

9 PM Current Affairs Weekly Compilation

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Features :

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Institutionalising Animal Representation

UPSC Syllabus Topic: GS Paper - IV

Introduction

Modern democracy is built on a divide between humans and animals. Animals are treated as non-political beings, without voice or status. This creates structural injustice, not just individual cruelty. The core issue is how to redesign institutions so that animal interests are seen and protected within democratic decision-making.

Rethinking the human–animal divide in democracy

1. **Anthropocentric divide:** Modern political thought places humans at the centre, as the only rational and political beings. Animals are classified as “mere life”, outside politics. The single category “the animal” hides many non-human forms of life and is used as a negative mirror to define human superiority in language, reason and agency.

2. **Structural erasure of animal interests:** Law and institutions usually treat animals as property. Their interests are not systematically recorded, weighed or defended in public decisions. Because there are no dedicated channels to bring their standpoint into policy, large-scale harm can occur as an unnoticed background to economic and administrative activity.

3. **Artificial categories:** The human–animal divide rests on an artificial picture of animals as a single, inferior block. In reality, animals are a heterogeneous group, and different kinds of beings create different types of moral and political duties for humans. This mismatch between reality and inherited categories distorts how responsibilities are understood.

4. **From compassion to political responsibility:** The core issue is not inadequate compassion but the structure of democracy. Animals are excluded from decision-making even though they are affected by collective choices. Humans therefore become morally and politically accountable for how institutions treat dependent, vulnerable beings whose interests they cannot express on their own.

Meaning of animal representation in democracy

1. **From charity to accountability:** Animals should not depend on occasional kindness. Human choices on land, food, environment and security shape their lives. Representation means giving this vulnerability a place in public decisions, with **sentience and bodily experience** as the basis for including animal interests.

2. **Structured trusteeship:** Because animals cannot speak or vote, humans must act as **authorised guardians** with a mandate to study animal needs and present them in law-making and administration. Representation here is **structured trusteeship** inside institutions, not loose goodwill-based activism.

3. **Rejecting human-centric standards:** Representation does not require animals to resemble humans or hold rights such as voting. It rests on the fact that they can suffer, flourish and be harmed, so political standing should follow from these **morally relevant capacities**, not from human-style intelligence or behaviour.

Working of fiduciary institutions for animals

1. Need for non-majoritarian guardians

- Animals lack votes and lobbying power, so majority politics bypasses them. Welfare frameworks are reactive, acting only after harm occurs.
- Democratic legitimacy therefore needs **non-majoritarian pathways of representation**, through fiduciary institutions whose sole mandate is to articulate animal interests in legislative, administrative, and regulatory processes.
- This mirrors institutions that protect children, the environment, data, and future generations, extending the **same logic consistently to animals**.

2. Trusteeship, independence and expertise

- These institutions rest on the idea that humans serve as **trustees for animals**. Trustees must protect animal interests with care, loyalty and prudence, not human convenience or profit. For this, institutions require fixed terms, transparent appointments and secure, independent budgets•
- Independence is crucial because governments gain from animal exploitation and because animal interests require expert knowledge in behaviour and welfare.

3. Risks of weak or captured institutions: Without independence or urgency, such bodies turn symbolic and fail the very animals they are meant to protect.

Way forward

1. Multi-level representation and rule-based procedures

- Animal-representation bodies should work at several levels of government. At the executive level, advisory councils can review proposed rules for their animal welfare impacts.
- In Parliament, dedicated committees or subcommittees can examine relevant legislation, propose amendments, and demand impact assessments.
- Non-voting expert delegates can ensure that animal interests enter core law-making spaces through stable procedures.

2. Accountability and transparency:

- Clear procedures, timelines and checklists should guide reviews so that animal interests are regularly assessed.
- Independent evaluations, published for the public, courts and civil society, should show recommendations and how authorities responded.

3. Phased implementation: Reform should start with pilot projects in sectors such as urban planning. Experience from these pilots should refine tools and data systems before extending the model more widely.

4. Sustainable funding: Stable financing is essential for independent work. Funds can come from reallocating harmful subsidies and creating dedicated budget lines.

5. Public education and citizen engagement: Public campaigns should explain why animal representation supports justice and democratic responsibility. Schools, media and civic forums can promote everyday care towards animals, helping representatives gain backing for stronger protections.

Conclusion

Institutionalising animal representation deepens democracy by making vulnerable beings part of political judgement. Fiduciary bodies with clear powers, independence and expertise can speak for animal interests that cannot appear on their own. Gradual rollout, secure funding and public support are necessary so that animal welfare becomes a routine part of law, policy and everyday administration.

Question for practice:

Examine why modern democracies need to rethink the human-animal divide and institutionalise fiduciary mechanisms for animal representation.

Source: [The Hindu](#)

Inflation Targeting and Beyond

UPSC Syllabus Topic: GS Paper 3 -Inflation

Introduction

India uses inflation targeting to guide monetary policy, but recent experience shows sharp price swings and mixed results. Food inflation has shifted strongly, while repo rate changes often looked weak. As the current flexible inflation targeting framework ends in March 2026, India must reassess what has worked, where it falls short, and how it should evolve.

India's Flexible Inflation Targeting (FIT)

1. **Origin:** In 2016, India adopted the **Flexible Inflation Targeting (FIT)** framework with a **4% inflation target and a tolerance band of +/- 2%**, and gave institutional autonomy to monetary policy through the Monetary Policy Committee.

2. Objectives and macro-fiscal context

- Under **Flexible Inflation Targeting (FIT)**, policy aims to keep inflation near 4% within the 2%–6% band to protect savings and investment and curb the **regressive impact of high inflation** on poorer households.
- Earlier inflation from monetised deficits led to ending ad hoc treasury bills and adopting the **Fiscal Responsibility and Budget Management (FRBM) Act** to discipline fiscal policy and support price stability.

Performance: Inflation has been more range-bound after 2016. However, **annual average CPI inflation has exceeded 4% in six of nine FIT years**, so the target has not been met consistently.

Concerns with the current inflation targeting framework

1. Limited impact of monetary policy on core inflation

- Core inflation excludes food, fuel, petrol and diesel and has a **weight of 45%** in the CPI basket. It has often stayed **above 4%** even when headline inflation has fallen **below 2%**.
- This pattern suggests that repo rate changes have not clearly reduced core inflation, and claims of bigger impact under FIT remain **unproven**.

2. Headline versus core inflation and use of the band

- Headline inflation, which includes food prices, is more relevant to protect savings, investment and the poor. Food and headline inflation move together, with a correlation of 0.89, showing that food prices dominate CPI.
- The target of 4% with a 2%–6% band gives flexibility, but if inflation stays near 6% for long, it weakens both the framework and growth.
- Studies find that the inflation–growth relationship changes around 3.98%, which supports using **4% as the central target** for India.

3. Distributional impact and inflation expectations: Lower-income households feel inflation more when **food prices rise**, so their expectations are strongly shaped by food inflation. Anchoring expectations, therefore, needs **sustainably low and less volatile food inflation**.

Way forward

1. Continue targeting headline inflation: Headline CPI should remain the main target in India because it reflects the price changes that households actually face, especially poorer groups.

2. Place food inflation at the centre of policy: Food inflation drives headline CPI and strongly shapes what people expect about future inflation. Keeping food inflation low and less volatile needs better storage, logistics, market integration, buffer stocks, and suitable trade and stock policies, which lie mostly outside conventional monetary policy.

3. Ensure shared responsibility of RBI and government: Inflation control must be a joint task. The RBI should use interest rates and communication under FIT, while the government acts on supply, especially food and other key items, keeping income distribution in mind.

4. Align inflation targeting with fiscal rules: Flexible Inflation Targeting (FIT) must work together with **FRBM like fiscal discipline** so that deficits and government borrowing do not create persistent inflation and undermine the **4 %** target.

Conclusion

India's inflation targeting framework has given structure and autonomy to monetary policy, but its success is uneven and heavily dependent on food prices. Evidence on durable core inflation control and firm expectation anchoring remains limited. The next framework must keep headline targeting, manage food inflation, align fiscal rules and shield poorer households from the costs of inflation.

Question for practice:

Discuss the effectiveness and limitations of India's current inflation targeting framework in light of recent trends.

Source: [Businessline](#)

Energy Policy tradeoffs in times of AI and Climate Change

Source: The post "Energy Policy tradeoffs in times of AI and Climate Change" has been created, based on "In era of AI and climate change, energy policy must navigate new trade-offs and dilemmas" published in "Indian Express" on 1st December 2025.

UPSC Syllabus: GS Paper-3- (Environment, Energy, Economy, Technology)

Context: India's energy policy has traditionally focused on universal access, affordability and security of supply, and it has achieved significant progress in electrification and diversification. However, the rise of climate change concerns and the rapid expansion of AI and data-centre-driven electricity demand have created a new set of complex trade-offs. These trade-offs require the government to balance economic development, technological growth, energy security and environmental sustainability simultaneously.

The New Energy Policy Dilemma

1. India's energy policy must now simultaneously promote economic growth, technological innovation, environmental sustainability, energy security and social equity.
2. These objectives often conflict with one another, making energy decision-making more complex than in earlier decades.

Sources of Emerging Trade-offs

1. Growth vs Environment

- a. India's economic expansion requires greater energy consumption, increasing pressure on fossil fuel use.
- b. Continued fossil dependence undermines climate commitments and contributes to environmental degradation.

2. Technological Demand vs Grid Capacity

- a. The rise of AI and data centres has sharply increased demand for uninterrupted, high-quality electricity. Meeting this new demand requires major investments in transmission networks, battery storage and renewable baseload capacity.
- b. States struggle to balance industrial energy needs with decarbonisation commitments, seen in Maharashtra's delay of a thermal plant closure to support data centres.

3. Energy Security vs Market Vulnerability

- a. The transition to clean energy technologies increases dependence on critical minerals like lithium, cobalt and rare earths.
- b. China dominates processing and manufacturing of these minerals, exposing India to strategic vulnerabilities.

4. Affordability vs Decarbonisation

- a. Renewable transition requires high upfront capital investments, raising near-term costs.
- b. Political pressures make tariff increases, subsidy rationalisation or fossil-fuel reduction difficult.

5. **Domestic Fossil Resources vs Sustainability Goals**

- a. New hydrocarbon discoveries in countries like Brazil and Guyana may tempt India to rely on cheaper fossil imports.
- b. Such choices may conflict with India's long-term climate objectives and net-zero commitments.

Challenges

1. India faces a widening demand-supply gap as industrial growth, AI workloads and data centres increase electricity needs.
2. Transmission and storage infrastructure remains inadequate for large-scale renewable integration and 24×7 clean power.
3. State governments often delay thermal plant closures to meet industrial and digital load, conflicting with climate goals.
4. Political constraints hinder tariff reforms, subsidy rationalisation and reductions in fossil-fuel dependence.
5. Heavy reliance on China-dominated mineral supply chains exposes India to geopolitical risks.
6. Fragmented governance across PSUs, private companies and multiple ministries creates policy delays and inefficiencies.
7. The need to maintain affordable energy conflicts with the high cost of clean-tech transition and grid modernisation.
8. India's energy governance includes PSUs, private players, regulators and consumers, increasing coordination challenges.
9. Effective policymaking requires stronger regulatory capacity and integration across power, renewables, climate, industry and digital ministries.

Way Forward

1. India should modernise its electricity grid by expanding high-capacity transmission corridors, boosting battery storage and strengthening renewable baseload systems.
2. The country must diversify critical mineral supply chains through domestic exploration, global sourcing partnerships and recycling technologies.
3. A balanced energy mix should integrate renewables with flexible thermal power, nuclear energy, offshore wind and green hydrogen.
4. Tariff reforms and subsidy restructuring should be phased in gradually to avoid burdening vulnerable consumers while supporting clean energy goals.
5. Clear regulatory frameworks should guide energy use in data centres and AI-driven industries to ensure efficiency and predictability.
6. Stronger inter-ministerial coordination is required to align energy, climate, industrial and digital policies.
7. India should invest in research and innovation related to storage technologies, grid digitalisation, renewable manufacturing and waste-to-energy systems.
8. A unified long-term national energy strategy should ensure coherence across public and private sector institutions.

Conclusion: India's energy policy now confronts complex trade-offs driven by climate imperatives, rising AI and data-centre energy demand, supply-chain vulnerabilities and the need for economic growth. Addressing these challenges requires a diversified energy mix, robust governance and sustained investment in clean and

resilient infrastructure. A coordinated and forward-looking approach is essential to meet the demands of both the climate era and the AI-driven digital revolution.

Question: In the context of rising AI-driven electricity demand and escalating climate change concerns, India's energy policy must navigate a new set of trade-offs between growth, sustainability, energy security and affordability. Discuss the emerging challenges and suggest a way forward

How Pakistan's judiciary is being undermined

Source: The post “How Pakistan's judiciary is being undermined” has been created, based on “How Pakistan's judiciary is being undermined : Explained” published in “The Hindu” on 1st December 2025.

UPSC Syllabus: GS Paper-2- Polity and Constitution

Context: Pakistan's Parliament has passed the 27th Constitutional Amendment, which has triggered a major debate about the future of judicial independence in the country. The amendment has created a new Federal Constitutional Court (FCC) and has reduced the Supreme Court's traditional constitutional authority.

Has the Judiciary–Executive Conflict Occurred Earlier?

1. Pakistan has a long history of tension between the judiciary, the executive and the military Establishment.
2. Earlier courts used the “Doctrine of Necessity” to legitimise military coups by Ayub Khan, Yahya Khan and Zia-ul-Haq.
3. The 1990s saw repeated confrontations, including judicial decisions supporting or striking down the dismissal of elected governments.
4. Nawaz Sharif's attempt to remove the Chief Justice in 1996 even led to his supporters storming the Supreme Court.
5. The Panama Papers verdict of 2017 and the 2007 Lawyers' Movement show the judiciary's more assertive phases, which have increasingly worried both political and military actors.
6. Recent allegations of intimidation by intelligence agencies have intensified concerns about external interference in judicial functioning.

Why Has the 27th Amendment Created a New Federal Constitutional Court?

1. The 27th Amendment establishes the FCC to hear cases on constitutional interpretation, federal–provincial disputes and fundamental rights.
2. The creation of the FCC removes these matters from the Supreme Court's original jurisdiction, thereby restricting its powers as the guardian of the Constitution.
3. The government argues that the FCC will reduce the burden on the Supreme Court, but critics believe it is meant to curb the Court's involvement in politically sensitive issues.
4. The speed of FCC appointments suggests an attempt by the executive to shape constitutional adjudication through judges more aligned with its **interests**.

Does the Amendment Curtail the Role and Powers of Pakistan's Supreme Court?

1. The Supreme Court can no longer hear cases relating to constitutional interpretation, which weakens its foundational role.

2. The amendment reduces the Supreme Court to an appellate court and sidelines it from matters that define the balance of power in the state.
3. The executive has been given the power to transfer judges without their consent, which threatens judicial autonomy and increases the risk of punitive or politically motivated transfers.
4. The judiciary has become internally divided as some judges have resigned in protest while others have accepted positions under the new system, further weakening institutional resistance.

What Did the 26th Amendment Mandate?

