughal court) linked with this tradition.

b. Khayal
i. Most popular classical style today.
ii. Known for **improvisation, ornamentation, and emotional expression**.
iii. Flexible compared to Dhrupad.
iv. Developed during the Mughal period (credited to Sufi singer Amir Khusro and later popularised by Niyamat Khan "Sadarang").

c. Thumri
i. **Semi-classical** style, lighter than khayal.
ii. Themes often based on **love (sringara rasa)**, especially Radha–Krishna devotion.
iii. Highly **expressive and lyrical**.
iv. Banaras and Lucknow are its main centres.

d. Tappa
i. Originated from **folk songs of camel riders of Punjab**.
ii. Very fast, full of **quick, intricate taans (fast notes)**.
iii. Short, romantic themes.

e. Tarana
i. Uses **meaningless syllables (like na, tom, tana, derena)** instead of words.
ii. Focus is on rhythm and speed, showcasing **taal and vocal agility**.
iii. Introduced by Amir Khusro.

f. Dadra
i. A **light classical** style, similar to thumri but shorter.
ii. Based on **romantic and devotional themes**.
iii. Usually composed in **Dadra tala (6 beats)**.

g. Bhajan
i. Devotional song, sung in classical or semi-classical form.
ii. Focus on **bhakti (devotion)** rather than complex raga elaboration.

h. Ghazal (though more linked to Persian/Urdu poetic tradition, it blends with Hindustani music)
i. Based on **Urdu poetry**, emotional and romantic themes.
ii. Sung in semi-classical style with raga base.

Challenges and Way Forward

Challenges	Way Forward
Decline of interest in classical music among youth	Strengthen **music education** in schools and promote classical forms via digital platforms
Over-commercialisation of music	Balance tradition with innovation, encouraging **semi-classical and devotional genres**
Lack of institutional support for artists	Provide **financial security, scholarships, and performance platforms** for musicians
Preservation of gharanas (schools of music)	Establish **archives, documentation centres, and digital libraries** of performances
Limited international exposure	Expand **cultural diplomacy programs** to showcase Indian maestros globally

3. UNESCO's Virtual Museum of Stolen Cultural Objects

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Why in the News?

1. In **September 2025**, UNESCO launched the Virtual Museum of Stolen Cultural Objects at the **MONDIACULT Conference** to tackle the global trafficking of stolen cultural property.
2. The project serves as a **digital bridge between communities and their looted artifacts**, many of which were taken during **colonial expansion**.
3. Developed with **INTERPOL** and funded by the **Kingdom of Saudi Arabia**, it marks a new phase in **heritage protection through digital repatriation**.

Key Highlights

1. Concept and Purpose
a. The museum is an **interactive digital platform** that identifies, documents, and showcases stolen or missing heritage items.
b. Its ultimate aim is to **"empty itself"** as these items are recovered and returned to their rightful owners.

c. The project complements UNESCO's broader mission of **safeguarding culture, heritage, and education in the digital era**.

2. **Design and Architecture**
   a. Conceived by **Francis Kéré**, a **Pritzker Prize–winning architect**, the museum's structure is inspired by the **Baobab tree**, symbolizing **strength and community** in African culture.
   b. The design offers **immersive rooms**; a **Gallery of Stolen Objects**, a **Restitution Hall**, and an **Auditorium**; allowing visitors to explore artifacts by **origin, material, or function**.
   c. Where photographic evidence is missing, **AI-generated 3D models** recreate the objects, enhancing accessibility and realism.
3. **Collection and Global Scope**
   a. Displays about **240 objects from 46 countries**, from fossils to sacred sculptures.
   b. Each object is linked to a **geographical map** showing where it was stolen, thereby illustrating the global scale of cultural displacement.

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Indian Representation: Mahadev Temple Sculptures (Pali, Chhattisgarh)

Two **9th-century sandstone figures**, of **Nataraja** and **Brahma**, illustrate India's classical artistic mastery and religious symbolism.

1. **Nataraja (Lord Shiva as the Cosmic Dancer):**
   a. Depicts **Shiva's Ananda Tandava**, symbolizing the cosmic rhythm of **creation, preservation, and destruction**.
   b. The **damaru** signifies creation through sound, while the **fire (Agni)** in another hand represents dissolution.
   c. His **raised palm (abhaya mudra)** offers assurance, and his **foot crushing Apasmara**, the demon of ignorance, symbolizes the victory of **wisdom over darkness**.
   d. The presence of **Nandi**, his bull vehicle, reinforces Shiva's protective aspect and cosmic order.
   e. Stylistically, the sculpture reflects **fluid movement, symmetrical grace, and spiritual symbolism** typical of early medieval Indian iconography.
2. **Brahma (The Creator):**
   a. Shown seated in **lalitasana** (relaxed pose), with **three visible faces and four arms**, embodying the **four Vedas and directions**.
   b. Holds sacred emblems, **rosary (akshamala)**, **Vedas**, **kamandalu (water pot)**, and **lotus**, representing **creation, wisdom, and purity**.
   c. The **hamsa (goose)** at his feet embodies **discernment (viveka)**, the intellect that separates truth from illusion.
   d. The sculpture displays refined **Gupta-inspired calmness**, intricate carving, and balanced composition — demonstrating how **Indian temple art blended theology with aesthetics**.

Together, these figures convey the **Hindu metaphysical triad** of creation, preservation, and destruction, a key civilizational concept often embodied in temple iconography.

UNESCO's Broader Heritage Role

1. Founded in **1945**, UNESCO's mission evolved from post-war reconstruction to **safeguarding tangible and intangible heritage**.
2. Recent focus includes **ethical AI**, **digital preservation**, and **cultural diplomacy**.
3. The Virtual Museum **aligns with UNESCO conventions** such as:
   a. 1970 Convention on the Means of Prohibiting Illicit Import and Export of Cultural Property, and
   b. 1972 World Heritage Convention, reinforcing the global right to cultural memory.

Implications

1. **Decolonizing Heritage:** Reframes global heritage ownership by recognizing historical injustices and restoring **moral and cultural agency** to source nations.
2. **Technological Empowerment:** Demonstrates how **AI and virtual platforms** can protect, reconstruct, and democratize access to endangered cultural artifacts.
3. **Diplomatic Collaboration:** Fosters coordination among **governments, museums, and law enforcement** to trace and return stolen heritage, building mutual cultural trust.

4. **Educational and Social Awareness:** Engages the public in understanding **the value of heritage protection**, the impact of theft, and the meaning of restitution.
5. **Soft Power and National Identity:** Strengthens India's **cultural diplomacy** and ongoing efforts to reclaim artifacts abroad, while projecting its civilizational ethos of **knowledge, art, and spirituality**.

Challenges and Way Forward

Challenges	Way Forward
1. Ambiguous Ownership: Virtual restitution may dilute claims for physical return.	UNESCO must define **digital restitution as complementary**, not substitutive, to real repatriation.
2. Institutional Resistance: Western museums often oppose repatriation.	Build **bilateral frameworks** and encourage **shared custodianship** agreements.
3. Authenticity of AI Reconstructions: Risk of misrepresentation.	Employ **heritage experts and archaeologists** in digital rendering verification.
4. Limited Access in Developing Regions: Digital divide restricts participation.	Develop **open-access portals** and regional heritage centres.
5. Legal Complexities: Diverse national laws hinder cooperation.	Promote **harmonized global standards** under the 1970 UNESCO Convention.

4. Should ASI Be Privatised?

Context

1. Recent government steps like the **"Adopt a Heritage"** scheme and proposals to **rationalise the number of ASI-protected monuments** have revived debate on whether India's heritage should be managed through **Public-Private Partnerships (PPP)**.
2. Supporters see this as a way to bring resources and efficiency, while critics warn that **real estate and tourism interests** could overshadow conservation and cultural values, making this not merely an administrative issue, but one that touches the **nation's historical imagination and identity**.

What is ASI?

The **Archaeological Survey of India (ASI)**, established in **1861** by **Alexander Cunningham**, was designed to document, conserve, and protect India's architectural and archaeological heritage.

1. Empowered under the **Ancient Monuments Preservation Act (1904)** and later the **Ancient Monuments and Archaeological Sites and Remains Act (1958)**.
2. Custodian of **3,600+ protected monuments** across India.
3. Once revered under Lord Curzon's leadership, ASI's stature has declined in recent decades as **tourism and real estate interests** have begun to dominate cultural policy.