1. The 26th Amendment changed the composition of the Judicial Commission of Pakistan by increasing the presence of executive members, thereby reducing judicial dominance.
2. It also shifted the power of appointing constitutional benches from the Chief Justice of Pakistan to the JCP, diluting the internal autonomy of the Supreme Court.
3. The 26th Amendment laid the groundwork for greater political control over the higher judiciary, which the 27th Amendment has deepened.

Implications of the 27th Amendment

1. The amendment weakens the independence of the judiciary by curtailing the Supreme Court's constitutional jurisdiction.
2. It strengthens executive and military influence over judicial appointments, transfers and constitutional cases.
3. It re-politicises the system that the 18th Amendment (2010) had tried to depoliticise by strengthening the Judicial Commission.
4. A divided judiciary becomes less capable of protecting constitutional norms or resisting executive overreach.
5. The shift upsets the principle of separation of powers and endangers the checks and balances necessary for stable constitutional democracy.

Way Forward

1. Pakistan must restore the Supreme Court's original jurisdiction over constitutional and federal matters to preserve judicial independence.
2. Reforms in the Judicial Commission should reduce executive influence and re-establish judicial primacy in appointments.
3. Transparent procedures for judicial transfers and postings are necessary to prevent misuse of executive authority.
4. Greater unity among the judiciary, legal fraternity and civil society is essential to resist political interference.
5. Institutional dialogue, rather than confrontational politics, is needed to rebuild trust and uphold constitutional balance.

Conclusion: The 26th and 27th Amendments collectively mark a significant weakening of the higher judiciary in Pakistan. The creation of the FCC and the diminishing role of the Supreme Court undermine the separation of powers and give the executive and military Establishment greater control. A strong and independent judiciary remains crucial for safeguarding democracy, accountability and constitutional governance in Pakistan.

Question: The 26th and 27th Constitutional Amendments in Pakistan reflect a deeper attempt to restructure judicial power and tilt the balance of authority towards the executive. Examine the historical context, key provisions, implications, and the way forward.

PM Modi stresses policing reforms

Source: The post “PM Modi stresses policing reforms” has been created, based on “PM Modi stresses policing reforms, tech integration at DGPs conference in Raipur” published in “Hindustan Times” on 2nd December 2025.

UPSC Syllabus: GS Paper-2- Governance

Context: Prime Minister Narendra Modi, while addressing the 60th All India Conference of DGPs and IGPs at IIM Raipur, emphasised the need to align policing with the national vision of *Viksit Bharat*. He highlighted modernisation, technology adoption, citizen-centric governance, and strengthening of urban and forensic policing as core priorities.

Key Directions Given to Police Leadership

- 1. Realigning Policing with Viksit Bharat:** The Prime Minister stressed that policing must be aligned with the national aspiration of building a developed India. He urged the police to enhance professionalism, sensitivity, and responsiveness in day-to-day interactions. He emphasised that the police must work to improve public perception and deepen youth engagement.
- 2. Strengthening Urban and Tourist Policing:** He stated that rapidly expanding urban areas require dedicated urban policing frameworks to manage complex law-and-order challenges. He called for the reinvigoration of tourist police to ensure safety and improve India's global tourism image.
- 3. Increasing Awareness of New Criminal Laws:** He highlighted the need to spread awareness about the Bharatiya Nyaya Sanhita, Bharatiya Sakshya Adhiniyam, and Bharatiya Nagrik Suraksha Sanhita. He underlined that smooth transition from colonial-era laws to the new legal system requires mass public understanding.
- 4. Enhancing Use of Technology:** He urged State and UT police forces to integrate NATGRID-linked databases with Artificial Intelligence to generate actionable intelligence. He pointed out that technology-driven and data-backed policing will enhance preventive and investigative capacities.
- 5. Improving Forensic Capabilities:** He encouraged universities and academic institutions to conduct case studies on forensic use in investigations. He noted that deeper forensic application will make investigations more scientific and reinforce the criminal justice system.

Significance for Viksit Bharat

- 1. Strengthened Internal Security:** Technology-enabled and integrated policing enhances early detection of threats and enables faster responses
- 2. Improved Citizen-Centric Governance:** Professional, sensitive, and law-aware policing increases public trust and strengthens democratic governance

3. **Safer and Better-Managed Cities:** Specialised urban policing contributes to economic vibrancy and improves urban liveability
4. **Boost to Tourism:** Dedicated tourist police improve visitor safety and support India's global tourism potential
5. **Modern and Scientific Justice System:** Enhanced forensic use promotes evidence-based investigations and higher conviction rates.

Challenges in Achieving These Goals

1. **Capacity and Skill Gaps:** Many police personnel lack advanced skills in cybercrime detection, AI usage, and forensic techniques. There is wide variation in training standards across states, leading to uneven preparedness.

2. **Resource and Infrastructure Limitations:** Several states face shortages of modern equipment, surveillance tools, and accredited forensic laboratories. Budget constraints hinder uniform technological modernisation across the country.

3. **Human Resource Constraints:** India continues to have a low police-to-population ratio, which affects timely and quality service delivery. Long working hours and occupational stress reduce the sensitivity and responsiveness of personnel.

4. **Public Trust and Perception Issues:** Legacy issues such as delays, corruption, and occasional misuse of force continue to affect police credibility. Weak community engagement prevents the development of cooperative policing relationships.

5. **Implementation Challenges of New Laws:** The rollout of the new criminal laws requires retraining, administrative restructuring, and public outreach. Lack of awareness may lead to procedural confusion during the transition period.

6. **Technology and Cyber Risks:** Increased digitisation exposes police systems to potential cyberattacks and data breaches. There is a need for uniform standards for managing digital evidence and protecting sensitive databases.

Way Forward

1. **Strengthening Training and Capacity Building:** Police forces need sustained training programmes in AI, cybercrime, forensic science, and soft skills
2. **Investing in Modern Infrastructure:** States must expand surveillance systems, integrated command centres, and high-quality forensic labs
3. **Promoting Community Policing:** Police should institutionalise community partnerships through beat policing and neighbourhood safety committees
4. **Ensuring Smooth Implementation of New Laws:** Government agencies must develop clear guidelines, online training modules, and public awareness initiatives
5. **Deepening Academic-Police Collaboration:** Police institutions should work closely with universities to promote criminology research and forensic audits
6. **Enhancing Urban Safety Planning:** Urban policing strategies should be integrated with smart city planning, women's safety frameworks, and emergency response systems.

Conclusion

The Prime Minister's directions highlight a clear shift towards modern, technology-enabled, and citizen-first policing. Addressing existing challenges through training, infrastructure upgrades, legal awareness, and community engagement will be crucial in building a secure, efficient, and people-centric policing ecosystem aligned with the vision of *Viksit Bharat*.

Question: Modern, technology-enabled and citizen-centric policing is essential for realising the vision of Viksit Bharat. Discuss the key challenges in transforming India's policing system and suggest measures to strengthen its role in national development.

Give states their fair share, protect their fiscal space

Source: The post "Give states their fair share, protect their fiscal space" has been created, based on "Give states their fair share, protect their fiscal space" published in "Indian Express" on 2nd December 2025.

UPSC Syllabus: GS Paper-2- Polity

Context: The Indian fiscal federal system requires both the Union and the states to possess adequate and predictable resources to meet rising developmental and governance challenges. States have increasingly expressed concerns about shrinking fiscal space, making fair tax devolution and grants crucial for cooperative federalism.

Trends in States' Fiscal Space

1. Expansion during the 14th Finance Commission

- a. **Higher Devolution Share:** The 14th Finance Commission significantly enhanced states' share in the divisible pool of central taxes from **32% to 42%**, expanding their fiscal autonomy.
- b. **Rise in Tax Share:** The share of states in central taxes relative to combined revenue receipts rose from **15% (13th FC) to 19.2% (14th FC)**, marking a rise of 4.25 percentage points.
- c. **Improved Post-Transfer Share:** The post-transfer share of states in combined revenue receipts increased from **63.85% to 68.08%**, reversing the earlier Centre-state balance.

2. Reduction in Fiscal Space

- a. **Overall Decline:** States' revenue receipts (as a share of combined revenue receipts) fell from **68.08% (14th FC) to 67.39% (15th FC)**, indicating a fall of 0.70 percentage points.
- b. **Lower Tax Devolution:** This decline was driven primarily by a reduction in tax devolution from **19.2% to 18.2%**, amounting to a fall of 1.05 percentage points.
- c. **Only Partial Compensations:** Although FC and non-FC grants increased slightly, total transfers still recorded a minor reduction of **0.23 percentage points**.
- d. **Reduced Own Revenues:** States' own revenue receipts also declined from **37.72% to 37.35%**, reducing their independent fiscal space.

Structural Causes

1. **Rise in Cesses & Surcharges:** An increasing reliance on non-sharable cesses and surcharges by the Centre has reduced the size of the divisible pool
2. **GST-Related Concerns:** The discontinuation of the GST compensation cess and rate reductions under GST 2.0 have created risks for states' GST revenue buoyancy.

3. **Impact of State Reorganisation:** The reorganisation of states into 28 units also influenced distributional outcomes under the 15th FC.

Impact on High-Income States

1. **Five High-Income States:** High-income states such as Haryana, Karnataka, Kerala, Maharashtra and Tamil Nadu show unique fiscal patterns across FC cycles.
2. **Offsetting Trends (13th → 14th FC):** During the 13th to 14th FC transition, their fiscal space remained stable because higher transfers were offset by reduced own revenue performance.
3. **Decline (14th → 15th FC):** These states experienced a reduction of **0.38 percentage points** in their fiscal space during the 15th FC period.
4. **Reasons for Decline:** The fall was due to a **0.25 percentage-point** decline in own revenue receipts and a **0.13 percentage-point** decline in central transfers.
5. **Formula-Linked Issues:** Increased dependence on cesses and the weightage of the distance criterion in horizontal devolution contributed to their adverse outcomes.

Key Challenges

1. **Rising Expenditure Responsibilities:** States face increasing demands in health, education, infrastructure and social welfare without corresponding increases in their revenue space.
2. **Shrinking Divisible Pool:** The growing share of unshared cesses and surcharges reduces predictability and fairness in resource transfers.
3. **GST Instability:** GST structural issues, including compensation withdrawal and rate rationalisation, weaken states' fiscal stability.
4. **Horizontal Imbalance:** High-income states feel relatively disadvantaged by the current horizontal devolution formula that emphasises equalisation parameters.

Way Forward

1. **Reduce Cesses & Surcharges:** The divisible pool must be strengthened by limiting the use of non-sharable cesses and surcharges by the Centre.
2. **Reform Horizontal Formula:** The 16th Finance Commission should re-examine the weight of the distance criterion and reward revenue effort more effectively.
3. **Enhance Tax Buoyancy:** Both the Centre and states must broaden the tax base, improve compliance and strengthen GST administration to boost revenues.
4. **Stabilise GST Revenues:** GST reforms should ensure long-term stability for states through rational rate structures and transitional support.
5. **Predictable Grants:** Non-FC grants should be made more transparent, rules-based and predictable to reduce discretionary distortions.
6. **Strengthen Fiscal Federalism:** Centre–state coordination through platforms like the GST Council must be enhanced to promote cooperative fiscal federalism.

Conclusion: Protecting the fiscal space of states is essential for achieving national development targets and sustaining cooperative federalism. A fair, transparent and buoyant system of revenue sharing—supported by strong tax collections at both levels—is critical to ensure states receive their rightful share and remain fiscally empowered.

Question: Shrinking fiscal space of states is undermining cooperative federalism. Discuss.

How polygamy is regulated in India, from personal laws to state bans

UPSC Syllabus- GS 2- Issues related to Fundamental rights and constitution

Introduction

Polygamy in India lies at the meeting point of personal laws, criminal law and new state-level reforms. The Assam Prohibition of Polygamy Bill, 2025, following Uttarakhand's Uniform Civil Code, challenges earlier exemptions under Muslim and tribal laws. This new push to criminalise polygamy has revived debates on gender justice, equality and a future Uniform Civil Code.

What is polygamy?

Polygamy is the practice of being married to more than one person at the same time.

Types of polygamy

- **Polygyny:** A man is married to more than one woman at the same time. This is the most common form of polygamy globally.
- **Polyandry:** A woman is married to more than one man at the same time. This is much less common.
- **Group marriage:** Three or more adults are married to one another, and all adult members are responsible for the group's children.

Status of Polygamy in India

- According to NFHS-5, polygamy is **2.1% among Christians, 1.9% among Muslims, 1.3% among Hindus and Buddhists, 0.5% among Sikhs and 2.5% among other religions or castes.**
- **Highest incidence among the Scheduled Tribes:** Compared to the national average of 1.4 per cent (NFHS-5), the rate of polygamy was 2.4 among STs, 1.5 among SCs, 1.3 among OBCs and 1.2 among others.
- **High prevalence in North Eastern states District:** East Jaintia Hills (20%), Kra Daadi (16.4%), West Jaintia Hills (14.5%), and West Khasi Hills (10.9%) have particularly high rates of polygynous marriages.
- The **2011 Census** records **28.65 crore married men and 29.3 crore married women**, a difference of **65.71 lakh**.
- **Decrease in polygamous marriages:**
 - A study by the International Institute of Population Sciences (IIPS) titled '**Polygyny in India: Levels and Differentials**' has analysed data from the NFHS-3 (2005-06), NFHS-4 (2015-16) and NFHS-5 (2019-21). It showed that **polygynous marriages** (one man married to more than one woman at a time) have **decreased from 1.9% in 2005-06 to 1.4% in 2019-21**, among the whole population.
 - Among **Buddhists**, the rate dropped from **3.8% to 1.3%**, sharpest decline of **65.79%**.
 - The incidence of polygyny in the total population fell by 26.31%.

Current Legal Status of Polygamy in India

The Hindu Marriage Act, 1955

The **Hindu Marriage Act, 1955** (for Hindus, Buddhists, Jains and Sikhs), **Parsi Marriage and Divorce Act, 1936**, **Indian Christian Marriage Act, 1872** and **Special Marriage Act, 1954** all treat a second marriage during the lifetime of a spouse as **void**, and **Section 17 of the Hindu Marriage Act** makes such bigamy an offence.

Under **Section 82 of the Bharatiya Nyaya Sanhita / Section 494 IPC**, marrying again while a spouse is alive attracts **up to seven years' imprisonment and fine**

Muslim personal law

The **Muslim Personal Law (Shariat) Application Act, 1937** permits a **Muslim man to have up to four wives**, so bigamy provisions are usually not used against such unions.

This **asymmetry**, where polygamy is a crime for some and a right for others, drives debates on **Article 44** and a UCC.

State Bans Polygamy

Goa follows the **Portuguese Civil Code, 1867**, which requires civil registration and generally enforces **monogamy**, so a Muslim man cannot legally take a second wife.

- The **Codes of Usages and Customs of Gentile Hindus of Goa** still allow a Hindu man to remarry if his wife fails to conceive by 25 or bear a male child by 30.

The **Uttarakhand Uniform Civil Code, 2024**, bans bigamy for all residents and makes **absence of a living spouse** a basic condition for marriage.

The Assam Prohibition of Polygamy Bill, 2025

- It makes polygamy a **cognisable** and **non-bailable** offence.
- It provides for **imprisonment of up to seven years with fine**, which can increase to **ten years** if the earlier marriage is **concealed from the new spouse**.
- A person convicted under this law is **barred from state-funded public employment**. Such a person is also **disqualified from contesting elections in Assam**, and
- This law does **not apply to Scheduled Tribes or Sixth Schedule areas** like the Bodoland Territorial Region and the hill districts.

Judiciary Views on Polygamy in India

Parayankandiyal v. K. Devi & Others (1996): The Supreme Court stated that **monogamy is the norm and ideal of Hindu society**, and a second marriage is socially rejected and condemned.

Kanwal Ram & Others v. Himachal Pradesh Administration (1965): The Supreme Court held that for a charge of bigamy, there must be strict proof that the second marriage was performed with valid ceremonies, and a live-in relationship does not count as marriage.

Sarla Mudgal v. Union of India (1995): The Supreme Court ruled that a person **cannot convert to another religion only to enter into a second marriage**, and such conversion to commit bigamy is unconstitutional.

Lily Thomas v. Union of India (2000): The Supreme Court reaffirmed *Sarla Mudgal case (1994)* and made it clear that **conversion cannot be used as a device to validate a bigamous marriage.**

Javed & Others v. State of Haryana & Others (2003)

The Supreme Court held that the **right to freedom of religion under Article 25 is subject to public order, morality, health and social reform**, and that **polygamy is not an essential religious practice** that must be protected.

Supreme Court judgment on polygamy and Islam (2015): The Court held that polygamy is not an integral part of Islam and that Article 25 protects religious faith, not practices that go against public order, health or morality, so the state can reform such practices.

Shayara Bano v. Union of India (2017): The Supreme Court stressed that **personal laws must respect gender justice and fundamental rights**, reinforcing that practices such as polygamy can be tested on the touchstone of equality and dignity.

Major Concerns Related to Polygamy in India

1. Constitutional equality and different personal laws: Polygamy is banned for some communities but allowed for others under personal and customary laws. This uneven system raises concerns about **equality before law (Article 14)** and **non-discrimination (Article 15)** because citizens do not enjoy the same marital rights and obligations across religions and regions.

2. Gender inequality and violation of dignity

- Polygamy often affects women's **dignity, emotional security and mental health**. It can create neglect, unfair treatment and humiliation for wives.
- This goes against **Article 21**, which protects the right to live with **dignity** and personal autonomy, and makes polygamy a serious concern for **women's rights**, not just personal law.

3. Economic dependence and vulnerability of women: Many women in polygamous unions are **financially dependent** on their husbands and in-laws. Around **60% of victims rely on the husband's family for livelihood**, which makes it difficult for them to challenge polygamy, leave abusive situations or approach the legal system.

4. Weak enforcement and low conviction rates: Even where bigamy is a crime, **implementation is weak**. Conviction rates under bigamy provisions remain **below 10%**, because cases are under-reported, social stigma is high and it is hard to prove a valid second marriage with proper evidence in court.

5. Challenges in tribal and Sixth Schedule areas: Polygamy is more common in some **tribal communities** and **Sixth Schedule areas**, which have special protections and autonomy. State laws like those in **Assam and Uttarakhand** often **exclude these regions**, leaving many tribal women with **less legal protection** against polygamy.

Way forward

1. Educating about the ills of Polygamy- The tribal and Muslim communities must be made aware about the ills of Polygamy like the **socio-economic deprivation**.

2. Special legislation- Special legislation need to be brought to curb the menace of polygamy, like the legislation to ban triple talaq.

3. Address the rights of Children in Polygamous marriages- Law commission report of 1961 and 2009 has recommended to address the rights of children born from polygamous union.

4. Enactment of Uniform Civil Code- Uniform civil code needs to be enacted at the earliest to bring **uniformity in marriage, divorce and inheritance rights** among major religious communities, in **consonance with constitutional values**.

5. Gradual uniformity: Law Commission Report No. 279 (2018) recommended **phased UCC-related reforms** with wide consultation. Step-by-step changes in personal laws can align them with **constitutional morality, equality and dignity** while limiting social resistance.

6. Victim support:

Reform must be backed by **victim-support mechanisms**, including financial, psychological and legal aid.

Schemes such as the **NCW's One Stop Centre Scheme** can help women exit polygamous unions. A **state registry of marital status and second marriages**, on the lines of **Indonesia's ID-linked marriage registration**, can improve monitoring.

Stronger **family courts, legal aid centres, women's commissions and fast-track special courts** can give quicker relief.

Conclusion

Overall, the regulation of polygamy in India now shows a clear move from different personal laws toward more uniform and gender-just rules. Declining prevalence, stricter state bans and strong judicial scrutiny show this shift, but real change needs better enforcement, victim support, good data and sensitive dialogue with religious and tribal communities.

Question for practice:

Examine how polygamy is currently regulated in India and the key concerns arising from this framework.

Source: [Indian Express](#)

The need for 'heart-resilient' urban planning

UPSC Syllabus Topic: GS Paper 3 -Environment

Introduction

Urban India is facing a silent heart crisis. Cardiovascular diseases now cause a large share of city deaths, with urban prevalence nearly twice that of rural areas and rising cases below 50 years. Long commutes, pollution, shrinking green spaces and stress increase risk, while healthcare remains uneven and market-driven. Urban planning and governance must now treat heart health as a core priority, not a side effect of development.

Urban heart health as an urgent concern

1. **Prevalence of Risk Factors:** Urban environments foster lifestyles and conditions known to harm heart health, including sedentary behavior, high stress, poor diets (easy access to processed foods), and insufficient sleep.

2. **Environmental Pollution:** Cities concentrate environmental pollutants like fine particulate matter (PM2.5) from traffic and industry, which can enter the bloodstream, cause systemic inflammation, and may lead to heart attacks, and strokes.

3. **"Urban Heart Syndrome":** Doctors observe an emerging trend, sometimes referred to as "urban heart syndrome," where young professionals (in their 30s and 40s) present with early cardiovascular distress without traditional symptoms. This makes early diagnosis difficult and increases the risk of premature heart disease.

4. **Physical Environment Challenges:** Urban design often features a lack of green spaces and an abundance of heat-retaining materials (asphalt, concrete), leading to "urban heat islands". This results in higher temperatures, which place extra strain on the cardiovascular system, especially during heat waves.

5. **Health Inequities:** Health disparities within cities are stark, with low-income and marginalized populations disproportionately affected. These groups often live in areas with fewer healthy food options, less green space, higher pollution, and limited access to quality healthcare, compounding their health risks.

6. **Difficulty in Diagnosis:** Symptoms in urban dwellers, particularly women, may be subtle (e.g., fatigue, jaw pain, shortness of breath) and are often dismissed as stress or acidity, leading to dangerous delays in diagnosis and treatment.

Planning and technology for heart-healthy cities

The Role of Urban Planning

1. Promoting Physical Activity:

- Designing walkable and bike-friendly cities is crucial. This involves creating safe, continuous sidewalks, dedicated cycle paths, crosswalks, and reducing traffic speeds.
- Proximity to parks and recreational facilities encourages regular exercise and is associated with lower rates of obesity, hypertension, and heart disease.
- Experiences from **WHO's Healthy Cities Network** show that when such design is backed by governance, chronic disease risks fall.

2. **Creating Mixed-Use and Compact Neighborhoods:** Developing areas where residences, workplaces, shops, and amenities are all within a 15-minute walk or bike ride reduces reliance on cars, shortens commute times, and promotes active transportation.

3. **Integrating Green Spaces:** Incorporating urban greenery, parks, and tree canopy cover helps to mitigate the "urban heat island" effect, reduce air pollution, and provide spaces for relaxation and mental well-being, which alleviates stress on the cardiovascular system.

4. Improving Food Environments:

- Enabling food-sensitive planning ensures affordable and physical access to nutritious, fresh foods (e.g., via local markets and community gardens), while discouraging fast-food promotion in key areas like schools.
- These planning choices can work in harmony with the **National Urban Health Mission (NUHM)**, **Smart Cities Mission** and **AMRUT** to support healthier neighbourhoods.

The Role of Technology

1. **Environmental Monitoring and Mapping:** Smart city technologies use sensors to monitor air and noise pollution levels in real time. This data can inform residents of environmental hazards and help urban planners identify priority areas for intervention, such as increasing tree cover along high-pollution corridors.
2. **Smart Transportation Systems:** Clean energy public transport and e-mobility solutions (e.g., e-bikes) can reduce vehicular emissions and noise pollution.
3. **Personal Health Management:** Wearable devices (smartwatches and fitness trackers) allow individuals to monitor key metrics like heart rate, sleep, and physical activity levels in real time, empowering them to manage their health proactively.
4. **Digital Healthcare Access:** Telehealth services, smartphone applications for self-management, and remote patient monitoring systems for chronic conditions like hypertension and heart failure can improve patient adherence to treatment plans and reduce hospital admissions.
5. **Data-Driven Planning:** Using AI and data analytics allows urban planners to integrate health data with urban design tools, providing evidence-based insights to create health-promoting environments and support city-level decisions.

Way forward

1. **Make health a core planning goal:** City plans should integrate heart health into land use, transport, housing and green space decisions, instead of treating health as a separate sector.
2. **Align with national urban missions:**
 - Urban design should support the National Urban Health Mission (NUHM), Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) by using these programmes to fund compact, low-pollution, activity-friendly neighbourhoods.
 - It should also build on the **Asian Development Bank's \$10-billion urban investment plan** to embed heart health into future city development.
3. **Use digital tools for risk mapping:** AI-enabled air-quality and heat mapping, sensors and citizen-reporting apps should be built into planning systems to identify high-risk zones and guide targeted action.
4. **Anchor all action in equity:**

Cities need equity audits and priority investment in vulnerable localities so low-income groups do not remain trapped in high-risk environments.

Supportive neighbourhood design can also strengthen campaigns such as **Tobacco-Free Youth 3.0** by making healthy choices easier.

5. Guard against green gentrification: New parks and greenways must be planned with communities so they are not displaced and can fully benefit from healthier surroundings.

6. Build long-term coalitions and skills: Collaboration among MoHUA, health agencies, academia, civil society and youth platforms such as **Urban October** can create a generation of planners trained to design heart-resilient cities.

Conclusion

Cardiovascular disease reflects how cities are built and governed. Air quality, heat, mobility and access to healthy spaces shape risk more than individual willpower. A heart-resilient future for urban India depends on planning that protects the most vulnerable first, links health with every urban decision and treats the human heart as a central design concern.

Question for practice

Discuss how urbanisation in India is increasing heart health risks and explain the role of planning and technology in creating heart-resilient cities.

Source: [The Hindu](#)

A template for security cooperation in the Indian Ocean

UPSC Syllabus Topic: GS Paper 2-Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

Introduction

The Colombo Security Conclave (CSC) has become an important platform for cooperation in the Indian Ocean. It brings India and its island neighbours together to manage shared maritime risks and development-linked vulnerabilities. The 2025 summit in India reflects how rising geopolitical shifts, new defence partnerships, and the growing role of China are reshaping security cooperation and pushing CSC members to work more closely.

Colombo Security Conclave

Origin: The Colombo Security Conclave began in 2011 as a trilateral platform between India, Sri Lanka and the Maldives. It slowed down later as political changes in Sri Lanka and the Maldives weakened alignment on shared security priorities. This reduced the group's ability to maintain momentum.

Revival: The platform was revived in 2020 under a broader framework. It adopted cooperation in maritime security, counter-terrorism, trafficking and organised crime, and cybersecurity. This wider focus helped the member-countries rebuild trust and recommit to joint work in the Indian Ocean.

Expansion: The Conclave has expanded steadily. Mauritius became a member in 2022, Bangladesh joined in 2024, and Seychelles entered as a full member at the 2025 summit. Malaysia attended as a guest. The widening membership signals growing interest in the platform and its mandate.

Aim: The Conclave aims to strengthen cooperation in a region where the maritime security framework is still fragmented. It seeks to reduce gaps in coordination and provide a platform for countries to work together on shared security concerns in the Indian Ocean.

Maritime security holds crucial importance for CSC members

1. Dependence on oceans for development: The economies of CSC members are deeply tied to the oceans. Their development priorities rely on secure seas, making maritime security important for long-term economic stability and growth.

2. Link to lives, livelihoods and opportunities: Maritime risks directly affect coastal communities. Addressing such risks protects livelihoods but also opens new economic possibilities in an era where global trade depends heavily on sea routes.

3. Focus on non-traditional security threats: The Conclave gives special attention to issues such as trafficking, organised crime and cyber vulnerabilities linked to the maritime domain. These threats are cross-border in nature and require joint action.

4. Need for coherent cooperation: Regional security mechanisms remain scattered. Stronger cooperation among CSC members is necessary to develop coordinated and effective responses to common maritime challenges.

The 2025 summit marks a significant turning point for the CSC

1. Importance of timing: The summit took place when security frameworks in the Indo-Pacific and Indian Ocean are shifting. This increased the urgency for stronger collective action to address emerging risks.

2. India's deeper engagement with neighbours: For India, the Conclave offers a path to reinforce ties with its maritime neighbours at a time of rising geopolitical volatility and growing Chinese presence in the region.

3. Expansion and regional commitment: Seychelles joining as a member reflects regional confidence in the platform. Malaysia's participation as a guest indicates potential for wider outreach in the future.

4. Strengthening security cooperation: The summit highlighted that security cooperation is becoming central to regional relations. Security issues now shape how countries collaborate in the Indian Ocean.

Challenges Shaping the CSC's Future Direction and Resilience

1. Different views on China: India sees the scale of Chinese activity in the Indian Ocean as a major security concern. Other members rely on China for development and do not share the same threat perception. This gap makes coordination more difficult.

2. Need for stronger institutional structure: The Conclave now works at the National Security Adviser level. Members need a more stable institutional framework to ensure consistent policies and predictable cooperation.

3. Domestic uncertainties in member states: Internal political changes, especially in Bangladesh, may affect how actively these countries engage with each other. Such uncertainties can slow down collective efforts.

4. Strengthening resilience and cohesion: Even with challenges, the Conclave has created a new space for cooperation in a region where unity on security issues has been weak. Its future depends on building stronger institutional resilience and deeper cohesion among its members.

India's Wider Maritime Initiatives as a Template for Indian Ocean Security Cooperation

1. SAGAR Doctrine: This foundational vision aims to deepen economic and security cooperation with maritime neighbors. Its pillars include:

- **Security Cooperation:** Strengthening maritime security through bilateral and multilateral relations to combat threats like piracy, terrorism, and illegal fishing.
- **Capacity Building:** Assisting partner countries (such as Mauritius, Maldives, Seychelles) with maritime infrastructure development, training, and providing equipment like patrol vessels and radar systems.
- **Humanitarian Assistance and Disaster Relief (HADR):** Serving as a "first responder" during natural disasters and humanitarian crises (e.g., "Mission Sagar" operations during the COVID-19 pandemic and cyclone relief efforts).
- **Sustainable Development:** Promoting the responsible and sustainable use of marine resources, also known as the "Blue Economy".
- **Connectivity and Infrastructure:** Investing in port development (e.g., Chabahar Port) to enhance regional trade and connectivity.

2. MAHASAGAR (Mutual and Holistic Advancement for Security And Growth Across Regions): An extension of SAGAR that broadens the scope to include wider economic and geopolitical issues and enhances collaboration with the "Global South".

3. Information Fusion Centre – Indian Ocean Region (IFC-IOR): Established in Gurugram. This center has information-sharing arrangements with 22 countries and other partners to monitor and respond to maritime activities and threats.