Relevance of ASI

1. **Cultural Custodian:** ASI safeguards India's tangible heritage — temples, mosques, forts, caves, inscriptions — which embody the civilisational continuity of the subcontinent.
2. **Nation-Building Role:** By preserving monuments that reflect India's composite culture, ASI nurtures historical awareness, strengthens national pride, and enhances India's **soft power** globally.
3. **Economic Value:** Heritage tourism contributes significantly to India's GDP and employment. Monuments such as the **Taj Mahal, Qutub Minar, Konark Temple, and Elephanta Caves** attract millions of domestic and international tourists annually. This cultural capital boosts the hospitality sector, handicraft markets, and local livelihoods — making ASI's conservation role economically vital.
4. **Urban Identity:** In rapidly modernising cities, monuments and heritage sites offer **cultural depth and identity**, preventing urban spaces from turning into characterless concrete clusters. They serve as focal points for civic pride and public spaces, reminding citizens of historical continuity amidst urban change.

How ASI Protects Culture & Monuments?

1. **Conservation and Restoration:** Carries out structural repair, chemical preservation, and environmental maintenance.

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2. **Documentation:** Prepares detailed surveys, maps, and excavation records for research and reference.
3. **Legal Protection:** Declares and safeguards monuments as "protected" under national law.
4. **Community Engagement:** Conducts heritage walks, local collaborations, and museum exhibitions to build public connection with heritage.

Should ASI Be Privatised?

1. **Arguments for Privatisation:**
   a. **Resource Mobilisation:** Private investment reduces fiscal burden on the government.
   b. **Technology & Innovation:** Use of **Augmented Reality (AR)**, **Virtual Reality (VR)**, smart ticketing, and global heritage management practices.
   c. **Tourism Infrastructure:** Improved visitor amenities, signage, and digital guides.
   d. **Local Development:** Successful models like **Elephanta Caves** linked tourism to local livelihoods.
   e. **Global Competitiveness:** Aligns India's heritage management with international standards.
2. **Concerns & Risks:**
   a. **Commercialisation:** Heritage reduced to profit-driven entertainment.
   b. **Cultural Insensitivity:** Private players may lack expertise in conservation ethics.
   c. **Equity Issues:** Risk of **exclusion of local communities or high entry costs**.
   d. **Accountability Deficit:** Lack of clear MoUs led to failures in past PPPs (e.g., Elephanta).
   e. **Erosion of ASI's Authority:** Undermines institutional expertise and morale.

Global Experiences

Country	Model	Outcome
Italy	PPP for Colosseum	Improved facilities, but sparked ticketing controversies.
UK	National Trust + PPP	Balanced conservation and public access.
Cambodia	Angkor Wat PPP	Boosted revenue but excluded locals.
India	Elephanta Caves	Holistic restoration but unsustainable due to weak agreements.

The Role of Conservation Architects

1. The **1964 Venice Charter** and the rise of **UNESCO World Heritage Sites** created a new profession — the **conservation architect**, combining technical expertise with cultural sensitivity.
2. India's first, **Nalini Thakur (1982)**, pioneered this field with the **Mehrauli Archaeological Park** project. Today, integrating these experts within ASI and PPP frameworks is essential to ensure scientific, sustainable conservation.

Challenges and Way Forward

Challenges	Way Forward
1. Erosion of Historical Sensitivity: Policymakers increasingly view monuments as obstacles to real estate or spectacle.	**Cultural Education:** Reinforce the idea that monuments are living symbols of history, not commercial assets.
2. Bureaucratic Inertia and Lack of Pride in ASI: Hierarchical culture limits initiative and morale.	**Institutional Reforms:** Empower junior staff, encourage accountability, and instill pride in ASI's mission.
3. Shortage of Skilled Conservation Architects: Only ~500 trained experts; many underutilised.	**Capacity Building:** Integrate conservation architects into ASI projects and PPP frameworks.
4. Weak Coordination: Poor synergy between ASI, INTACH, DUAC, and corporate partners.	**Structured PPP Framework:** Draft transparent MoUs defining conservation-first objectives.
5. Limited Public Access to Archives & Research: Knowledge remains locked in offices.	**Transparency & Outreach:** Digitise ASI archives, expand heritage walks, and promote citizen engagement.

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6. Risk of Heritage being Subsumed by Tourism & Real Estate Agendas.	**Balanced Policy:** Ensure tourism promotion complements, not replaces, conservation priorities.
7. Political and Local Resistance: Local vested interests often derail PPP projects.	**Community-Centric Approach:** Involve local stakeholders in decision-making and revenue-sharing.

5. Sir Syed Ahmad Khan

Why in the News?

1. **Sir Syed Ahmad Khan (1817–1898)** remains central to debates on **modern education**, **minority uplift**, and **communal harmony** in India.
2. His founding of the **Mohammedan Anglo-Oriental (MAO) College** which later became **Aligarh Muslim University (AMU)** continues to influence policy and public discussion on inclusive institutions.
3. Re-reading his life helps students understand how **contextual history** prevents misinterpretation of reformers' ideas about nation and community.

Key Highlights

1. **What was analysed by Sir Syed Ahmad Khan after the 1857 Revolt?**
   a. Sir Syed lived through the **1857 Revolt**, which deeply affected Indian society and especially the Muslim elite.
   b. He observed that many Muslims had fallen behind in **modern education** and public employment.
   c. He concluded that educational renewal was necessary for social recovery and civic participation.
2. **What was done by Sir Syed Ahmad Khan to rectify the condition of society?**
   a. In **1875**, Sir Syed started a **school to teach modern subjects** alongside religious studies.
   b. He believed that learning **science**, **English**, and practical skills would help Indians improve their economic and social position.
   c. He invited both **Hindus and Muslims** to join these educational efforts.
   d. In **1877** he established the **Mohammedan Anglo-Oriental College** to provide higher education.
   e. He described the college as a means of **national progress** and explicitly stated that "nation" included **Hindus and Muslims**.
   f. The college combined modern curriculum with religious sensitivity to prepare students for public life.
3. **Sir Syed's idea of "Quam" and nationhood**
   a. Sir Syed used the word **"Quam"** to mean both **religious community** and a broader civic **nation**, depending on context.
   b. He argued that people who share the same **soil**, **laws**, and **hardships** form a nation regardless of religion.
   c. This flexible usage shows that he did not set out an ideological basis for a separate nation-state.
4. **Interfaith engagement, cultural openness and legacy**
   a. Sir Syed practised **inclusive gestures**: he welcomed Hindu participation, promoted **comparative religious study,** and wrote on non-Muslim scriptures.
   b. MAO College / AMU grew into a diverse university drawing students across India and abroad.
   c. Political leaders and educators cite Sir Syed's work as a model for **inclusive education** and civic responsibility, as done in our National Education Policy (NEP).
5. **Aligarh Movement by Sir Syed Ahmad Khan**
   a. The Aligarh Movement was a **socio-educational reform movement** launched in the **late 19th century** by Sir Syed Ahmad Khan to promote modern education and social awakening among Indian Muslims.
   b. Its goal was to **reconcile Islamic values with Western scientific knowledge**, enabling Muslims to regain confidence and participate in modern administration.

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c. The movement began with the establishment of the **Scientific Society (1864) for translating Western works into Urdu**, followed by the Mohammedan Anglo-Oriental College (1877) at Aligarh.

d. It emphasized **rational thinking, secular education, social reform**, and **interfaith cooperation, rejecting blind orthodoxy**.

e. The Aligarh Movement also encouraged **political moderation**, urging Muslims to engage constructively with the British and **focus on education before politics**.

f. Over time, it produced a **new class of educated Indian Muslims** who contributed significantly to public service, journalism, and national development.

Implications

1. **Educational policy:** Sir Syed's model implies that combining modern science with moral and cultural education strengthens communities.
2. **Social cohesion:** His practice of inviting interfaith cooperation shows that shared institutions reduce communal tensions.
3. **Institution building:** The AMU example demonstrates how a single institution can catalyse social mobility for marginalized groups.
4. **Historical interpretation:** Accurate, contextual reading of historical figures prevents misuse of their words for sectarian politics.
5. **Contemporary relevance:** Sir Syed's emphasis on inclusive education offers lessons for current policies on minority uplift and national integration.

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Challenges and Way Forward

Challenge	Way Forward
Misreading of Sir Syed's ideas	Promote **contextual historical education** and include balanced modules on reformers in school and university syllabi.
Limited access to higher education for marginalized groups	Expand **scholarships, outreach programs, and capacity building** in historical institutions and new universities.
Communal polarisation affecting campuses	Encourage **interfaith programmes, joint cultural events, and dialogue platforms** within universities.
Conservatism vs modernization within communities	Support **curriculum reforms** that respect traditions while teaching modern skills and critical thinking.
Translating legacy into policy	Create **policy cells** that adapt Sir Syed's principles into concrete educational and social inclusion programmes.

6. Thirumalapuram Finds Iron-Age Urn Burials Near the Western Ghats

Why in the News?