4. Joint Exercises and Patrols: The Indian Navy conducts numerous bilateral and multilateral exercises and coordinated patrols with IOR littoral states to enhance interoperability:

- **Bilateral Exercises:** Such as *Malabar* (with the US, Japan, Australia), *Varuna* (France), *SIMBEX* (Singapore), and *SLINEX* (Sri Lanka).
- **Coordinated Patrols (CORPATs):** Regularly conducted with nations like Bangladesh, Indonesia, Myanmar, and Thailand.
- **Multilateral Exercises:** Including MILAN (hosted by India) and the recent maiden Africa India Key Maritime Engagement (AIKEYME).

5. Indian Ocean Naval Symposium (IONS): Initiated by India in 2008, it provides a forum for navies of the IOR littoral states to cooperate on security matters.

6. **Indian Ocean Rim Association (IORA)**: India is a founding member and assumes the chairmanship from November 2025, working on economic cooperation, maritime safety, and environmental security.

7. **Quadrilateral Security Dialogue (Quad)**: A strategic grouping with the US, Japan, and Australia that addresses shared challenges in the Indo-Pacific, including maritime security and disaster relief.

Conclusion

Taken together, CSC and India's wider maritime initiatives show how the Indian Ocean is slowly moving towards a more cooperative security order. The next test will be closing institutional gaps, managing differences over China, and keeping smaller states engaged so that security, development and resilience can advance together.

Question for practice:

Evaluate the role of the Colombo Security Conclave (CSC) and India's wider maritime initiatives as a template for security cooperation in the Indian Ocean region.

Source: [The Hindu](#)

Need for a National Legislative Index (NLI) in India

UPSC Syllabus Topic: GS Paper 2 -Parliament and State legislatures—structure, functioning, conduct of business, powers & privileges and issues arising out of these.

Introduction

India's governance has become complex. Yet many State legislatures remain weak, with disruptions, short sittings and poor research support. A **National Legislative Index (NLI)** is proposed to measure how well these institutions function and to push them towards being disciplined, research-based and citizen-facing "temples of democracy" in spirit, not only in name.

About National Legislative Index (NLI)

Purpose:

- The NLI is a **proposed annual, state-wise benchmarking system for State legislatures**.
- It would provide a **common yardstick** to measure legislative productivity, transparency and innovation across India.
- Its purpose is to turn how Houses function into measurable public data so that performance is visible, comparable and open to scrutiny.

Functions:

- The NLI aims to provide a **comprehensive benchmarking mechanism** and to distill a transparent annual score from **0 to 100** for each legislature.

- It will identify gaps in functioning, inform corrective reforms, highlight inter-State disparities, strengthen the Speaker's office as a driver of institutional excellence, and encourage reforms and digital, participatory practices.

Key indicators and focus areas:

- The NLI will consider **sitting days, session duration, and time spent on debate and questions.**
- It will track the percentage of Bills referred to committees, the average time taken to pass Bills, and the hours devoted to Question Hour and floor discussion.
- It will assess transparency, digitisation and efforts for knowledge preservation. These measures convert processes into public information without prescribing any policy stance.

Need for National Legislative Index (NLI)

1. Very Low Sitting Days: Many state assemblies meet for only **20–25 days a year**, and Parliament's sitting days have fallen from **135 days** in the 1st Lok Sabha to about **55 days** in the 17th Lok Sabha. Such low sitting time weakens debate and oversight. This gap shows the need for a clear system that measures and encourages regular functioning.

2. Loss of Working Time Due to Disruptions: Frequent disruptions severely reduce debate hours. The **15th Lok Sabha lost over 30%** of its scheduled time due to disruptions. Without a common assessment tool, legislatures do not face pressure to improve discipline. An index can highlight and compare disruption levels.

3. Weak Committee Scrutiny: Only **10% of Bills** were referred to committees in the 17th Lok Sabha, compared to **60–71%** in earlier Lok Sabhas. Poor scrutiny leads to weak laws. An index can track and reward assemblies that strengthen committee-based examination.

4. Declining Quality of Debate and Accountability: Question Hour functioned for only **19% of scheduled time** in Lok Sabha and **9% in Rajya Sabha** during the 17th Lok Sabha. Limited debate reduces executive accountability. An index helps monitor how seriously legislatures engage in questioning and discussion.

5. Low Participation and Weak Legislative Engagement: MPs attended around **79%** of sessions in the 17th Lok Sabha but participated in only **45 debates** on average. Private Member Bills rarely move forward, and key posts like the Deputy Speaker remained vacant. A performance index can highlight such gaps and push for corrective reforms.

6. Lack of Transparency and Comparable Data: State legislatures follow different reporting practices, and most information is obtained only through RTIs. There is no unified tool to compare productivity, committee use, or debate hours. The NLI helps create standardized, publicly available data across states.

7. Growing Complexity of Governance: Modern governance demands deeper technical understanding, research support, and disciplined functioning. Many legislatures lack research systems, digital processes, and structured evaluation.

Other Initiatives to Strengthen India's Legislative Efficiency

1. Digital Adoption in Legislative Work: India has introduced digital tools such as paperless systems, live streaming, and digitised records to make legislative work faster, more transparent, and easier for citizens to follow.

2. e-Vidhan (NeVA) for Paperless Legislatures: The e-Vidhan (NeVA) initiative aims to convert all State Legislatures into fully paperless institutions, ensuring real-time access to documents, smoother functioning, and higher transparency in legislative processes.

3. One Nation, One Legislative Platform: A national digital platform is being developed to connect all legislatures by 2026, enabling states to share debates, budgets, committee reports, and legislative updates on one integrated interface.

4. Strengthening the Parliamentary Committee System: India continues to strengthen parliamentary committees so that they can examine Bills, policies, and executive actions in greater detail, improving the depth and quality of legislative scrutiny.

5. Capacity Building for Legislators: Regular workshops, training programmes, and handbooks equip legislators with better knowledge of procedures, rules, and policy issues, helping them participate more effectively in debates and oversight work.

6. Strong Disciplinary Mechanisms: Parliament enforces disciplinary tools such as suspension or expulsion to control disruptions, uphold decorum, and ensure that legislative work proceeds in an orderly manner.

Way Forward

1. Rebuilding Discipline: Legislatures need predictable annual calendars, minimum sitting days, and uniform procedural rules. These steps help ensure structured deliberation and reduce disruptions that weaken debate quality.

2. Institutionalising Scrutiny: Stronger committees, mandatory referrals for major laws, and regular sharing of attendance and debate data will deepen accountability. Live streaming and archiving should become standard practices.

3. Promoting Dialogue: Legislatures must shift from disruption to dialogue. Citizen-centric outreach, educational programs, and participatory platforms can bring legislatures closer to people and reinforce democratic trust.

4. Harnessing Technology and Innovation: Digital systems, AI tools, and shared platforms can help manage legislative records, strengthen debate quality, and ensure uniformity across states. This supports a more responsive and modern legislative ecosystem.

Conclusion

The National Legislative Index offers a clear path to strengthen India's legislative institutions through transparency, competition, and reform. By measuring productivity and promoting best practices, it can rebuild trust and deepen accountability. With disciplined functioning, digital integration, and citizen engagement, legislatures can rise to meet the demands of a rapidly changing India and reinforce democratic governance.

Question for practice:

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Examine why India needs a National Legislative Index (NLI) to improve legislative functioning.

Source: [Indian Express](#)

Privacy in a 'fishbowl society'

Source: The post "Privacy in a 'fishbowl society'" has been created, based on "Privacy in a 'fishbowl society'" published in "The Hindu" on 03rd December 2025.

UPSC Syllabus: GS Paper-3- Technology

Context: India today faces a "fishbowl society" where pervasive technological surveillance and AI-based harms challenge the traditional understanding of privacy. Despite the Puttaswamy judgment (2017), the IT Act (2000), and the Digital Personal Data Protection Act (2023), the lived experience of privacy violations—especially through deepfakes and NCII—remains inadequately addressed.

Society's over-reliance on technology, **as highlighted by Meredith Broussard in *Artificial Unintelligence***, has left individuals unprepared to cope with AI-driven risks. Deepfake algorithms create pornographic images without consent, pushing individuals into forced visibility and loss of autonomy. Harms arising from NCII extend far beyond privacy loss and include psychological distress, fear, stigma, and long-term damage to dignity and bodily integrity.

About Standard Operating Procedure (SOP) to Curtail Dissemination of Non-Consensual Intimate Imagery (NCII)

1. The **Ministry of Electronics and IT (MeitY)** issued a Standard Operating Procedure **to strengthen mechanisms for removing and preventing the spread of NCII content online.**
2. The SOP was developed following directions of the Madras High Court and aims **to ensure swift, uniform and victim-centric action across platforms and agencies.**
3. It **provides clear guidance to victims, intermediaries and law enforcement agencies** for reporting and promptly removing intimate or morphed images shared without consent.
4. The SOP **mandates that all intermediaries take down or disable access to reported NCII content** within 24 hours of receiving a complaint.
5. Victims **can report incidents through multiple channels**, including **One Stop Centres, the National Cybercrime Reporting Portal (NCRP)**, in-app grievance mechanisms, and local police stations.
6. Significant Social Media Intermediaries are required **to use hash-matching and crawler tools** to prevent re-uploads of the same or similar NCII content.
7. The **SOP strengthens inter-agency coordination by involving I4C** as the central aggregator of complaints, DoT for URL blocking, and MeitY for monitoring compliance.
8. Overall, the SOP aims **to empower individuals especially women to regain control over their digital identities** and reinforces the government's commitment to ensuring privacy, dignity and safety in cyberspace.

Limitations

1. The SOP **lacks a gender-neutral framework and fails to recognise the vulnerabilities of transgender persons**, despite Supreme Court recognition of the third gender.

2. It **does not clearly define the accountability of platforms or AI developers**, nor does it specify penalties or enforcement mechanisms.
3. It **lacks detailed regulations on deepfake generation, dissemination, traceability**, and investigation, limiting its effectiveness.
4. The **SOP remains merely a starting point** and cannot replace the need for comprehensive legislation.

Key Challenges

1. **Lack of data and under-reporting:** The NCRB does not collect or publish disaggregated statistics on NCII or cyberbullying, making the scale of the problem invisible.
 - a. An RTI filed in October 2025 revealed that the Union government lacks specific data and places the responsibility on States, showing systemic data gaps.
 - b. Social stigma and fear of victim-blaming discourage many survivors, especially women and transgender persons, from reporting incidents.
2. **Limited public awareness:** Many young users remain unaware of what crimes such as voyeurism, deepfake pornography, or revenge porn legally constitute. Digital illiteracy, combined with societal shaming, further prevents victims from seeking legal remedies.
3. **Weak institutional capacity:** Police officials often lack adequate training and sensitivity to handle NCII cases effectively. Cyber-investigative capacity remains limited, leading to slow or ineffective responses. Conviction rates remain low despite the filing of thousands of complaints across the country.

Why Laws Alone Are Not Enough

1. Existing legal provisions remain ineffective without awareness, accessibility, and societal acceptance.
2. Victims often avoid reporting due to shame, fear, and lack of trust in investigative systems.
3. Rapid technological advancements have outpaced current legal and institutional capacities, leaving victims unprotected.

Way Forward

1. Dedicated NCII legislation: A comprehensive, gender-neutral law should be enacted to specifically address NCII and deepfake harms. Such a law must define the duties of platforms, intermediaries, and AI developers and incorporate strict traceability and takedown norms.

2. Strengthening institutional capacity: Police forces need specialised training in cyber investigations and gender-sensitive handling of NCII cases. Governments must invest in advanced digital forensic infrastructure to expedite evidence gathering.

3. Victim-centric mechanisms: Anonymous reporting systems, confidential complaint processes, and psychological support services should be institutionalised. Fast-track mechanisms for content removal, legal assistance, and compensation must be ensured.

4. Platform and AI developer accountability: Online platforms must conduct mandatory risk assessments and adopt watermarking and detection tools for AI-generated images. Clear obligations must be imposed on platforms to promptly remove harmful content and cooperate with law enforcement.

5. Public awareness and education: Government and civil society must launch nationwide campaigns to improve digital literacy and awareness of cyber rights. Educational institutions should incorporate modules on consent, online safety, and gender justice.

6. Independent oversight: A specialised regulatory body for AI harms and digital safety should be established to audit platforms and enforce compliance.

Conclusion: Deepfakes and NCII have transformed privacy from a purely legal right into a domain increasingly shaped by technological vulnerabilities. While the 2025 SOP is a crucial step, it remains insufficient without comprehensive, gender-neutral laws, capable institutions, platform accountability, and robust support mechanisms for victims. A holistic and proactive approach is essential to safeguard dignity, autonomy and digital safety in an increasingly transparent and technology-driven society.

Question: India today lives in a 'fishbowl society' where AI-driven harms have outpaced existing legal protections." Discuss in the context of rising deepfake and NCII crimes.

Why does India need bioremediation?

Source: The post "Why does India need bioremediation?" has been created, based on "Why does India need bioremediation? | Explained" published in "The Hindu" on 03rd December 2025.

UPSC Syllabus: GS Paper-3- Environment

Context: Bioremediation refers to the use of microorganisms and plants to break down or transform toxic pollutants into harmless by-products, thereby restoring contaminated environments. It is increasingly important for India as rapid industrialisation, population growth, and environmental degradation have made clean soil, air, and water harder to access.

What is Bioremediation?

1. Bioremediation **literally means "restoring life through biology"** and uses bacteria, fungi, algae, or plants to degrade pollutants such as oil, pesticides, plastics, and heavy metals.
2. These **organisms metabolise pollutants as food, converting them into harmless substances** like water, CO₂, or organic acids, and sometimes convert toxic metals into non-leaching forms.

Types of Bioremediation

1. **In situ bioremediation** occurs directly at the contaminated site, such as oil-eating bacteria sprayed on ocean spills.
2. **Ex situ bioremediation** involves removing contaminated soil or water, treating it in controlled facilities, and returning it after cleanup.

How Modern Biotechnology Enhances Bioremediation

1. New biotechnologies allow scientists **to identify microbes and biomolecules with pollutant-degrading capabilities.**
2. Genetically modified microbes are engineered **to degrade complex pollutants** like plastics and oil residues more effectively than natural species.

3. Synthetic biology **enables “biosensing,” where organisms change colour or fluorescence** if they detect toxins, thereby providing early warnings of contamination.

Why Does India Need Bioremediation?

1. India faces severe pollution challenges, with rivers like the Ganga and Yamuna receiving untreated sewage and industrial waste daily.
2. Oil spills, pesticide residues, and heavy metal contamination threaten ecosystems, agriculture, and public health.
3. Traditional cleanup technologies are costly, energy-intensive, and sometimes cause secondary pollution, making bioremediation a more sustainable and affordable option.
4. India's rich biodiversity offers unique indigenous microbes adapted to local conditions such as high temperatures, salinity, and acidity, allowing more effective environmental recovery.
5. India's resource constraints make scalable, low-cost, and environmentally friendly technologies essential for long-term ecological restoration.

Where Does India Stand Today?