1. The Tamil Nadu State Department of Archaeology (TNSDA) uncovered an extensive **Iron-Age burial site at Thirumalapuram (Tenkasi district)** during its first season of excavations.
2. The excavation revealed a **stone-slab urn chamber, diverse pottery types and metal artifacts**, suggesting an early to mid-third millennium BCE occupation, pending scientific dating.

Key Highlights

1. **Discovery and fieldwork**
   a. The TNSDA began systematic excavations at Thirumalapuram and opened **37 trenches** across the site.
   b. The burial area covers roughly **35 acres**, situated about 10 km northwest of the present village, between two seasonal streams originating in the Western Ghats.
2. **Major structural find: the stone-slab urn chamber**
   a. Excavators uncovered a **rectangular chamber built of 35 stone slabs**, filled with cobbles up to 1.5 m deep.
   b. Inside the chamber were **urn burials** — pottery vessels containing human remains or grave goods — a first-of-its-kind discovery for Tamil Nadu.

c. **Urn burial**: a funerary practice where the dead (or their ashes) are placed in pottery urns and buried; it is an important marker for certain prehistoric cultural phases.

3. **Pottery and grave goods: indicators of culture and chronology**
   a. A wide assemblage of ceramics was found in graves and associated contexts: **white-painted black-and-red ware (WP-BRW), red ware, red-slipped ware, black-polished ware,** and coarse red ware.
   b. The presence of **white-painted designs** on black-and-red and black-slipped wares echoes similar decorative traditions reported at sites like Adichanallur and Korkai.
4. **Symbolic motifs and small finds**
   a. Painted motifs on a red-slipped pot included **dotted designs depicting a human figure, mountain, deer, and tortoise**, hinting at symbolic or ritual language.
   b. A total of **78 small antiquities** made of bone, gold, bronze and iron were recovered, including weapons (spearhead, dagger, arrowhead), tools (axe, chisel), a tweezer, and three tiny gold rings (each ~4.8 mm diameter).
5. **Dating and cultural placement (tentative)**
   a. On the basis of artifact styles and parallels with sites such as **Sivagalai and Adichanallur** (which have dates ranging in the third millennium BCE), archaeologists tentatively place Thirumalapuram in the **early to mid-third millennium BCE**.
   b. Officials emphasise that **scientific analyses** (e.g., radiocarbon dating, thermoluminescence) are necessary to confirm the chronology.

Iron Age

1. **What is the Iron Age?**
   a. The **Iron Age** is the period in human history when **iron became the main material** for making tools, weapons, and implements.
   b. It marks a major technological and cultural shift after the **Chalcolithic (Copper Age)** and **Bronze Age**, when copper and bronze were mainly used.
   c. The use of iron allowed people to **clear forests, cultivate more land, produce stronger weapons**, and expand settlements; leading to significant social and economic changes.
2. **Chronology of the Iron Age in India**
   a. The Iron Age in India began around **1200 BCE to 1000 BCE**, though it appeared earlier in some regions.
   b. It developed at different times in different areas:
      i. **Ganga Valley (North India):** Around 1200–1000 BCE (sites like Atranjikhera, Jakhera).
      ii. **South India (Tamil Nadu, Karnataka):** Around 1000–600 BCE (sites like Adichanallur, Hallur, Maski, and now Thirumalapuram).
      iii. **Central and Eastern India:** Around 800 BCE onwards (e.g., Chirand, Taradih).
   c. The period overlaps with the **Later Vedic Age (1000–600 BCE)** in northern India.
3. **Key Features of the Iron Age**
   a. Use of Iron Tools and Weapons:
      i. Iron replaced bronze for making axes, ploughshares, sickles, nails, spears, and swords.
      ii. These tools helped in better agriculture, woodworking, and warfare.
   b. Agricultural Expansion:
      i. Stronger iron ploughs allowed people to cultivate **heavier alluvial soils** of the Gangetic plains.
      ii. This increased **food production** and supported **larger settlements**.
   c. Urban Growth:
      i. Growth of **permanent settlements and towns** (e.g., Kausambi, Hastinapur).
      ii. Iron-based economies supported **craft production and trade networks**.
   d. Social and Political Changes:
      i. Emergence of **kingdoms and janapadas** in northern India.
      ii. Rise of **new social hierarchies** and **specialised occupations**.

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e. **Burial and Cultural Practices:**
   i. In South India, **Megalithic burials** (stone circles, urn burials, dolmens) are typical of this period.
   ii. These graves often contain pottery, iron objects, beads, and ornaments, showing beliefs in life after death.

Important Iron Age Sites in India

Region	Site	Significance
North India	Atranjikhera (UP)	Iron tools, pottery, early agriculture evidence
East India	Chirand (Bihar)	Iron implements with rice husks, showing settled agriculture
Central India	Eran (MP)	Iron weapons, beads, evidence of urban growth
South India	Adichanallur, Hallur, Maski, Thirumalapuram	Megalithic burials, urns, iron tools, and ornaments
Deccan Region	Takalghat and Mahurjhari (Maharashtra)	Iron objects and burial remains

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Key Terms

1. **Black-and-Red Ware (BRW) and White-Painted BRW**
   a. BRW is a pottery tradition characterised by a black interior and red exterior produced by controlled firing and reduction-oxidation techniques.
   b. White-painted varieties show additional surface decoration applied post-firing and often indicate symbolic or regional stylistic choices.
   c. Manufacture involves specific clay selection, tempering agents and firing protocols that archaeologists can analyse to infer technology.
   d. Distribution patterns of BRW link inland and coastal trade networks in prehistoric South India.
   e. Petrographic and chemical analyses of ceramic paste reveal provenance and exchange mechanisms.

2. **Western Ghats — Archaeological Significance**
   a. The Western Ghats plateau and foothills form an ecological and cultural corridor linking interior peninsular India with coastal zones.
   b. Seasonal streams and tank systems supported prehistoric settlements and farming communities; proximity to Thirumalapuram suggests resource advantages.
   c. Hill-plain interfaces often preserve unique settlement patterns and burial practices.
   d. Comparative studies across the Ghats frontier reveal patterns of mobility, resource exploitation and trade in prehistoric times.
   e. Conservation of such landscapes is crucial for protecting archaeological sites from modern development and erosion.

Implications

1. **Extension of Iron-Age presence:** Thirumalapuram pushes evidence of early complex funerary customs closer to the Western Ghats, expanding our map of Iron-Age communities in south India.
2. **Cultural connections:** Shared pottery styles and motifs suggest **interaction networks** among coastal and inland sites in southern India during the third millennium BCE.
3. **Funerary diversity:** The stone-slab urn chamber indicates **architectural investment in mortuary practice**, revealing social attitudes toward death and memory.
4. **Material culture insights:** Finds of iron, bronze and gold point to **technological skills and craft specialisation**, with implications for trade and resource use.
5. **Research priority:** The site becomes vital for reconstructing regional prehistory, prompting further excavation, conservation and multidisciplinary scientific study.

Challenges and Way Forward

Challenge	Way Forward
Uncertain chronology — stylistic dating is provisional.	Conduct radiocarbon dating of human bone/charcoal and thermoluminescence dating on pottery for absolute dates.

Site preservation — exposed trenches and fragile finds risk damage.	Implement immediate conservation, controlled backfilling, and a site management plan.
Contextual gaps — limited seasons so far hinder comprehensive interpretation.	Plan multi-season excavations, wider survey and geophysical prospection to map site extent and associated settlements.
Specialist analyses lacking — metallurgy, isotopes, and bioarchaeology pending.	Engage specialists: archaeometallurgy, palaeobotany, stable isotopes, and ancient DNA to reconstruct technology, diet and mobility.
Community engagement & heritage protection	Involve local stakeholders, create heritage awareness programmes, and legal protection to prevent looting or unregulated development.

7. Chhath Puja 2025

Context

Chhath Puja, a major festival in Bihar, eastern Uttar Pradesh, Jharkhand and Nepal, witnessed lakhs of devotees offering prayers to the setting and rising Sun. The celebration reflects India's deep-rooted traditions of nature worship, communal harmony, cleanliness and gender inclusivity.

The Indian government has formally **nominated Chhath Puja** for inclusion on **UNESCO's list of Intangible Cultural Heritage.**

About Chhath Puja

1. **Nature of the Festival:** A four-day festival dedicated to **worshipping the Sun God (Surya)** and **Chhathi Maiya**, believed to be the Sun's sister.
2. **Timing:** Celebrated six days from Diwali (Kartik Shukla Shashthi) and, in some regions, in April as *Chaiti Chhath*.
3. **Regions:** Predominantly observed in Bihar, eastern UP, Jharkhand, and among the Purvanchali diaspora across India and abroad.
4. **Deity: Chhathi Maiya**, daughter of Rishi Kashyap and Aditi, and wife of Lord Kartikeya, symbolises fertility and protection.

Cultural and Religious Significance

1. **Ancient Roots:** References in the *Rig Veda*, *Ramayana*, and *Mahabharata* link the festival to Sun worship by Sita, Draupadi, and Karna.
2. **Eco-spiritual Aspect:** Symbolises gratitude to the Sun for sustaining life and aligns with sustainable, nature-based worship practices.
3. **Social Inclusivity:** No priestly hierarchy; anyone, irrespective of caste or class, can perform the rituals.
4. **Collective Spirit:** Promotes community participation — cleaning ghats, preparing prasad (thekua), and ensuring smooth celebration.

Ritual Process

Day	Description
Day 1: Naha Kha	Devotees take a holy dip in rivers/ponds and eat a single, pure meal prepared on a clay stove (chulha).
Day 2: Kharna	A single meal of kheer and roti is consumed in the evening before beginning a **36-hour fast without water**.
Day 3: Sandhya Arghya	Offerings are made to the **setting Sun (Pratyusha)** at riverbanks or temporary pools, symbolising gratitude.
Day 4: Bhor ka Arghya	Devotees offer prayers to the **rising Sun (Usha)**, marking the conclusion of the fast and celebration of life's cycle.

What Makes Chhath Unique

1. **Direct Devotion:** No intermediary priests; direct worship of the visible Sun.
2. **Equality in Faith:** Uniform rituals for all devotees regardless of social status.
3. **Eco-Cultural Ethos:** Use of natural offerings, seasonal fruits, sugarcane, diyas and rangolis encourages sustainability.
4. **Community Cohesion:** It shows how people from Purvanchal stay **connected through their shared culture and traditions**, even when they **migrate to other parts of India or abroad**.

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5. **Spiritual Philosophy:** Emphasises balance between dusk and dawn, symbolising renewal and hope.

Challenges and Way Forward

Challenges	Way Forward
Polluted Water Bodies: Rituals often occur in contaminated rivers and ponds.	Strengthen local administration's role in **cleaning ghats** and ensuring **safe water quality** before the festival.
Urban Constraints: Migrants in cities lack access to natural water bodies for rituals.	Promote **community ghats** and **temporary eco-friendly ponds** in urban areas.
Commercialisation & Media Sensationalism: Focus often shifts from devotion to display.	Reinforce **cultural awareness campaigns** about the festival's values and simplicity.
Environmental Pressure: Excessive use of plastics and non-biodegradable materials.	Encourage **eco-friendly offerings and bamboo/ cane baskets** through local regulations.
Legal and Constitutional Aspects: Managing public gatherings must align with safety, public order, and environmental laws.	Implement **guidelines under Articles 25-26** (freedom of religion) balanced with environmental protection laws.

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8. Need for Preserving Dogri Language

Context

A recent study has raised alarms over the rapid decline in the use and literacy of **Dogri**, one of Jammu and Kashmir's official languages, highlighting the erosion of regional linguistic heritage despite constitutional recognition.

About the Dogri Language

1. **Language Family:** Dogri belongs to the **Indo-Aryan branch** of the Indo-European family.
2. **Regions Spoken:** Primarily in **Jammu region**, parts of **Himachal Pradesh**, and among the **Dogra diaspora** in North India.
3. **Scripts Used: Devanagari and Takri.**
4. **Cultural Significance:** Deeply intertwined with **Dogra folklore, art, literature, and oral traditions.**
5. **Official Recognition:**
   a. Included in the **Eighth Schedule** of the Constitution (2003).
   b. Recognised under the **Jammu and Kashmir Official Languages Act, 2020.**

Significance of Dogri

1. Acts as a **cultural identity marker** for the Dogra community.
2. Preserves **regional literature and folk traditions.**
3. Contributes to **India's linguistic diversity** and cultural pluralism.
4. Its preservation supports **constitutional values of multiculturalism** under Articles **29 and 350A**.

Challenges and Way Forward

Challenges	Way Forward
Policy Neglect: Delayed recognition and poor institutional support limited Dogri's presence in schools and administration.	**Educational Integration:** Introduce Dogri at the primary level under NEP 2020; train teachers and develop quality learning materials.
Generational Disconnect: Younger generations rarely read or write Dogri, breaking intergenerational transmission.	**Cultural Incentives:** Promote Dogri festivals, arts, and link proficiency to local jobs and tourism.
Urban Influence: English and Hindi dominate urban spaces, reducing Dogri's relevance.	**Digital & Media Promotion:** Expand Dogri content in films, TV, and social media; create digital archives and e-learning tools.
Rural-Urban Divide: Usage remains higher in rural areas but literacy is low overall.	**Institutional Support:** Strengthen Dogri Sanstha and Sahitya Akademi; set up cultural and language centres.

Linguistic Erosion: Mirrors India's wider decline of regional languages due to migration and globalisation.	**Data and Policy Renewal:** Resume Census-based mapping and create a national framework for endangered languages.

9. Sardar Vallabhbhai Patel's Vision

Context

India celebrates **Rashtriya Ekta Diwas (National Unity Day)** every year on **October 31**, marking **Sardar Vallabhbhai Patel's birth anniversary**. The 150th year of his birth (2025) is being observed with cultural events at **Ekta Nagar**, Gujarat, home to the **Statue of Unity**, the world's tallest statue.

About Sardar Vallabhbhai Patel

1. Born **October 31, 1875**, in **Nadiad, Gujarat**, Patel was trained as a lawyer in England (Middle Temple) before joining India's freedom struggle.
2. Known as the **"Iron Man of India"**, he was admired for his **firm leadership, realism, and administrative skills**.
3. He served as **India's first Deputy Prime Minister and Home Minister**, helping lay the foundations of a **united, secure, and administratively strong India**.

Major Contributions

1. **Freedom Struggle:**
   a. Led the **Kheda (1918)** and **Bardoli (1928)** Satyagrahas, securing relief for farmers.
   b. Active in the **Non-Cooperation (1920)** and **Quit India (1942)** movements.
   c. Earned the title *"***Sardar***"* (leader) for his success in Bardoli.
2. **Nation-Building (Post-1947):**
   a. **Integrated 560+ princely states** into the Indian Union through persuasion and firmness, avoiding the country's Balkanization.
   b. Established the **All India Services (IAS, IPS)**, the *"***Steel Frame***"* of India's administration.
   c. Strengthened **India's federal structure** while preserving **national unity**.

Ideology / Vision

1. **Unity in Diversity:** Patel saw India's strength in its pluralism many languages, faiths, and regions bound by a shared civilizational ethos.
2. **Strong Centre with Cooperative States:** He believed a powerful Union was vital to prevent disintegration, but also valued local governance.
3. **Discipline and Integrity:** Advocated for a disciplined civil service and clean politics.
4. **Pragmatism over Idealism:** His realism helped handle crises like **Hyderabad, Junagarh, and Kashmir** swiftly and decisively.

Significance

1. Patel's integration efforts **preserved India's territorial unity** after Partition.
2. His vision underpins **India's federal polity**, **civil service**, and **national integration policies**.
3. The **Statue of Unity (2018)** and **Rashtriya Ekta Diwas (since 2014)** symbolise his ideals.
4. His message: "**Manpower without unity is not a strength unless it is harmonised and united properly**"; remains relevant for India's diverse democracy.

Government Initiatives

1. **Rashtriya Ekta Diwas (National Unity Day)**: Observed on October 31 annually since 2014.
2. **'Run for Unity'**: Nationwide events reaffirming unity and integrity.
3. **Ek Bharat Shreshtha Bharat**: State and cultural exchange programme inspired by Patel's vision.
4. **Statue of Unity (2018)**: 182-metre statue at Ekta Nagar, Gujarat, honouring his role in unifying India.
5. **Panch Pran (Five Pledges)** under **Azadi ka Amrit Mahotsav** emphasizes national solidarity.

Conclusion

Sardar Patel's legacy reminds India that unity is a **continuous effort**, not a settled fact. His vision of **"Ek Bharat, Shreshtha Bharat"** remains the guiding light for India's strength, stability, and inclusiveness.

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LATEST GOVERNMENT SCHEMES

1. Row Over PM-SHRI Scheme in Kerala

Context

1. In **October 2025**, Kerala signed a **Memorandum of Understanding** (MoU) with the Central Government to implement the **PM Schools for Rising India (PM-SHRI)** scheme, reversing its earlier position.
2. This followed the Centre's decision to link the release of **Samagra Shiksha funds** with adoption of the scheme.
3. The move led to **policy-level discussions** within the state and debates over the **balance** between **state autonomy** and **national education reforms**.