1. Bioremediation is gaining momentum but remains in pilot or early implementation stages.
2. The Department of Biotechnology (DBT) supports bioremediation through its Clean Technology Programme, fostering collaborations between universities, research institutions, and industry.
3. CSIR-NEERI leads research and implementation of bioremediation projects, including developing microbial formulations.
4. IITs have contributed innovations such as nanocomposites from cotton for oil spill absorption and bacteria capable of degrading toxic pollutants.
5. Startups like BCIL and Econirmal Biotech offer microbial products for soil and wastewater treatment, indicating growing industry participation.

Challenges to Adoption in India

1. There is **limited site-specific knowledge** about microbial behaviour and pollutant complexity, leading to inconsistent results.
2. India **lacks unified national standards or regulatory frameworks** for bioremediation protocols, safety monitoring, and microbial applications.
3. Many **contaminants are chemically complex**, requiring tailored solutions that India has not fully developed yet.
4. There is **limited public awareness about the safety and benefits of microbial cleanup technologies**, leading to hesitation and resistance.
5. **Biosafety concerns exist**, especially regarding genetically modified organisms that may cause unintended ecological effects if not properly contained.

What Are Other Countries Doing?

1. Japan integrates plant-based and microbial remediation into urban waste management systems.
2. The European Union funds cross-border projects using microbes to clean oil spills and rehabilitate mining sites.
3. China has prioritised bioremediation in its soil pollution control programme and uses genetically enhanced bacteria to restore industrial wastelands.

4. These examples show that bioremediation can become mainstream environmental policy with proper investment, regulation, and monitoring.

Opportunities and Risks for India

1. Bioremediation can restore polluted rivers, rehabilitate contaminated land, and improve public health while creating jobs in biotechnology and environmental consulting.
2. It can support major national missions such as Swachh Bharat and Namami Gange, offering cost-effective solutions.
3. However, risks such as ecological disruption from genetically modified organisms need strict regulation, testing, and continuous monitoring.
4. Public engagement and trust-building are crucial to ensure safe and widespread adoption.

Way Forward

1. India must develop national standards for bioremediation protocols, microbial usage, and biosafety guidelines to ensure uniform and safe implementation.
2. Regional bioremediation hubs should be created by linking universities, industries, and local governments to address local contamination challenges more effectively.
3. Support for startups and community-led bioremediation projects should be expanded through DBT-BIRAC funding mechanisms.
4. Public awareness campaigns must be strengthened to educate citizens that microbes can be allies in environmental restoration rather than threats.
5. India must train skilled personnel, create certification systems, and invest in long-term monitoring frameworks for safe deployment of engineered microbes.

Conclusion: Bioremediation offers India a sustainable, affordable, and biotechnology-driven solution to its escalating pollution crisis. While pilot projects and innovations are promising, India needs stronger standards, biosafety frameworks, public awareness, and institutional capacity to scale these technologies. By responsibly integrating bioremediation with national missions, India can restore its ecosystems, protect public health, and move toward a greener future.

Question: Bioremediation offers India a sustainable and biotechnology-driven alternative to conventional pollution control methods. Discuss the need for bioremediation in India and evaluate the opportunities and challenges associated with its adoption.

The climate is breaching the wall of urban metrics

Source: The post “The climate is breaching the wall of urban metrics” has been created, based on “The climate is breaching the wall of urban metrics” published in “The Hindu” on 04th December 2025.

UPSC Syllabus: GS Paper-3- Environment

Context: Urban resilience, particularly in the face of climate change, is an emerging concern in rapidly urbanizing regions like Asia. While global urban indices, such as the UN-Habitat City Prosperity Index and the Global Liveability Index, measure a city’s development based on factors like infrastructure, governance, and quality of life, these metrics often fail to account for the risks posed by extreme weather events. Recent natural

disasters in Asia, such as floods and cyclones, highlight significant gaps in how urban resilience is assessed, revealing the need for more comprehensive and inclusive measures.

Limitations of Current Urban Resilience Metrics:

1. **Exclusion of Vulnerable Areas:** Most global urban indices focus on major metropolitan areas or capital cities, overlooking secondary cities and peri-urban regions that often bear the brunt of climate risks.
 - For example, cities like Hat Yai in Thailand or Cebu in the Philippines, despite being key regional hubs, are excluded from liveability rankings.
 - These areas, though economically important, lack the same resources and infrastructure as larger cities, leaving them more vulnerable to climate-induced disasters.
2. **Narrow Focus on Visible Infrastructure:** Indices like the Global Liveability Index prioritize indicators such as healthcare, public transport, and education, which are important but fail to consider
 - The recent floods in Sri Lanka and Indonesia, where existing infrastructure was overwhelmed by extreme rainfall, demonstrate that modern cities must be assessed on their capacity to handle such shocks, not just their visible amenities.
3. **Mispricing of Risk and Inequity:** Current urban metrics tend to use city-wide averages, which mask the disparities in vulnerability within cities.
 - Wealthier residents benefit from better infrastructure, mobility, and access to insurance, which helps them mitigate risks during extreme weather events.
 - In contrast, marginalised communities living in informal settlements or flood-prone areas face higher risks, yet they are often not included in resilience assessments. This exacerbates the inequality of urban risk and misrepresents the actual resilience of the city.
4. **Failure to Address Long-Term Climate Adaptation:**
 - Urban indices largely fail to incorporate long-term climate adaptation strategies. They focus on the present state of a city, but do not measure its preparedness for future climate challenges.
 - This oversight can lead to investments that prioritize short-term economic growth rather than sustainable infrastructure and disaster management systems, further deepening vulnerabilities in the long run.

Way Forward

To more accurately measure urban resilience in the context of climate change, a new framework that goes beyond traditional urban indices is necessary. The following measures should be considered:

1. **Inclusion of Secondary Cities and Peri-Urban Areas:**
 - Urban resilience metrics must include all regions within a city, not just major metropolitan hubs.
 - Secondary cities and peri-urban areas are often more vulnerable to climate change but are essential parts of national economies. Integrating these areas into urban assessments will provide a more holistic picture of a city's resilience.

2. **Focus on Climate-Resilient Infrastructure:**

- Future urban indices should prioritize measures of climate resilience, such as the capacity of drainage systems, the stability of infrastructure on floodplains, and the effectiveness of early warning systems.
- Cities should be evaluated on their ability to withstand and recover from extreme weather events, not just on their economic output or connectivity.

3. **Equity in Risk Assessment:**

- Urban resilience metrics should account for the varying levels of vulnerability across different socioeconomic groups within a city.
- Wealthier areas should not be over-represented in resilience assessments while poorer, more vulnerable regions are underrepresented.
- Indices should measure how effectively a city protects its most at-risk populations, ensuring that resilience is inclusive.

4. **Long-Term Adaptation and Sustainability:**

- The focus of urban indices should shift towards long-term sustainability and adaptation to climate change. This includes evaluating cities on their ability to implement and maintain resilient infrastructure, enforce building codes, and manage risks in informal settlements.
- Prioritizing climate adaptation projects in areas prone to natural disasters should be a key metric in urban assessments.

5. **Transparent and Accessible Data:**

- To make these changes effective, cities must have access to comprehensive, real-time data on climate risks, urban infrastructure, and social vulnerability.
- Governments should be encouraged to collect and share data on local climate hazards, infrastructure performance, and community resilience, allowing for more accurate assessments and targeted investments.

Conclusion: The existing urban resilience indices do not adequately reflect the vulnerabilities cities face due to climate change, especially in Asia. A more inclusive and effective approach to urban resilience measurement is necessary, one that focuses on the specific risks posed by extreme weather events, considers the inequities within cities, and emphasizes long-term climate adaptation strategies. By adopting these approaches, cities can better prepare for the challenges posed by climate change and ensure a more resilient and equitable future for all urban residents.

Question: Discuss the limitations of current urban resilience metrics in addressing the climate challenges faced by cities in Asia. Suggest a more inclusive and effective approach for measuring urban resilience.

Systemic challenges with the working of IBC

Source: The post “Systemic challenges with the working of IBC” has been created, based on “IBC resolution process: House panel raises concerns over ‘haircuts’, asset valuation; encourage global bidding” published in “Indian Express” on 04th December 2025.

UPSC Syllabus: GS Paper-3- Indian Economy

Context: The Insolvency and Bankruptcy Code (IBC) has played a crucial role in strengthening the confidence of creditors and encouraging foreign investment since its implementation. However, the Parliamentary Standing Committee on Finance, in its recent report, raised several concerns about the code's effectiveness, including delays in resolution processes, inadequate asset valuation, and the issue of 'haircuts'. To address these challenges, the committee proposed several reforms aimed at improving the overall functioning of the IBC.

Key Concerns Raised by the Committee:

1. **Delays and Inadequate Judicial Infrastructure:** One of the primary issues highlighted by the committee is the delay in the resolution process, primarily caused by inadequate judicial infrastructure. This results in prolonged timelines, undermining the purpose of IBC, which aims for time-bound resolution of insolvency cases.
2. **Uncertainty Regarding Finality of Resolution Plans:** The committee noted the uncertainty surrounding the finality of resolution plans, often due to judicial reversals. This creates an environment of unpredictability, discouraging investors and creditors from participating in the resolution process.
3. **Lack of Accountability Among Resolution Professionals (RPs):** Another significant concern is the lack of accountability among resolution professionals. The committee emphasized the need for clearer roles and responsibilities for RPs to ensure transparency and better outcomes in the resolution process.
4. **Haircuts and Asset Valuation Issues:** The committee raised concerns over the issue of 'haircuts' — the difference between the amount a lender is owed and the actual recovery achieved.
 - The committee pointed out the lack of transparency in the process and its tendency to lead to distress sales, often resulting in lower recovery rates. Furthermore, assets are valued based on their liquidation potential rather than their enterprise value, leading to suboptimal recovery.

Recommendations for Reform:

1. **Enterprise-Level Price Discovery Mechanism:** To address asset valuation concerns, the committee recommended adopting an enterprise-level price discovery mechanism. This would ensure that assets are valued based on their true enterprise value, better reflecting the corporate debtor's potential and improving the recovery rates.
2. **Expansion of Competitive Bidding:** To reduce 'haircuts' and enhance competition, the committee proposed expanding the competitive bidding process by encouraging global outreach. This would increase the pool of quality resolution applicants, potentially leading to better resolution outcomes and higher recoveries for creditors.
3. **Introduction of Standard Operating Procedures (SOPs):** The committee suggested the introduction of clear standard operating procedures (SOPs) to define the roles of liquidators and registered valuers, establish audit trails, and facilitate post-resolution valuation reviews. These measures would ensure greater accountability and transparency in the resolution process.

4. **Cross-Border Insolvency Framework:** The committee highlighted the need for a cross-border insolvency framework under the IBC, especially for Indian companies operating internationally. Given that many corporate entities have assets spread across multiple jurisdictions, the lack of a robust framework to handle cross-border insolvency disputes is causing significant losses and complicating asset recovery.
5. **Online Mechanism for 'No Dues' Certificates:** The committee recommended the establishment of a transparent online mechanism for issuing 'no dues' certificates to companies post-resolution. This would help resolved companies start afresh by clearing their liabilities and facilitating access to fresh financing.

Conclusion: The IBC has been instrumental in streamlining the insolvency resolution process in India, but the Parliamentary Standing Committee on Finance's concerns highlight several areas for improvement. Addressing issues such as delays, asset valuation, and the accountability of resolution professionals, along with implementing reforms like enterprise-level price discovery and cross-border insolvency frameworks, can significantly enhance the effectiveness of the IBC. By adopting these recommendations, India can strengthen its insolvency resolution mechanism, improve creditor recovery, and foster a more transparent and efficient financial system.

Question: Discuss the concerns raised by the Parliamentary Standing Committee on Finance regarding the Insolvency and Bankruptcy Code (IBC) and suggest reforms for improving its effectiveness.

A Missing Link in India's Mineral Mission

Introduction

India wants secure, low-carbon growth, but its critical mineral policy still focuses more on mining than on processing. **Processing is the missing link** that decides whether India remains a supplier of raw ores or becomes a builder of resilient, high-tech industries. Closing this gap is central to energy security, industrial competitiveness, and strategic autonomy.

What are critical minerals?

Critical Minerals: Critical minerals are a category of non-fuel minerals and elements which satisfy 2 conditions:

- **Economic development & National Security:** It is essential for economic development and national security as they are vital for development of materials for defense, aerospace, nuclear, and space applications.
- **Supply chain vulnerability:** There are associated risk of supply chain vulnerability and disruption with these minerals, due to their lack of availability, and concentration of existence, extraction or processing of these minerals in few geographical locations.

Significance of Critical Minerals for India

1. Push to India's Economic Development: These Minerals give a push to India's economic development as industries such as high-tech electronics, telecommunications, transport, and defense rely heavily on these

minerals. Their growth can lead to job creation, income generation, and innovation in these sectors. **For ex-** India's push to become semiconductor manufacturing hub rests on the availability of these minerals.

2. Energy transition towards Net-Zero Emissions: These minerals are the foundation of modern technologies like solar panels, wind turbines and advanced batteries, which will help in energy transition and would give a push to India's goal of net-zero emission by 2070.

3. Competitive value chain establishment in India: The discovery of critical mineral wealth and identification of areas of their potential use in advanced technologies will help in establishing competitive value chain in India. This would help in attracting foreign direct investments from countries like UK, USA as part of their China+1 strategy.

4. National Security: These minerals are vital for defense, aerospace, nuclear, and space applications due to their usage in development of high-quality and reliable materials capable of withstanding extreme conditions and performing complex functions. These would help in bolstering India's national security.

5. Reducing India's import Bill: Currently most of the critical minerals are imported in India. The exploration and increased production of these minerals would help in reducing India's import burden and Current Account Deficit.

Challenges with Critical Minerals

1. Geopolitical and oligopolistic monopoly: The concentration of critical minerals in few countries, has led to geopolitical monopoly with only a few countries dominating these mineral resources. This leads to oligopolistic (domination by a few large firms) markets. **For ex-** Australia controls 55% of lithium reserves, and China has 60% of rare earths.

2. China's dominance in the processing and refining sector: China is a central player in the global critical mineral supply chains, particularly in processing and refining. It accounts for:

- 60% of worldwide production
- 85% of critical mineral processing, 70% of cobalt processing
- 90% of rare earth refining
- 60% of lithium conversion capacity.

China's dominance in the critical mineral sector leads to its political leverage over other countries. It alone can bring the global EV industry to a halt by restricting the supply of rare earths – which is happening right now.

3. Geopolitical Risks: The geographical concentration of these minerals makes them vulnerable to geopolitical risks. Geopolitical tensions, conflicts, trade disputes, or sudden policy changes in those regions can impact their supply. **For ex-** The civil war in Democratic Republic of the Congo, has affected the global supply chain of cobalt, as 70% of the world's reserves of cobalt are located in DRC.

4. Resource Nationalism: The geographical concentration of these minerals has led to resource conflicts. This has increased resource nationalism, and trade fragmentation. **For ex-** Rising resource nationalism in Africa.

5. Price Volatility: Unlike oil, most critical materials are not widely traded on exchanges, and this limits opportunities to hedge against price volatility. Further, insufficient data on consumption, production, and trade of minerals causes uncertainty, price volatility and delays in investments.

6. Rising Import Bill: Between FY22 and FY23, there has been a 34% rise in imports of critical minerals, totaling nearly Rs. 91,000 crore. India's heavy reliance on imports for these minerals, poses a risk to its industrial and energy security.

7. Environmental Concerns: Mining activities of these can lead to biodiversity loss, land use change, water depletion and pollution, waste contamination, and air pollution. **For ex-**Lithium mining in the fragile landscapes of the Chilean Atacama desert is water-intensive.

8. Long Gestation Period for Alternatives: Development of alternative sources and processing capabilities of critical minerals, like India's plans with Australia, can take more 15 years for fruition, delaying self-reliance.

Government Initiative to Strengthen Critical Mineral Supply Chain

1. Legal and policy reforms

- The government has amended the **Mines and Minerals (Development and Regulation) Act (MMDR Act)** to allow exploration licences, national auctions, and a mineral exchange.
- The **National Critical Mineral Mission (NCMM)**, launched in 2025, aims to secure supplies and strengthen value chains from exploration to processing and recycling..

2. Exploration and resource mapping: The **Geological Survey of India** will undertake **1,200 exploration projects between 2024-25 and 2030-31**. More than **100 critical mineral blocks** will be auctioned, including offshore areas with polymetallic nodules.

3. Processing, recycling and secondary resources

- Measures include **fast-track clearances**, a new **Exploration Licence**, and **Critical Minerals Processing Parks**.
- Recovery from **coal fly ash, tailings and red mud** is promoted through relaxed rules, incentives and work with PSUs and State utilities.
- A **₹1,500 crore recycling scheme** supports critical mineral recovery.

4. Overseas assets and partnerships

- India backs PSUs and private firms in **acquiring assets abroad** through funding, guidelines and inter-ministerial coordination.
- **Khanij Bidesh India Limited (KABIL)** lithium projects in **Argentina** and partnerships with **Australia**, plus the **Australia-Canada-India Technology and Innovation Partnership**, deepen supply-chain and processing cooperation.

5. Budgetary Support:

- **Customs Duty Removal:** Customs duties on 25 critical minerals, such as lithium, nickel, copper, and cobalt, have been removed to enhance domestic manufacturing of advanced technologies like electric vehicles (EVs) and energy storage systems.
- **Concessional Customs Duty Extension:** The concessional customs duty of 5% on lithium-ion cells has been extended until March 2026.

6. FDI liberalization: In 2019, India has allowed 100% foreign direct investment.

Certain minerals which were previously classified as atomic have been reclassified, facilitating private-sector mining.

7. Engagement with United Nation: India is engaging with the United Nations system on critical minerals, notably as a member of the UN Secretary-General's Panel on Critical Energy Transition Minerals.

Way forward

1. Centralised National Authority for Critical Minerals: Set up a unified national authority to oversee exploration, overseas acquisition, processing and recycling of critical minerals. It should coordinate between ministries, PSUs, States and regulators, streamline decision-making, and align domestic and external policies.

2. Turn Centres of Excellence into innovation engines

- The nine **Centres of Excellence** under the **National Critical Mineral Mission** should **focus on applied research that meets downstream industry needs**.
- They must **deliver processing technologies** close to commercial readiness, with clear metrics on purity, recovery, cost and waste.
- Collaboration among IITs, NITs, CSIR labs, industry and think tanks should move innovations quickly from lab to market.

3. Unlock secondary resources and residues

- India generates **over 250 million tonnes of coal fly ash** each year, containing light and heavy rare earths. Pilot projects at **CSIR and IITs** show recovery is feasible.
- Embedding recovery units in processing parks, co-funded with PSUs and State utilities and backed by **streamlined clearances from the Environment Ministry**, can convert these waste streams into secure domestic supplies.

4. Build a specialised processing workforce

- The **₹100 crore** National Critical Mineral Mission (NCMM) **skilling allocation** should support trainer programmes, diploma courses and updated curricula in academic and CSIR labs.
- Industry-led apprenticeships at existing refiners will help workers gain hands-on experience in hydrometallurgy and advanced refining.

This can create skilled jobs in mineral-rich states such as Odisha, Gujarat and Jharkhand.

5. De-risk investment and assure demand

- Distorted global prices discourage new entrants. India can use its planned mineral stockpile as a **market-maker** by offering long-term contracts, offtake commitments and price support to domestic producers.
- Key sectors such as defence, pharmaceuticals and electronics can be encouraged to source part of their needs domestically, giving processors stable demand.

6. Integrate mineral diplomacy with processing capacity: Overseas mineral assets must be linked with strong domestic refining. High-purity processing can shift India's external partnerships from raw-ore supply to co-investment models and strengthen India's position in platforms such as G-20, BRICS and IPEF.

7. Encourage FDI in domestic mining: Rising Foreign Direct Investment (FDI) will not just support businesses like battery and EV manufacturing. It will also bring the expertise of international mining firms to aid in exploring critical minerals for the country's benefit.

8. Path to global leadership: India can emulate Indonesia's success in nickel to become a global leader in these minerals, utilizing access to both domestic and international raw materials.

9. Alignment of mineral incentives: The Production-Linked Incentive (PLI) scheme for minerals should align with global aspirations, creating employment opportunities.

Conclusion

Critical minerals can either remain a strategic vulnerability or become a foundation of resilient, high-value growth. India must move beyond exporting raw ores to building strong domestic capacity in processing, recycling, skills, technology and financing, supported by smart diplomacy and FDI. Aligning these efforts can secure supplies, lower import risks and support energy and security goals.

Question for practice:

Examine why critical mineral processing is the missing link in India's mineral mission and how India can strengthen this stage to achieve strategic autonomy.

Source: [The Hindu](#)

A Dismantling of Base of Environmental Regulation

UPSC Syllabus Topic: GS Paper 3 -Environment

Introduction

In *CREDAI vs Vanashakti* (November 18, 2025), the Supreme Court recalled its May 2025 decision that had struck down ex post facto **environmental clearances (ECs)**. This recall reopens the dispute and weakens a

strict, preventive approach based on prior ECs. It raises concern that finished projects and sunk costs may outweigh constitutional duties of environmental protection and long-term ecological safety.

Background

1. Evolution of preventive environmental principles: For decades, the Supreme Court linked environmental protection to **Article 21's right to life**. It upheld the precautionary principle, intergenerational equity, sustainable development, and even recognised a **right against the harms of climate change**. These ideas required early and preventive state action to avoid irreversible ecological harm.

2. Formation of the EIA regime: Following the **Stockholm Conference (1972)**, India enacted the **Environment (Protection) Act (1986)**, and later introduced the **Environmental Impact Assessment (EIA) Notifications of 1994 and 2006**. Together, they established a system where certain industries and projects required *prior environmental clearances (ECs)* before starting operations—ensuring public hearings, expert scrutiny, and scientific evaluation.

3. Dilution through executive actions:

- The **2017 Notification** allowed projects that began without prior EC to apply retrospectively within six months.
- Later, a **2021 Office Memorandum** extended this leniency through a “Standard Operating Procedure,” regularising violators with penalties and costs.
- These measures transformed preventive clearance into post-violation approval.

4. The May 2025 Vanashakti ruling:

- A bench of **Justices A.S. Oka and Ujjal Bhuyan** held that *prior environmental clearances (ECs) is the only lawful route*.
- It struck down both the 2017 and 2021 relaxations as unconstitutional, restrained future regularisations, and affirmed environmental protection as a **foundational duty under Articles 21 and 51A(g)**.
- It also noted that the Union government had earlier assured that the 2017 relaxation was a one-time measure.

Review Petitions and the Reversal: Split Verdict of November 18, 2025

Grounds for review

1. Industry bodies, especially **Confederation of Real Estate Developers of India (CREDAI)**, and the Union government sought review, saying Vanashakti had **ignored earlier precedents** such as Common Cause, Alembic Pharmaceuticals, Electrosteel Steels and Pahwa Plastics, where **limited ex post facto environmental clearances (ECs)** were allowed in exceptional cases under Article 142.
2. They called review “imperative and expedient” and demanded a **“balanced approach”**, arguing that a total ban on retrospective ECs would make regularisation of ongoing projects impossible.

Majority view (CJI Gavai & Justice Chandran)

1. By **majority of CJI B.R. Gavai and Justice K. Vinod Chandran**, the Court **recalled the May 2025 judgment** and restored the case for a fresh hearing.
2. CJI Gavai warned of a **“devastating effect”**, including possible demolition of projects worth **nearly ₹20,000 crore**—such as SAIL investments, a **962-bed AIIMS hospital in Odisha**, a **greenfield airport in Karnataka**, a **CAPF medical institute in Delhi**, and many other central and state projects funded from the public exchequer.
3. The majority held that **ex post facto environmental clearances (ECs) should not be refused with pedantic rigidity** and may be permitted in **rare, exceptional situations**, with heavy penalties and strict conditions instead of demolition.

Minority dissent (Justice Bhuyan)

1. Justice Bhuyan dissented, saying the review **overlooked fundamentals of environmental jurisprudence** and meant **“backtracking on sound environmental jurisprudence” for the sake of violators**.
2. He rejected the “dustbin” argument over sunk public costs, opposed **prodding the government towards ex post facto environmental clearances (ECs)**, and pointed to **Delhi’s deadly smog and rising pollution** as proof of the human cost of weak enforcement.
3. He insisted that **retrospective environmental clearances (ECs) are an “anathema”**, a concept “devoted to evil”, that would cause **irreparable environmental degradation**.

Concerns Arising From the Review Judgment

1. **Shift from prevention to regularisation:** The ruling replaces preventive environmental protection with post-violation accommodation, allowing illegality to justify itself.
2. **Weakening of the EIA process:** Public hearings and expert appraisals lose meaning once projects already stand completed, making scrutiny a mere formality.
3. **Erosion of deterrence:** The polluter-pays principle risks turning into a “pay and legalise” route, encouraging non-compliance through fines instead of enforcement.
4. **Loss of accountability:** Regulatory authority weakens as compliance appears voluntary, reducing the state’s power to ensure genuine environmental discipline.
5. **Undermining judicial credibility:** Reversing a reasoned judgment undermines consistency and public faith in environmental rule of law.
6. **Negative climate signal:** At a time of deepening ecological crisis, the rollback signals retreat from India’s commitment to sustainable, rights-based development.

Way Forward

1. **Reaffirm Prior EC as the Rule:** Prior environmental clearance must remain the legal norm, not a flexible condition. Any retrospective **environmental clearances (ECs)** should be strictly exceptional and time-bound.
2. **Prevent “Pay and Legalise” Practices:** Penalties should deter, not legitimise, illegal projects. Fines cannot substitute environmental compliance.

3. Strengthen Monitoring and Accountability: Authorities must ensure real-time monitoring, transparent approvals, and public disclosure to prevent post-violation regularisation.

4. Align Policies with Constitutional Principles: Future notifications and memorandums must reflect Article 21's right to health and the precautionary principle.

5. Restore Public Trust in Environmental Governance: The Court and government must rebuild credibility by enforcing preventive laws, not bending them to suit economic convenience.

Conclusion

The recall of Vanashakti in *CREDAI vs Vanashakti* reopens the question of ex post facto clearances. It also signals a retreat from preventive environmental regulation. Protecting India's environment now requires restoring the primacy of prior **environmental clearances (ECs)**, rejecting "pay and legalise" regularisation, and upholding constitutional environmental rights and the rule of law.

Question for practice:

Discuss how the Supreme Court's recall of the Vanashakti judgment in *CREDAI vs Vanashakti* affects the preventive framework of environmental regulation in India.

Source: [The Hindu](#)

Need to Change Cities' Governance in India

UPSC Syllabus Topic: GS Paper 2 -Devolution of Powers and Finances up to Local Levels and Challenges There in.

Introduction

Indian cities face weak and unclear governance because elected local leaders have very little real authority. Most decisions are taken at the State level, while municipalities struggle with limited powers, poor finances, and overlapping institutions. Frequent political interference, weak civic awareness, and the incomplete impact of the 74th Amendment have further reduced local autonomy. These gaps show why India must rethink how its cities are governed to meet growing urban needs.

Need to Change Cities' Governance in India

1. Mayors Have Limited Power: Mayors in large Indian cities have almost no authority. Most decisions are taken in the Chief Minister's office, leaving municipal leaders with little control.

2. Overlapping Political Power: MLAs and MPs act as ex-officio members in municipalities. Their influence often overshadows corporators and Mayors. **Local representatives cannot act independently** because they remain subordinate to their party leaders in the Assembly or Parliament.

3. Cities Are Not Prioritised in Governance Structures: Urban areas have not received sustained attention, as India was seen mainly as a rural economy. Even though municipalities are historically old, **their powers have not expanded**, making strong reform necessary to meet the needs of rapidly growing cities.

4. **Constitutional Amendments Did Not Strengthen Urban Local Bodies:** The 73rd and 74th Amendments were expected to empower cities, but **urban governance actually weakened** due to political competition and the lack of public pressure.

5. **Limited Civic Awareness:** There is a need for change because **public apathy allows delays and weak institutions**. Cities like Bengaluru have gone years without municipal elections, yet people did not protest. When citizens do not demand strong local governments, political actors have no reason to support reform.

6. **State-Controlled Agencies Overshadow Municipalities:** Many essential services are handled by State agencies and parastatals, leaving municipalities with few functions and weak finances. **This reduces the role of local elected representatives**

7. **Political Interference in Municipal Boundaries:** Frequent mergers or divisions of city corporations are often used to postpone elections. **Such actions prevent stable governance**, creating another strong reason for reform.

Initiatives Taken to Change Cities' Governance in India

1. **Changing City Boundaries and Structures:** Different States have attempted reorganising municipal bodies. Bengaluru has been split into five corporations, while many municipalities in Telangana are being merged into the GHMC. However, **these steps often lack genuine governance goals**.

2. **Constitutionalisation Through the 74th Amendment:** The 74th Amendment was expected to empower urban local governments by giving them constitutional status.

3. **Attempts at Financial Devolution:** In the past, cities like Hyderabad and Bombay transferred funds to ward offices. This allowed quicker decisions and more local accountability. **These attempts showed that decentralisation can work when financial authority reaches the lowest level**, but such practices weakened over time

4. **Delimitation and Expansion Exercises:** States have conducted periodic delimitation and expansion of municipal limits. While these exercises claim to represent population growth and administrative needs

Way forward

1. **Build Strong Public Demand for Local Governance:** Urban governance will improve only when citizens ask for stronger municipal bodies. People must see local governments as real governments and not as minor offices. **Political leaders act when public pressure is clear**, so active civic demand is essential to drive change.

2. **Reduce Centralised Power:** City leadership cannot function independently if the Chief Minister's Office controls budgets, agencies, and key decisions. **Reducing this concentration of power is crucial** for giving space to Mayors and corporators to act on local issues without constant dependence on State-level approval.

3. **Clear Division of Responsibilities:** Many governance gaps arise from unclear roles. Multiple agencies control water, transport, waste, planning, and housing. **A clear delineation of functions is important to avoid overlap**. Each institution must have a defined area of work and a leader accountable for results.

4. Strengthening Local Finances: Cities need predictable financial flows. Ward offices must receive funds directly and be able to decide on local priorities. **Without money and authority, decentralisation cannot succeed.** Financial empowerment is the base for any governance reform.

5. Regulate Bureaucratic Dominance: Bureaucrats often become more powerful than elected bodies. They control key services and operate without local accountability. **Reducing their dominance is essential for making Mayors visible and effective,** and for ensuring that decisions respond to citizen needs, not bureaucratic priorities.