What Is the PM-SHRI Scheme?

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1. The **PM Schools for Rising India (PM-SHRI)** scheme was launched in **2022** to develop **14,500 model schools** that demonstrate key features of the **National Education Policy (NEP) 2020**.
2. These schools are meant to serve as **"exemplars"** for other institutions, showcasing innovative teaching, skill-based learning, digital education, and inclusive infrastructure.
3. Each **PM-SHRI school must**:
   a. Implement **NEP 2020** recommendations such as **art-integrated and toy-based learning**.
   b. Introduce **vocational education** and establish **skill labs**.
   c. Focus on **competency-based assessment** instead of rote learning.
   d. Achieve **zero dropouts** and measurable improvement in learning outcomes.
   e. Funding follows a **60:40 Centre-State sharing model**, with allocation based on performance in the **School Quality Assessment Framework**.

Why Has Kerala's Decision Sparked Controversy?

1. Kerala had earlier expressed **concerns** about **PM-SHRI being tied to the NEP 2020,** citing **differences** with its existing **education framework**.
2. The recent MoU marked a policy shift, leading to **internal discussions** within the **ruling coalition** and **observations** from the **Opposition**.
3. The episode highlighted the **broader debate** over **education policy harmonisation** between the **Centre** and **states**.

Centre-State Funding Tensions

1. The **Samagra Shiksha scheme** supports **Right to Education (RTE) implementation, textbooks**, **uniforms**, and **inclusive education**.
2. The Centre linked **fund allocation** to **adoption** of **PM-SHRI,** due to which Kerala initially received **reduced allocations** (about ₹1,150 crore short for 2023–26).
3. To ensure continuity of **essential education programmes**, the state opted to sign the MoU, but clarified that it would only implement **select aspects of NEP**, retaining control over **curriculum and textbooks**.

Which States Are Implementing or Opposing PM-SHRI?

1. **Adopted by:** Karnataka, Telangana, Himachal Pradesh, and several others.
2. **Opposed or reserved:** Tamil Nadu and West Bengal, citing concerns over **educational autonomy**.
3. Some states such as **Delhi** and **Punjab** adopted the **scheme later** after **negotiations** on **funding mechanisms**.

Challenges and Way Forward

Challenges	Way Forward
1. Federal Tensions: States fear erosion of control over school education and curriculum design.	Strengthen **cooperative federalism** through Centre-State consultations, ensuring flexibility for states in implementing NEP components.
2. Linkage with NEP 2020: Mandatory adoption of NEP provisions creates apprehension among states with differing education models.	Allow **context-specific adaptation** of NEP principles; promote dialogue for consensus-based reforms rather than one-size-fits-all mandates.
3. Funding Dependency: Linking **Samagra Shiksha** funds to PM-SHRI compliance pressures states financially.	**Delink funding from compliance**; ensure predictable grants for essential schemes like RTE, textbooks, and inclusive education.
4. Political and Ideological Concerns: Opposition parties allege the scheme promotes centralisation and political branding.	Ensure **transparent implementation**, focus on outcomes, and highlight educational, not political, objectives.
5. Capacity and Infrastructure Gaps: Many state schools lack infrastructure and teacher training required for PM-SHRI standards.	Increase **capacity-building and infrastructure grants**, set phased targets, and share best practices from successful PM-SHRI schools.

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PLACES IN NEWS

Place	Context	Key Highlights
1. Bay of Bengal	A deep depression over the southeast Bay of Bengal intensified into **Cyclone Montha**, which affected Andhra Pradesh and nearby areas.	**Location:** Northeastern part of the Indian Ocean **Bordering Countries:** India (west), Bangladesh (north), Myanmar (east), and Sri Lanka & Andaman-Nicobar Islands (southwest & southeast). **Largest Bay in the world**. It contains the largest Delta of the world: **Sundarban Delta**. **Currents:** Dominated by monsoon currents — clockwise in winter, anticlockwise in summer. Prone to **tropical cyclones**, especially during pre- and post-monsoon seasons (Oct–Nov, May). **Economic Importance:** Major route for shipping, fisheries, and **offshore energy** exploration. **Strategic Significance:** Key region for India's maritime security, Sagarmala Project, and Indo-Pacific Strategy. **Environmental Concerns:** High risk of coastal erosion, sea-level rise, and marine pollution. **Ports:** Chennai, Visakhapatnam, Kolkata, Paradip, and Chittagong (Bangladesh).
2. India-Middle East Europe Economic Corridor (IMEC)	IMEC's progress faces uncertainty due to **West Asia conflicts** and **shifting global trade routes**.	**Launched:** G20 Summit, New Delhi (2023). **Partners:** India, Saudi Arabia, UAE, Jordan, Israel, and EU. **Aim:** Connect **India to Europe via the Middle East** using **rail, ports, energy pipelines, and digital cables**. **Purpose:** Strengthen trade, energy security, and connectivity as an alternative to China's Belt and Road Initiative (BRI). **Route:** India → UAE → Saudi Arabia → Jordan → Israel → Europe.
3. Sharm El-Sheikh	Sharm El-Sheikh hosts a high-stakes **peace summit** aimed at ending the two-year-long **Gaza conflict**.	**Location:** Coastal city on the southern tip of Sinai Peninsula, Egypt; lies between the **Red Sea and Mount Sinai**. **Significance:** Major venue for international climate and peace conferences — **hosted COP27 (2022).** **Known for:** Coral reefs, marine biodiversity, and eco-tourism. **Strategic Importance:** Lies near Strait of Tiran, a key maritime route linking the Red Sea and Gulf of Aqaba. **Climate:** Desert climate with minimal rainfall and high temperatures.

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4. Qatar	India has expanded its **Unified Payments Interface (UPI)** services to Qatar.	Qatar (Capital: **Doha**) Located in West Asia on the northeastern coast of the Arabian Peninsula. **Bordering Country:** Saudi Arabia. **Bordering Water Bodies:** Persian Gulf, Gulf of Bahrain. **Geographical Features:** Sand dunes and salt flats (Sabkhahs) form the chief topographical features. Possesses the **world's third-largest natural gas reserves** and is one of the world's largest exporters of natural gas.
5. Barbados	Lok Sabha Speaker led an **Indian Parliamentary Delegation (IPD)** to the National Assembly of Barbados on the sidelines of the **68th Commonwealth Parliamentary Conference**.	**Location:** Island country in the southeastern Caribbean Sea (North Atlantic Ocean), northeast of Venezuela, located near **Lesser Antilles** Lesser Antilles is a long arc of small islands in the Caribbean Sea extending in a north-south direction from the Virgin Islands to Grenada. Barbados is a member of the **Caribbean Community (CARICOM)** and **Commonwealth of Nations**. Geographical Features Highest point: Mount Hillaby Formed from sedimentary and coral deposits Surrounded by coral reefs, No major rivers or lakes.
6. Morocco and Madagascar	**Gen Z protests** erupted across Morocco after the **death of eight women during childbirth**, highlighting poor public services, rising inequality, and high youth unemployment amid **heavy government spending on FIFA World Cup 2030** projects.	**Location:** Island nation in the **Indian Ocean**, off the **southeast coast of Africa**. **Geographical Features:** World's **fourth-largest island**, divided by the central highlands. **Unique biodiversity:** over **80%** of **species** found **nowhere else on Earth**. **Economy:** **Key sectors:** Agriculture, mining, and tourism. Over **75%** of the population lives **below the poverty line**. **Demography:** About **50%** of the population is **below 18 years**.
7. Seneca Lake	Researchers have found over **140 underwater craters** on Seneca Lake and are testing for **methane gas leaks**, possibly explaining the centuries-old mystery of the **Seneca Guns** (loud booms) long reported by locals	**Location:** Central New York, part of the **Finger Lakes region**. **Type:** Freshwater glacial lake, deepest and largest of the Finger Lakes. Drains north into Seneca River and then into **Lake Ontario**. Supports **tourism, vineyards, fishing**, and moderates local climate.

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ETHICS

1. The Loneliness of Virtue

Why in the News?

1. This year, **Gandhi Jayanti and Vijayadashami coincided**, offering a reflective opportunity on the moral and spiritual legacies of Gandhi and Ram.
2. Both figures, despite being celebrated, are often remembered through a lens of **loneliness, moral struggle, and incomplete triumphs**, which resonates with contemporary ethical dilemmas.
3. Their solitude reflects the **burden of moral exemplariness** against the backdrop of political expediency and societal misunderstanding.

Ethical Issues Involved

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1. **Virtue vs. Political Expediency**
   a. Gandhi's moral truth clashed with the violence of Partition; Ram's dharma was clouded by Sita's banishment.
   b. Raises the Aristotelian dilemma of virtue not always aligning with political success.
   c. Moral exemplars often find themselves irrelevant in power structures.
2. **Loneliness of Moral Leadership**
   a. Gandhi's silence and Ram's anguish show the isolation faced by those upholding truth.
   b. Kant's principle of duty suggests that moral action must be performed regardless of recognition.
   c. Civil servants too may face alienation when pursuing integrity over convenience.
3. **Limits of Communication and Truth**
   a. Gandhi's withdrawal into silence highlights that sincerity cannot always be conveyed through words.
   b. Ram's limited speech shows the fragility of communication when truth is misunderstood.
   c. Echoes Habermas' idea that distorted communication undermines ethical consensus.
4. **Triumph Shadowed by Moral Loss**
   a. Ram's victory over Ravan was overshadowed by the injustice of Sita's exile.
   b. Gandhi's triumph of Independence was stained by Partition violence.
   c. Reflects Reinhold Niebuhr's realism: human achievements are imperfect and morally compromised.
5. **Ethical Relevance in Modern Governance**
   a. Both figures embody the tension between **duty, justice, and human suffering**.
   b. Raises questions of whether leaders today are willing to prioritize moral conscience over political gain.
   c. Civil servants like **E. Sreedharan (Metro Man)** showed how duty, perseverance, and ethical conviction can leave a legacy despite political hurdles.

Course of Action

1. **Integrating Moral Exemplarity into Public Life**
   a. Encourage political leaders and administrators to prioritize **dharma (duty-based ethics)** over expediency.
   b. Training programs for civil servants to strengthen moral courage in decision-making.
2. **Promoting Ethical Communication**
   a. Drawing from Gandhi's retreats into silence, focus on **transparent, sincere communication** in governance.
   b. Encourage leaders to communicate through actions rather than rhetoric.

3. **Balancing Power with Conscience**
   a. Institutional reforms to ensure that power is exercised with checks rooted in ethical responsibility.
   b. Gandhi's and Ram's examples remind us that **self-restraint is as important as authority**.
4. **Acknowledging the Complexity of Moral Choices**
   a. Civil servants should be trained to navigate "gray zones" of ethics where every victory may carry some moral loss.
   b. Inspired by Ram's and Gandhi's struggles, accept that **imperfect outcomes can still embody ethical worth**.
5. **Recovering Tradition for Contemporary Relevance**
   a. Instead of reducing Vijayadashami or Gandhi Jayanti to rituals, emphasize their **ethical lessons** of humility, sacrifice, and endurance.
   b. Draw from Indian philosophical traditions like the **Gita's Nishkama Karma (selfless duty)** to orient governance towards collective good.

Conclusion

The loneliness of Gandhi and Ram reminds us that moral truth is often inconvenient, misunderstood, and accompanied by suffering. Yet, their lives show that **endurance, silence, and ethical steadfastness** sustain the moral order when power falters. For India's present challenges, their example is not in celebration, but in the **quiet pursuit of conscience against expediency**.

2. Constitutional Morality

Why in the News?

1. The idea of **constitutional morality** features repeatedly in recent **Supreme Court judgments** (e.g., **Sabarimala**, **Puttaswamy**, **State v. NCT of Delhi**, **Manoj Narula**), making it central to debates about how public offices should behave.
2. Growing concerns about **political polarisation**, **appointments of controversial public figures**, and **institutional overreach** have renewed attention on whether legal rules alone can protect democratic values or whether **ethical norms** (**constitutional morality**) must guide action.

Ethical Issues Involved

1. **Conflict Between Law and Morality**
   a. **Core idea: Law** regulates what people must or must not do externally; **morality** concerns what people ought to do internally (their conscience and moral reasons).
   b. **Philosophical frame:**
      i. **Kantian (deontological)** view: morality is about duty and principles, one acts because it is right, not for consequences.
      ii. **Utilitarian** view (**Mill**): morality is about outcomes, greatest happiness for the greatest number.
      iii. These frameworks sometimes recommend different actions even when the **law** is the same.
   c. **Practical dilemma:** A **legal provision** may allow an action (e.g., appointing a person facing serious charges if law does not bar it), but **constitutional morality** may demand restraint because the appointment erodes public trust. This tension is visible in **Manoj Narula Case**, where the Court said it is expected to avoid appointing persons accused of heinous offences even if not legally barred.
   d. **Why it matters:** If courts **convert every moral expectation** into **enforceable law**, they risk **overstepping** into political choice; if they **ignore moral expectations**, **constitutional offices** may be **misused**. The **balance** determines whether **democracy** remains **principled** or becomes **merely procedural**.
2. **Distinction Between Conventions and Enforceable Law**
   a. **Dicey's distinction: Constitutional conventions** (habits, norms) guide conduct but are not judicially enforceable; **constitutional law** is enforceable.
   b. **Example:** The duty to seek collective Cabinet advice is a convention; courts **enforce legal limits** but may be **reluctant** to police all **conventions**.

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3. **Accountability and Ethical Leadership**
    a. **Problem:** Breaches of constitutional morality often produce **political**, **not legal**, **consequences** (loss of public trust, electoral punishment).
    b. **Example:** Civil servants who upheld **constitutional ethics** (like **T.N. Seshan** enforcing fair elections; **E. Sreedharan** in public projects) shows how **individual integrity** preserves **constitutional values**.
4. **Moral Foundations of Rights and Equality**
    a. **Constitution as moral text:** The **Preamble** and fundamental rights express moral commitments - **justice, liberty, equality, fraternity**.
    b. **Theoretical anchor: Rawlsian fairness** - policy must protect the least advantaged; failure to do so is a moral failure of the constitutional order.
5. **Role of Citizens - Moral Duty and Civic Education**
    a. **Citizens' duty:** Uphold **tolerance**, **constitutional literacy**, and participate in democratic processes.
    b. **Risk:** Rising **majoritarianism** or indifference erodes constitutional morality faster than any law can remedy.

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Course of Action

1. **Civic and Ethical Education**
    a. **What:** Include **constitutional values**, **ethics**, and **case-studies** in school and civil service training.
    b. **How:** Mandatory modules on **constitutional duties**, mock debates on landmark cases, and scenario-based ethical decision exercises.
    c. **Why:** Builds citizen and officer sensitivity to the **spirit** of the Constitution beyond its text.
2. **Ethical Leadership and Role Models**
    a. **What:** Encourage leaders to act as **trustees of public office** (Gandhian trusteeship).
    b. **How:** Public recognition for integrity; transparent performance records; clear conflict-of-interest rules.
    c. **Why:** Visible role models (e.g., **Ashok Khemka**'s ethical stands) change norms and expectations.
3. **Strengthen Institutions & Respect Conventions**
    a. **What:** Protect the independence of the **judiciary**, **Election Commission**, **CAG**, and other guardians.
    b. **How:** Rules to insulate institutions from political pressure; public reporting of breaches of conventions.
    c. **Why:** Well-functioning institutions translate moral norms into sustained public practice.
4. **Embed Ethical Appraisal in Policymaking**
    a. **What:** Require an **ethical impact statement** for major legislation and appointments.
    b. **How:** Cross-check against **constitutional values** (equality, dignity, non-discrimination) and solicit civil society inputs.
    c. **Why:** Prevents **myopic decisions** that are legal but morally corrosive.
5. **Accountability Mechanisms Beyond Courts**
    a. **What:** Political, administrative and civic remedies (parliamentary scrutiny, ombudsmen, media scrutiny).
    b. **How:** Strengthen parliamentary ethics committees, whistleblower protection, and independent inquiry panels.
    c. **Why:** Many breaches are political; remedies must therefore operate in political and civic spaces, not only in courts.

Conclusion

Constitutional morality transforms the Constitution from a legal text into a **moral compass** for public life. Sustained **education**, **ethical leadership**, and **robust institutions** are essential to ensure that constitutional guarantees become lived reality, not empty words.

ESSAY

The supreme art of war is to subdue the enemy without fighting.

The corridors of the Pentagon fell silent on a crisp October morning in 1962 as President John F. Kennedy faced perhaps the most perilous moment in human history. Soviet missiles in Cuba pointed toward American cities, military advisors clamored for immediate airstrikes, and the world teetered on the brink of nuclear catastrophe. Yet, in those thirteen days that shook the world, Kennedy chose a different path—one that would vindicate an ancient Chinese strategist's wisdom about the **supreme art of war.** Through diplomatic channels, economic pressure, and strategic patience, the crisis was resolved without a single shot fired, demonstrating that the **greatest victories** often emerge not from the battlefield's thunder, but from the **quiet mastery of conflict** itself.