6. City-Specific Redesign : Every city faces unique political, administrative, and spatial challenges. Reform must be flexible and based on local needs.

Conclusion

Indian cities can function better only when local leaders gain real authority, finances flow predictably, parastatals are regulated, and citizens actively demand stronger urban governance. Reducing centralised control and redesigning city systems based on local realities are essential steps. Without these reforms, municipalities will remain weak and unable to deliver responsive urban services.

Question for practice:

Examine why India needs to change the governance structure of its cities and how these changes can make urban governance more responsive.

Source: [The Hindu](#)

Lifting the Police's Image in India

UPSC Syllabus Topic: GS Paper 2- Governance- Important aspects of governance.

Introduction

The recent Director General of Police (DGP) conference in Raipur, also attended by the Prime Minister, revealed a hard truth: Indian policing is still feared more than respected. Lifting this image needs more than new schemes. It requires better training and working conditions for constables, ethical and professional conduct from senior IPS officers, and a change in mindset from a coercive “force” to a citizen-centred service. Structural reforms, modern technology and community engagement must all move in this direction.

Need to uplift the police's image in India

1. Trust deficit in a democracy: Police are the most visible face of the state. Yet surveys and court observations repeatedly note public fear, especially among the poor and minorities.

2. Custodial violence and human rights concerns: NCRB-based analysis shows an average of about **92 deaths in police custody every year between 2000-2022.** These figures damage the institution's moral authority.

3. Under-staffing and poor service delivery: The India Justice Report notes that **overall police vacancies rose from 20.3% to 22.1% of sanctioned strength between 2020 and 2022**. Under-resourced personnel often get blamed, further eroding public image.

4. Weak diversity and gender imbalance

- Despite a 33% aspiration for women's representation in police, a recent analysis shows women form only **about 12.3%** of the force nationally and barely **8% of senior officers**.
- SC/ST/OBC personnel form a majority (59%) of the police workforce but remain concentrated at constable levels; their share in senior posts (like DSP and above) is very low.
- This makes the police appear socially distant from communities they serve.

5. Politicisation and lack of autonomy: The Supreme Court in **Prakash Singh vs Union of India (2006)** noted political interference in postings, transfers and investigations, and ordered measures like fixed tenures and independent State Security Commissions. Non-implementation keeps the image of police as a partisan tool instead of a neutral rule-of-law agency.

6. Changing crime profile and public expectations: Today crime is not limited to theft or street crime. **Cybercrime, financial fraud, organised crime networks and frequent public protests** have become more common. People now expect the police to handle these issues in a **professional, fair and non-violent** way.

7. International human-rights commitments: India endorses United nation (UN) standards that require police to protect human rights and use force only when strictly necessary and proportionate. When local practices diverge from these norms, India's global image and domestic confidence in the police both suffer.

Initiatives Taken for Uplifting the Police's Image in India

1. Supreme Court-mandated structural reforms

In **Prakash Singh (2006)**, the Court directed States to create State Security Commissions, Police Establishment Boards, Police Complaints Authorities, National Security Commission (NSC) and ensure fixed tenures for DGPs and key field officers. These measures aim to reduce political interference and professionalise the force.

2. Commissions and Model Police Acts

- The **National Police Commission, Padmanabhaiah Committee (2000)** and **ARC-2 (Public Order)** recommended **community-oriented, accountable policing and separation of law-and-order from investigation functions**.
- The Union government has also promoted a **Model Police Act, 2006** (drafted by a committee led by Soli Sorabjee) for States to replace the colonial 1861 law.

3. SMART policing and modernisation schemes:

- The Ministry of Home Affairs (MHA) has promoted **SMART policing** (Strict and Sensitive, Modern and Mobile, Alert and Accountable, Reliable and Responsive, Trained and Tech-savvy).

- SMART concepts along with modernisation schemes like **Assistance to States for Modernisation of Police (ASUMP)**.

4. Technology platforms: CCTNS and ICJS

- Under **Crime and Criminal Tracking Network and Systems (CCTNS)**, **17,712 police stations** have been networked, creating over **35 crore crime and criminal records** at the national level.
- Integration with the **Inter-operable Criminal Justice System (ICJS)** aims to speed up FIRs, chargesheets and coordination, improving public perception of efficiency.

5. **Citizen-centric ranking and best-practice compendiums:** The **Ranking of Police Stations** initiative uses performance data and **citizens' feedback** (20% weight) to identify people-friendly stations.

6. Gender-sensitive measures and women help desks

- India Justice Report notes that as of January 2022, **72% of police stations** had women help desks, with some States achieving 100% coverage.
- Under the **Women Safety Division of MHA**, the Union government has issued advisories to States/UTs for **setting up Women Help Desks in every police station** and has provided financial assistance for these desks under the Nirbhaya Fund.

7. **Training, surveillance and ethics initiatives:** Bureau of Police Research and Development (BPR&D) and States have expanded training in human rights, cybercrime and forensics, while CCTV use in police stations and public spaces has grown.

Way Forward

1. **Reform the 'Thana'**- The thana system is the most basic unit of police functioning. Through the thana, the police remains in contact with the common man. Thus, improving the working conditions of thana-level constables should be a priority.
2. **Enhance Police Budget and upgrade Police Infrastructure**- More than 90% of the police budget in the states are used for salary and establishment costs. Allocation for training, procurement and technology deployment should increase. States must fully use the funds for police modernisation.
3. **Reform the criminal justice system**- Focus must be on the effective implementation of the Malimath Committee recommendations to reform the criminal justice system.
4. **Training and Capacity Building of policemen**- Training the police forces should be a continuous process along with the evolving nature of the crime space. **For ex-** The cyber cell of the Delhi Police to deal with cyber criminals.
5. **Upgrade technology and research in policing**- Reform the Bureau of Police Research and Development (BPRD) by making it a more inclusive institution. **For ex-** Expertise of social science experts for better research on criminology, NCRB's Automated Facial Recognition System (AFRS) to identify criminals.

6. Improving public perception through community policing- Community policing initiatives like 'Janamaithri Suraksha Project-Kerala', 'Meira Paibi-Assam' must be undertaken to improve ground level policing.

7. Learning from international best practices- Japan's separate police commission for recruitment, New York Police specialisation of police model, must be used to reform our police and make it a global Police.

8. Increase women representation- 33% women reservation in police should be implemented in all the states. States like Bihar have taken a step in this direction.

All reforms must be enunciated in the direction of development of SMART Police– Sensitive, Mobile, Alert, Reliable and Techno-savvy.

Conclusion

Lifting the police's image in India needs work at many levels. We must reduce fear, end custodial abuse, and address vacancies, diversity gaps and politicisation. Existing reforms like Supreme Court directions, SMART policing, CCTNS, gender-sensitive measures and community policing provide a base. The real change will come when every thana becomes people-friendly, technology-enabled and accountable, and when citizens begin to see the police as a trusted partner in justice, safety and democratic governance.

For detailed information on **Police Reform In India In 2024** [read this article here](#)

Question for practice:

Discuss the challenges in improving the image of the Indian police and the reforms undertaken to address them.

Source: [Businessline](#)

India can build a \$1.2-trillion bioeconomy by 2047

Source: The post “**India can build a \$1.2-trillion bioeconomy by 2047**” has been created, based on “**India can build a \$1.2-trillion bioeconomy by 2047**” published in “**The Hindu**” on 05th December 2025.

UPSC Syllabus: GS Paper-3- Economy

Context: India's bioeconomy has grown significantly, from \$10 billion in 2014 to over \$165 billion in 2024. With the right reforms, India has the potential to surpass \$1.2 trillion by 2047, contributing significantly to the vision of Viksit Bharat. Achieving this goal requires not only scientific excellence but also substantial reforms in capital markets and regulatory systems. These reforms are critical to ensuring that India can become a global biotech leader, much like China has.

Current Status of India's Bioeconomy

1. Biotechnology is a capital-intensive sector driven by deep science and long development cycles.
2. Globally, biotech companies list on public markets even at the research stage to secure patient capital.
3. However, in India, pre-revenue or research-stage biotech companies cannot list, which limits their access to funding.

4. This has forced many high-potential Indian biotech startups to relocate abroad, stifling domestic growth.

China's Success Model

1. China provides a valuable case study in how capital-market innovation and regulatory reform can foster rapid biotech growth.
2. The STAR Market in Shanghai and the Biotech Chapter in Hong Kong allowed early-stage biotech firms to list without profitability requirements.
3. This policy has mobilized billions in capital, with China attracting \$45 billion in life sciences venture capital between 2018 and 2022—nearly 10 times more than India.
4. This influx of capital has powered China's rise as a global leader in biotechnology.

Challenges in India's Bioeconomy

1. **Capital-Access Challenges:** In India, the inability of biotech companies to list during their early stages restricts their access to capital.
 - a. This situation makes it difficult for innovators to raise funds and scale their businesses, resulting in the relocation of promising startups to countries with more favorable capital-market conditions.
2. **Regulatory Bottlenecks:** India's regulatory system is slow and fragmented. Approval timelines for First-in-Human (FIH) trials are lengthy, and each phase of clinical trials requires separate reviews, leading to delays.
 - a. Additionally, regulatory bodies like the CDSCO lack the scientific capacity to evaluate emerging technologies, such as mRNA vaccines and gene therapies, which slows down innovation.

Proposed Solutions

1. **Capital-Market Innovation:** India needs to create a dedicated listing board for biotech companies, similar to NASDAQ, the STAR Market, and Hong Kong's Biotech Chapter. This reform would:
 - a. Allow pre-revenue and research-stage biotech companies to list, providing them with access to patient capital.
 - b. Mobilize domestic capital and attract global investors.
 - c. Prevent Indian biotech firms from relocating abroad by providing them with the funding they need to scale in India.
2. **Regulatory Reforms:** India must modernize its regulatory framework to align with global standards and accelerate approval processes. Key reforms include:
 - a. **Empowering ICMR:** The Indian Council of Medical Research (ICMR) should take responsibility for reviewing clinical trial protocols for new drugs, vaccines, and biologics. ICMR's research capabilities and ethical infrastructure make it well-suited for this task.
 - b. **Role of CDSCO:** The Central Drugs Standard Control Organization (CDSCO) should focus on final approvals, ensuring good manufacturing practices (GMP) compliance, and pharmacovigilance. By separating scientific review and regulatory oversight, approval timelines can be reduced, and scientific rigor can be improved.

Expected Outcomes of the Reforms

1. Faster Innovation: The proposed capital-market innovations will provide biotech firms with the funds they need to accelerate research and development. Regulatory reforms will shorten approval timelines by 40-60%, enabling faster commercialization of new technologies.

2. Global Leadership in Biotechnology: With these reforms, India can become a global leader in emerging biotech fields such as mRNA, gene therapy, biosimilars, and biologics. India could also establish itself as a hub for clinical research and bio-manufacturing, creating millions of high-value jobs and contributing to global healthcare innovation.

Way Forward

1. **Capital-Market Innovation:** Create an Innovation & Biotech Board to allow pre-revenue biotech companies to list and access patient capital.
2. **Regulatory Reforms:** Restructure the regulatory system by empowering ICMR for scientific reviews and assigning CDSCO responsibility for final approvals and compliance.
3. **Encourage Investment:** Promote investment in biotech research and development to drive growth in the sector.

Conclusion: India's bioeconomy holds immense potential, but realizing the \$1.2 trillion target by 2047 requires substantial reforms in capital markets and the regulatory system. By establishing a dedicated listing platform for biotech companies and streamlining the regulatory approval process, India can foster a thriving biotech ecosystem. These reforms will allow India to transition from being the "pharmacy of the world" to the "lab of the world," contributing significantly to global health and economic progress.

Question: Discuss the challenges faced by India's bioeconomy and the proposed solutions, particularly in capital-market innovation and regulatory reforms. How can these reforms help India become a global leader in biotechnology by 2047?

Urban Soils - The Unsung Hero

Source: The post "Urban Soils - The Unsung Hero" has been created, based on "A day to pause and come down to earth" published in "The Hindu" on 05th December 2025.

UPSC Syllabus: GS Paper-3- Environment

Context: World Soil Day is observed on December 5th every year to raise awareness about the importance of soil in sustaining life. The theme for 2025, "Healthy Soils for Healthy Cities," emphasizes the need to protect urban soils and address challenges faced by cities.

Significance of Urban Soil

1. Urban soil is a dynamic, living resource that plays a crucial role in sustaining urban life.
2. With over 56% of the global population now living in cities, the health of urban soil has become a critical issue.
3. Soil in urban environments contributes to environmental, social, and economic resilience.

Key Benefits of Healthy Urban Soil

1. **Combating Climate Change and Extreme Heat:** Urban areas are prone to higher temperatures due to the urban heat island effect. Healthy soils, covered with vegetation, absorb heat, sequester carbon, and act as natural air conditioners in parks and green spaces.
2. **Flood Prevention and Water Management:** Healthy urban soil absorbs and filters rainwater, helping prevent flooding. It replenishes groundwater supplies and reduces the risk of urban floods, unlike impermeable surfaces like concrete.
3. **Supporting Urban Food Systems and Biodiversity:** Urban agriculture (e.g., rooftop farms, community gardens) relies on fertile soil to provide fresh food and enhance local resilience. Healthy soils support biodiversity, including essential organisms like earthworms and pollinators, which help with plant growth and soil fertility.
4. **Improving Mental and Physical Health:** Contact with nature in urban green spaces has been proven to reduce stress, anxiety, and depression. Gardening and spending time in soil-rich environments encourage physical activity and improve overall well-being.

Degradation of Urban Soil

1. Urban soil is among the most degraded natural resources due to various pressures.
2. Common causes of degradation include: Contamination from industrial waste, Compaction from construction activities, Loss of organic matter and sealing of soil by concrete and asphalt, which suffocates soil life.
3. These factors reduce soil fertility, threaten food safety, and damage ecosystems.

Blueprint for Action: Steps to Protect Urban Soil

1. **Urban Soil Restoration and Protection**
 - Prioritize the rehabilitation of degraded urban soils through composting, soil testing, and organic amendments.
 - Prevent further soil sealing by controlling urban development and minimizing new construction that covers soil.
2. **Promoting Green Infrastructure**
 - Replace concrete with soil-based solutions such as parks, rain gardens, and tree belts.
 - These green infrastructures reduce urban heat, manage stormwater, and improve urban livability.
3. **Supporting Urban Agriculture**
 - Encourage community gardens, rooftop farms, and backyard plots to promote soil health and local food production.
 - Urban agriculture can also strengthen social bonds and enhance resilience in urban communities.
4. **Adopting Responsible Soil Management Practices**
 - Use eco-friendly practices like reducing chemical fertilizers, minimizing pesticide use, and planting native species.
 - Protect topsoil through mulching and other soil conservation techniques.
5. **Increasing Soil Literacy and Composting**
 - Schools and communities should engage in soil education through workshops and hands-on activities.
 - Promote composting at the household level to recycle organic waste back into the soil, enriching its fertility.

Conclusion: The foundation of resilient cities lies not just in infrastructure but in the health of urban soil. By prioritizing the protection and restoration of urban soils, cities can address environmental challenges such as climate change, flooding, food insecurity, and public health. Healthy cities depend on healthy soils, and it is up to individuals, communities, and governments to act as stewards of this vital resource for a sustainable future.