This profound insight, attributed to the legendary military philosopher **Sun Tzu**, transcends its martial origins to illuminate a fundamental truth about human conflict resolution. The concept of **subduing the enemy without fighting** represents more than mere military strategy; it embodies a sophisticated understanding of power dynamics, psychological warfare, and the **art of achieving objectives** through means other than direct confrontation. In our contemporary world, where conflicts rage across multiple dimensions—from geopolitical tensions to corporate boardrooms, from social movements to personal relationships—this ancient wisdom offers a **transformative lens** through which to understand the nature of victory itself.

The essence of this philosophy lies not in weakness or avoidance, but in the **supreme intelligence** that recognizes force as often the least efficient path to lasting success. It speaks to the **strategic brilliance** that can neutralize opposition through understanding, outmaneuvering through wisdom, and conquering through the **superior application of non-violent power.** As we navigate an increasingly complex global landscape, this principle invites us to explore the multifaceted dimensions of conflict resolution and the **profound artistry** inherent in achieving victory through means that preserve rather than destroy.

The Psychology of Bloodless Victory

The **psychological dimension** of subduing enemies without fighting reveals the profound understanding that **true victory** lies not in the destruction of opposition, but in the **transformation of adversarial relationships.** At its core, this approach recognizes that human conflicts often stem from **misunderstanding, fear, and perceived threats** rather than irreconcilable differences. When **Mahatma Gandhi** led India's independence movement, he demonstrated this principle through **satyagraha** (truth-force) that converted enemies into allies through moral authority rather than physical coercion. The British Empire, faced with an opponent who refused to hate, found its traditional tools of suppression ineffective against an adversary who **weaponized compassion**.

This psychological warfare operates on multiple levels, beginning with the **fundamental reframing** of conflict itself. Rather than viewing opposition as something to be crushed, the strategic mind sees it as a **puzzle to be solved**, a relationship to be transformed. **Nelson Mandela's** approach to South Africa's transition from apartheid exemplifies this mastery-by choosing reconciliation over retribution, he not only avoided a potential civil war but created a "**Rainbow Nation**" where former oppressors became partners in building a new society. **The Truth and Reconciliation Commission** became a powerful instrument of **bloodless victory**, healing wounds that military conquest could never have addressed.

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The **cognitive dimension** of this approach involves understanding that **perception often matters more than reality** in determining outcomes. When **Steve Jobs** returned to Apple in 1997, he faced a company on the brink of bankruptcy, surrounded by competitors who seemed insurmountable. Rather than engaging in a direct price war or feature competition, Jobs **redefined the entire battlefield**- transforming Apple from a computer company into a **lifestyle brand** that made competitors' advantages irrelevant. The "**Think Different**" campaign didn't attack competitors; it made them appear **obsolete by creating an entirely new category** of consumer desire.

However, critics argue that this approach can be **naive in the face of genuinely malevolent forces.** The **Munich Agreement** of **1938**, where European powers attempted to appease Hitler through diplomatic concessions, demonstrates the **dangerous limitations** of non-confrontational strategies when dealing with actors who interpret restraint as weakness. **Winston Churchill's** prescient warnings about the futility of appeasing totalitarian regimes remind us that some conflicts require **direct confrontation** to prevent greater catastrophes. The challenge lies in **distinguishing between conflicts** that can be resolved through strategic patience and those that demand immediate, decisive action.

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Economic and Diplomatic Mastery

The **economic dimension** of subduing enemies without fighting has become increasingly sophisticated in our interconnected global economy. **Economic warfare** through sanctions, trade policies, and financial instruments can achieve strategic objectives that once required military intervention. The **collapse of the Soviet Union** provides a compelling case study- while military tensions remained high throughout the Cold War, it was ultimately **economic pressure and internal contradictions** that led to the peaceful dissolution of America's primary adversary. The **arms race** became an economic burden that the Soviet system could not sustain, demonstrating how **strategic patience and economic competition** could achieve what direct military confrontation might have made impossible.

Modern **diplomatic artistry** extends far beyond traditional negotiations to encompass **soft power projection**, cultural influence, and the **strategic use of international institutions**. **China's Belt and Road Initiative** exemplifies this approach—rather than using military force to expand influence, China is creating **economic dependencies and partnerships** that achieve strategic objectives through mutual benefit rather than coercion. This **21st-century silk road** demonstrates how **infrastructure investment and economic integration** can build spheres of influence more effectively than traditional military expansion.

The **technological dimension** adds new layers to this ancient wisdom. In cyberspace, the **supreme art of war** often involves **preventing attacks rather than responding to them. Estonia's response** to the 2007 cyber attacks demonstrates this principle—rather than retaliating militarily, the nation invested heavily in **cyber defense capabilities and international cooperation,** becoming a global leader in cybersecurity and hosting NATO's Cooperative **Cyber Defence Centre of Excellence**. This transformation from victim to leader illustrates how **strategic response** can turn apparent weakness into lasting strength.

Corporate strategy has embraced these principles through **market disruption and innovation**. When **Netflix** faced the dominance of traditional video rental chains, it didn't engage in a direct price war with **Blockbuster**. Instead, it **redefined the entire industry** through streaming technology, making physical rental stores obsolete. This **creative destruction** achieved total market victory without directly confronting competitors—they simply became irrelevant in the new paradigm Netflix created.

The **diplomatic revolution** in conflict resolution has produced institutions like the **European Union**, which transformed centuries of European warfare into **economic and political cooperation.** The **Franco-German reconciliation** after World War II demonstrates how former enemies can become **indispensable allies** through **strategic integration** rather than continued confrontation.

The **European Coal and Steel Community** made war between member nations not just unthinkable but **economically impossible**, achieving lasting peace through **mutual interdependence**.

Cultural and Ideological Transformation

The **cultural battlefield** represents perhaps the most sophisticated arena for applying the principle of subduing enemies without fighting. **Ideological victory** through cultural influence, education, and the **power of narrative** can achieve transformations that military conquest cannot sustain. The **American cultural hegemony** during the 20th century, through Hollywood films, popular music, and consumer brands, achieved a form of **soft conquest** that made direct military intervention often unnecessary. **McDonald's and Coca-Cola** became ambassadors of American values, creating cultural **affinity** that translated into political influence.

Educational transformation serves as a powerful instrument of **bloodless victory** by changing how future generations think about conflict itself. The **German education system's** post-war transformation, which included **mandatory Holocaust education** and **democratic values integration**, helped ensure that **Nazi ideology** could never again take root in German society. This **generational strategy** achieved a more complete victory over fascism than military defeat alone could have accomplished.

The **religious and philosophical dimensions** of this approach find expression in movements that **transform adversaries through moral examples. The Dalai Lama's** response to Chinese occupation of Tibet demonstrates how **spiritual resistance** can maintain cultural identity and international sympathy while avoiding the **futile military confrontation** that would have resulted in complete destruction. By choosing **non-violence and compassion** even toward oppressors, the Tibetan cause has gained **global moral authority** that military resistance could never have achieved.

Social movements have mastered the art of **subduing opposition through moral transformation**. The **American Civil Rights Movement** under **Martin Luther King Jr.** achieved legislative victories not through violent confrontation but by **exposing** the **moral contradictions** in American society. The **Birmingham Campaign** and **Selma marches** used non-violent resistance to force opponents to reveal their true nature, creating **national shame** that made continued segregation politically impossible. This **moral jujitsu** turned the oppressor's violence against them, achieving victory through **strategic suffering** rather than retaliation.

The **information age** has created new possibilities for **cultural transformation** through **digital platforms and social networks**. The **Arab Spring** demonstrated how social media could mobilize populations and **delegitimize authoritarian regimes** without traditional military organization. While the outcomes were mixed, the initial success in **Tunisia and Egypt** showed how **information warfare** and **popular mobilization** could achieve what decades of armed resistance had not accomplished.

The Paradox of Strength Through Restraint

The **philosophical paradox** at the heart of subduing enemies without fighting lies in the **counterintuitive relationship** between restraint and power. This principle suggests that true **strength** often manifests not in the **ability to destroy** but in the **wisdom to transform**. **Lao Tzu's** concept of **"wu wei"**- action through non-action- provides a complementary framework, suggesting that **strategic inaction** can be more powerful than forceful intervention. Water, the **softest element**, eventually carves through the hardest rock not through force but through **persistent, patient pressure.**

Modern conflict resolution has embraced this paradox through **restorative justice** systems that focus on **healing rather than punishment**. New Zealand's approach to juvenile crime, incorporating **Maori traditional justice** concepts, demonstrates how **addressing root causes** and **rebuilding relationships** can be more effective than punitive measures in preventing future conflicts. This approach **transforms offenders into stakeholders** in community healing, achieving **lasting peace** rather than temporary deterrence.

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The **environmental movement** exemplifies this principle through **market-based solutions** that make **sustainable practices profitable** rather than mandated. **Carbon trading systems** and **renewable energy incentives** achieve environmental objectives by **aligning economic interests** with ecological goals, making **former polluters into champions of clean technology.** This transformation of **adversaries into allies** through **strategic incentive alignment** demonstrates the **supreme art** of achieving objectives without coercion.

International mediation has evolved sophisticated techniques for **transforming zero-sum conflicts** into **win-win scenarios.** The **Camp David Accords** between Egypt and Israel succeeded because **President Carter** helped both sides **reframe their relationship** from **territorial competition** to **mutual recognition** and **cooperation**. By addressing **underlying needs** rather than **stated positions**, the mediation process **created new possibilities** that neither side had initially envisioned.

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However, this approach faces **significant limitations** when dealing with **ideologically driven conflicts** where **compromise** is **viewed** as **betrayal**. **Religious extremism** and **ethnic nationalism** often resist **rational negotiation** because they operate from **non-negotiable belief systems**. The **ongoing conflicts** in regions like **Afghanistan and Syria** demonstrate that some adversaries **cannot be subdued without fighting** because they **reject the fundamental premises** of peaceful coexistence.

The **digital age** has created new forms of **bloodless warfare** through **cyber operations**, **information campaigns**, **and economic disruption**. **Russia's interference** in democratic elections worldwide represents a **21st-century application** of subduing enemies without traditional fighting, **undermining democratic institutions** from within rather than confronting them militarily. This **hybrid warfare** achieves strategic objectives while **maintaining plausible deniability** and **avoiding direct confrontation**.

The **supreme art of war** in our contemporary context requires **unprecedented sophistication** in **understanding human psychology**, **economic systems**, **cultural dynamics**, and **technological capabilities**. As **artificial intelligence** and **quantum computing** reshape the landscape of conflict, the **ancient wisdom** of achieving victory without fighting becomes not just **strategically advantageous** but **existentially necessary**. In an age where **direct confrontation** between major powers could result in **civilizational destruction**, the **mastery of bloodless victory** represents perhaps **humanity's greatest strategic imperative**.

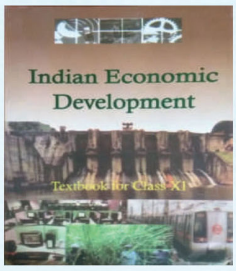
The **enduring relevance** of this principle lies not in its **pacifist implications** but in its **recognition of efficiency and sustainability**. **True victory** creates **lasting peace** rather than **temporary dominance**, **transforms relationships** rather than **merely defeating opponents**, and **builds foundations** for **future cooperation** rather than **cycles of revenge**. As we face **global challenges** that require **unprecedented cooperation**, from **climate change** to **pandemic response** to **technological governance**, the **supreme art** of subduing enemies without fighting offers a **pathway toward solutions** that **military victory** alone could never achieve.

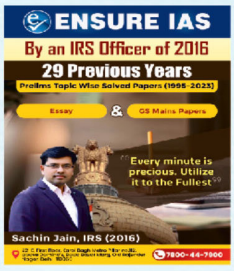
In the grand theater of human conflict, the **greatest strategists** have always understood that **the most elegant victory** is one that **leaves no enemies behind**, only **former adversaries** who have been **transformed into allies** through the **patient application** of **wisdom**, **compassion**, and **strategic brilliance**. This ancient art remains as relevant today as it was **twenty-five centuries ago,** offering **hope** that **humanity's greatest conflicts** can be **resolved** not through destruction but **through** the **supreme intelligence** that **creates peace** from the very forces that once threatened war.

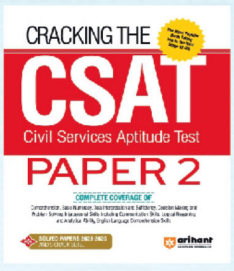
"The best victory is when the opponent surrenders of its own accord before there are any actual hostilities... It is best to win without fighting."

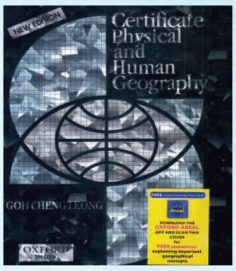
This **timeless wisdom** continues to illuminate **pathways** toward **peace** in a world that **desperately needs** the **courage to choose transformation over destruction**, **understanding over conquest**, and the **supreme art of victory** through **wisdom** rather than force.

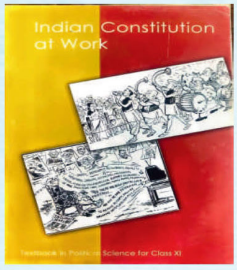
New List of Books to be provided to our classroom students since December 2023

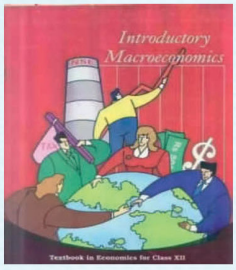


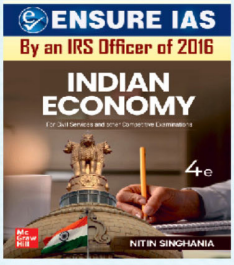


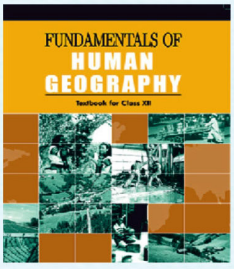


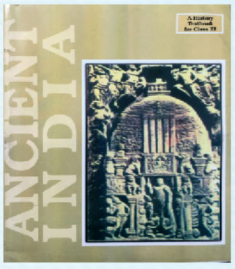


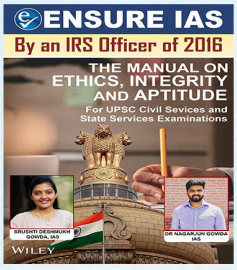


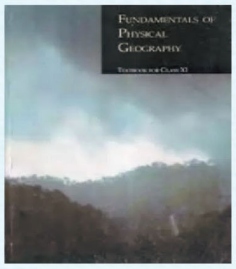


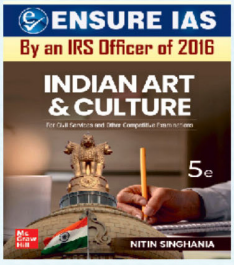


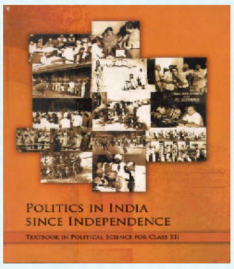


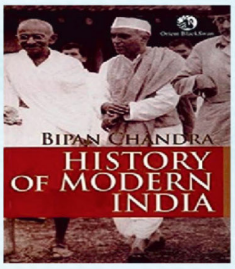


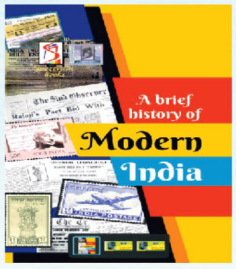


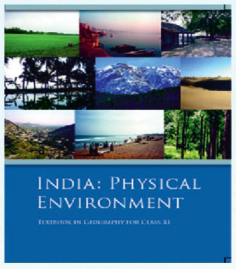


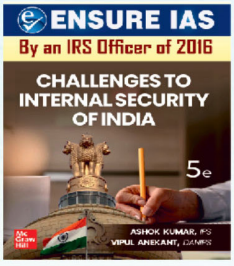


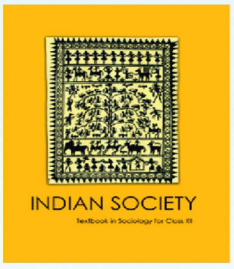


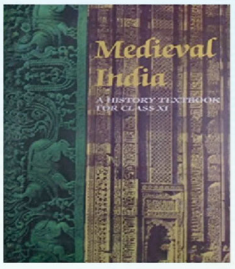


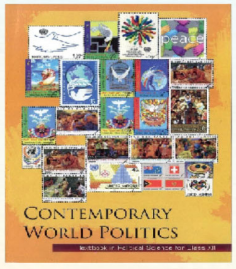


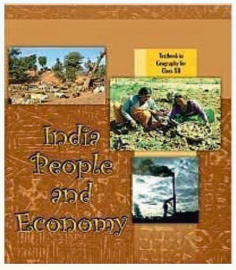


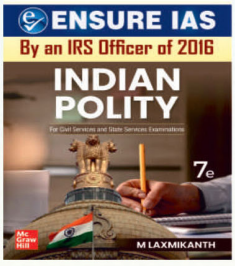


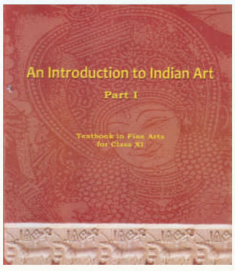












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