Question: Discuss the key benefits of healthy urban soil and the actions required to protect and restore it. How can healthy soil help address challenges like climate change, flooding, and food insecurity in cities?

A global model to overcome TB

Source: The post “A global model to overcome TB” has been created, based on “A global model to overcome TB” published in “The Hindu Businessline” on 06th December 2025.

UPSC Syllabus: GS Paper-2- Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

Context: India, despite being one of the fastest-growing economies globally, continues to battle a high burden of tuberculosis (TB). This age-old disease, both preventable and curable, presents a stark contrast to India's economic progress. The National Strategic Plan (NSP) for Tuberculosis Elimination, set with the goal of eradicating TB by 2025, faces significant hurdles. The Global TB Report 2024 highlights that India accounted for over a quarter of global TB cases in 2023, a situation that underscores the ongoing challenge despite India's growth.

Current TB Scenario in India:

1. India continues to account for 26% of global TB cases, maintaining the highest share in global TB incidence for almost a decade.
2. As per the World Health Organization (WHO), India is part of all three global High Burden Country lists — TB, TB with HIV, and Multi-Drug Resistant (MDR) TB.
3. The country has seen a steady rise in TB notifications, especially in the years 2017–2024, with a notable dip during the COVID-19 pandemic due to limited healthcare access.
4. The number of medically treated TB cases per 100,000 people has slightly decreased from 305 per 100,000 in 2015-16 to 222 per 100,000 in 2019-21, but the high prevalence persists.

National Strategic Plan for Tuberculosis Elimination (2017-2025):

1. India's NSP aims to eliminate TB by 2025, five years ahead of the global target of 2030. However, achieving this target seems increasingly ambitious given the current trends.
2. Despite efforts to scale up TB interventions, India is struggling with high TB incidence and mortality, reflecting significant gaps in TB prevention, detection, and care.

Key Challenges in TB Control:

1. **Lack of Public Awareness and Misconceptions:** Awareness about TB's transmission remains limited.
 - a. **NFHS-5 data reveals** that misconceptions about how TB spreads are widespread, including beliefs that TB spreads through sharing utensils or touching a person with TB.

- b. Such misunderstandings lead to inadequate preventive practices and fuel the stigma surrounding TB, causing patients to conceal their diagnosis and reducing reporting and treatment adherence.
2. **Stigma and Secrecy:** Stigma is a significant barrier in TB control. Data from NFHS-5 shows that around 15.6% of adult women and 22.9% of men would prefer to keep a TB diagnosis secret. This tendency contributes to underreporting and delays in seeking medical attention, further exacerbating the spread of the disease.
3. **Involvement of the Private Sector and Treatment Gaps:** Despite India's free TB care infrastructure through public healthcare facilities, over 25% of TB patients seek treatment exclusively from private healthcare providers.
 - a. The private sector often provides suboptimal care, including misdiagnosis and exorbitant treatment costs, pushing patients into "medical poverty."
 - b. Additionally, private TB providers do not always report cases to the government, impeding accurate data collection and effective program implementation.
4. **Nutritional Deficiency:** Under-nutrition is a major contributor to India's TB burden. Research indicates that nutritional deficiencies contribute to nearly 35% of the country's TB burden.
 - a. The Ni-kshay Poshan Yojana, launched in 2018, has provided direct nutritional support to over 1.37 crore TB patients, which has helped improve treatment adherence and recovery outcomes.

Innovations and Progress in TB Control:

1. **TB Mukht Bharat Abhiyan:** The TB Mukht Bharat Abhiyan, launched to accelerate the decline of TB cases, has led to a 21% reduction in TB incidence between 2015 and 2024.
 - a. A key factor behind this progress is the shift towards early and proactive detection, including the screening of asymptomatic individuals. This approach has uncovered subclinical TB cases, which are significant contributors to the spread of the disease.
 - b. Over 19 crore people have been screened, leading to the detection of over 8.61 lakh asymptomatic cases among the total 24.5 lakh diagnosed TB cases.
 - c. India has pioneered the use of AI-enabled handheld X-ray devices for large-scale, rapid screening, especially in underserved areas, including urban slums and remote regions.
2. **Community Involvement:** The Jan Bhagidari (People's Participation) approach has been central to the campaign's success.
 - a. Over 2 lakh youth volunteers and 6.77 lakh Ni-kshay Mitras (TB care supporters) have been mobilized to support TB patients. This has helped reduce stigma and foster community-based care.
 - b. Over 15 lakh Ni-kshay Shivirs (community support camps) have been conducted, encouraging active community participation in TB control.
3. **Impact of Nutrition on TB Outcomes:** The integration of nutritional support has been another pillar of India's success. The Ni-kshay Poshan Yojana, which provides financial assistance for nutrition, has been crucial in improving the health and resilience of TB patients.
 - a. Nutritional support has improved patient outcomes, treatment adherence, and recovery rates.
 - b. Additionally, over 45 lakh nutritious food baskets have been distributed to TB patients through the Ni-kshay Mitra initiative, directly supporting the well-being of affected individuals.

Way Forward

1. **Strengthening Awareness and Education:** Large-scale awareness campaigns focusing on the correct modes of TB transmission and the importance of early treatment seeking are crucial. The role of the media, celebrities, and TB survivors in reducing stigma and spreading awareness must be amplified.
2. **Enhancing Healthcare Access and Regulation:** Access to affordable, quality TB care must be enhanced, particularly in rural and underserved areas. The regulation of private healthcare providers and better integration with the public TB control program is essential to ensure all patients receive accurate diagnoses and effective treatments.
3. **Increased Investment in TB Research and Technology:** India's commitment to scaling up TB detection through technology, such as AI-based diagnostics and rapid molecular testing, must be expanded. This includes further improving surveillance systems to track and intervene in TB cases earlier. The government must invest in research to develop more effective TB vaccines and drugs, especially for drug-resistant strains.
4. **Political Commitment and Funding:** For the NSP to succeed, stronger political will, increased funding, and a comprehensive whole-of-government approach are needed. Ensuring equitable allocation of resources between TB and other public health challenges, such as COVID-19, is essential.

Conclusion: India's TB burden remains one of the world's highest, but the country has made notable progress in its fight against the disease. Initiatives like the TB Mukt Bharat Abhiyan, strengthened community participation, and nutritional support are driving change. However, significant challenges remain, including stigma, underreporting, and healthcare gaps. To achieve the ambitious goal of TB elimination by 2025, India must continue its innovative approach while expanding access to care, enhancing public awareness, and securing sustained political and financial commitment. Only through a multi-faceted, inclusive approach will India be able to achieve a TB-free future.

Question: Despite significant progress, what are the main challenges India faces in eliminating tuberculosis by 2025?

Chile's lesson for India's coal conundrum

Source: The post "Chile's lesson for India's coal conundrum" has been created, based on "Chile's lesson for India's coal conundrum" published in "The Hindu" on 06th December 2025.

UPSC Syllabus: GS Paper-3- Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.

Context: India faces a critical challenge in phasing out coal while balancing its economic growth, energy needs, and environmental concerns. Despite significant renewable energy progress, India dropped in the **Climate Change Performance Index** due to slow progress in reducing coal reliance. Chile's experience in transitioning away from coal provides valuable lessons for India. While both countries face challenges in transitioning to cleaner energy sources, Chile's approach could offer insights into how India might manage its own coal exit.

Current Coal Scenario in India:

1. **High Dependency on Coal:** Coal continues to make up over half of India's energy mix, and it contributes to 75% of electricity generation. This high reliance on coal remains a major barrier to achieving India's climate goals.
2. **Renewables Share:** While India has increased its renewable energy capacity significantly, with 50% of total installed power capacity coming from renewables by 2024, only **20% of electricity** was

generated from renewable sources in the same year. This shows that renewable energy is still not fully integrated into the national grid.

3. **Increase in Domestic Coal Production:** India is increasing domestic coal production, exacerbating the challenge of reducing coal dependence while expanding clean energy sources.

Chile's Experience:

1. **Dramatic Coal Reduction:** Chile reduced coal's share in electricity generation from 43.6% in 2016 to 17.5% by 2024. This was accompanied by a shift towards renewable energy, with wind and solar power now contributing over 60% of the country's electricity mix.
2. **Government Policy and Actions:** The transition in Chile was driven by **decisive government actions**. This included a carbon tax of \$5 per tonne of carbon emissions and stringent emission standards for coal plants. The government also used **competitive auctions** for wind and solar power, which drove down the cost of renewable energy.
3. **Energy Storage and Grid Stabilization:** Chile invested in energy storage systems to ensure the stability of the grid as renewable energy sources like solar and wind were scaled up.
4. **Phaseout Commitment:** Chile has committed to phasing out all coal-fired power plants by **2040**, showing a clear long-term strategy for the country's energy transition.
5. **Political Environment and Market Reforms:** Chile's political environment and the privatization of key sectors enabled the rapid implementation of market-driven reforms. The smaller share of coal in Chile's energy mix also made the transition easier compared to India's deeper reliance on coal.

Challenges for India:

1. **Deep Coal Dependency:** Unlike Chile, India has a much deeper dependency on coal, especially in coal-rich regions like Jharkhand, Chhattisgarh, Odisha, and West Bengal. This makes the transition more complex and potentially more disruptive for local economies.
2. **Social and Economic Risks:** Coal regions in India face social risks from abrupt closures, including job losses and economic disruption. The lack of alternative industries in these areas poses a significant challenge for providing new employment opportunities for displaced workers.
3. **Economic Alternatives:** India's limited economic alternatives in coal-dependent regions make it difficult to create viable paths for economic diversification.

Need for Decarbonization:

1. **Climate Change Risks:** Phasing out coal is essential to mitigate the impact of climate change, which is expected to significantly harm India's economy. It is estimated that by 2100, climate change could reduce India's GDP by 3%-10% due to **heat stress** and declining **labour productivity**.
2. **Health Impacts:** Coal pollution is linked to severe health problems, including higher infant mortality rates in districts near coal plants. This makes the coal phaseout a critical part of improving public health, in addition to mitigating climate change.
3. **"No Regrets" Policy:** Coal phaseout is a "no regrets" policy because it not only helps in avoiding the damage caused by climate change but also reduces health-related damage caused by coal pollution.

Steps for Transition:

1. **Tackling Renewable Energy Limitations:**

- a. **Expanding Renewable Energy:** India must focus on expanding renewable energy capacity, particularly solar and wind power, and improve energy storage systems to ensure grid stability.
- b. **Electrification of Sectors:** A major part of the transition involves electrifying **transport, industry, and households**. This would reduce the overall demand for coal and facilitate the integration of clean energy into various sectors.
2. **Reforming Markets and Regulations:**
 - a. **Carbon Pricing:** Implementing **carbon pricing** will make coal less attractive economically by accounting for its environmental costs.
 - b. **Remove Coal Subsidies:** Coal subsidies must be phased out to avoid further entrenching coal dependence.
 - c. **Clean Dispatch Rules:** Power procurement contracts should favor renewables over coal, incentivizing investment in clean energy projects.
 - d. **Encourage Renewable Investments:** Reforming market structures and creating incentives for renewable energy investments will help accelerate the shift away from coal.
3. **Support for Workers:**
 - a. **Reskilling Programs:** Following Chile's example, India must provide robust support for coal workers through **reskilling programs** to help them transition to new industries and employment opportunities.
 - b. **Alternative Livelihoods:** Developing alternative livelihoods for workers displaced by coal plant closures is essential. This will help mitigate the social impact of the transition.
 - c. **Transition Fund:** A dedicated transition fund, such as the proposed "**Green Energy Transition India Fund**," is crucial to support displaced workers and foster the growth of renewable energy industries in coal-dependent regions.
4. **Financing the Transition:**
 - a. **Blended Financing Model:** A blended financing model, combining public and private capital, should be adopted. The government can direct funding toward **community welfare, worker reskilling, and social protection**, while private investors can focus on **expanding renewable energy infrastructure**.
 - b. **District Mineral Foundation:** The **District Mineral Foundation corpus** can be strategically utilized to support **entrepreneurship and economic diversification** in coal-dependent regions, helping to reduce their reliance on coal.

Conclusion: The phaseout of coal needs to become a **top political priority** in India. While renewable energy gains show promise, a clear roadmap to replace coal with renewable sources is essential for achieving India's climate goals. India needs to develop a comprehensive, actionable roadmap for phasing out coal, addressing financing, worker support, and market reforms. Chile's experience provides valuable lessons in transitioning from coal to renewable energy, particularly in terms of policy, market reforms, and worker support. India must learn from these strategies while adapting them to its unique context to ensure a just and sustainable energy transition.

Question: Drawing lessons from Chile's experience, discuss the challenges and strategies for India to phase out coal and transition to renewable energy while ensuring socio-economic stability and environmental sustainability.

A Growing Shadow Over Digital Constitutionalism

UPSC Syllabus Topic: GS Paper 2 -Government Policies for various sectors

Introduction

Digital technologies now shape welfare services, policing, communication, and even political expression. But as these systems expand, concerns about surveillance, data misuse, consent, bias, and weak oversight have intensified. The Sanchar Saathi controversy exposed how quickly digital tools can challenge constitutional protections. With algorithms, biometrics, and AI influencing daily life, India faces an urgent need to safeguard liberty, dignity, equality, and accountability in the digital space. This is the core idea of digital constitutionalism.

What is “digital constitutionalism”?

Meaning: Digital constitutionalism means applying core constitutional values such as liberty, dignity, equality, fairness, accountability, and the rule of law to the digital world. It ensures that technology, data systems, and artificial intelligence do not weaken citizens’ rights.

Digital Governance and New Risks: It recognises that today’s governance increasingly depends on digital tools like biometric databases, predictive algorithms, AI-based policing, and automated welfare systems. These systems deeply influence people’s daily lives. Without constitutional checks, they can become instruments of surveillance, exclusion, and discrimination.

Constitutional Basis: The idea gained strength after the Supreme Court in **Justice K.S. Puttaswamy (2017)** held that privacy is a fundamental right and that any restriction on it must be legal, necessary, and proportionate. This judgment created a constitutional basis for protecting individual rights in the digital age.

Why There Is Need for “Digital Constitutionalism”

- 1. Constant and invisible surveillance:** Surveillance today is silent. Metadata, location tracing, behavioural patterns, and biometric identifiers allow authorities and companies to observe people without physical presence. This chills free speech and encourages self-censorship.
- 2. Erosion of meaningful consent:** Consent is now a routine click. People do not fully understand how their data will be used or shared. This leads to slow loss of personal control over identity and choices.
- 3. Concentration of power:** Control lies with tech designers, law enforcement agencies, and private companies. Citizens become passive data subjects rather than active right-holders. This shifts the democratic balance away from people towards institutions and corporations.
- 4. Discriminatory technologies:** Algorithmic tools and facial recognition can produce biased results. Global studies show higher false positives for people of colour and women. These errors may lead to humiliation, wrongful suspicion, denial of services, or unfair targeting. The main problem here is **discrimination in the outcome** of the technology.

5. Lack of transparency and appeal: Automated systems decide who gets welfare, who is flagged by police, and whose content is removed online. Often, people do not know **why** a decision was taken or **how** the system works. When a decision is wrong, there is no clear explanation or simple appeal process. The main problem here is the **absence of openness and remedy**, which violates natural justice.

6. Weak legal framework: The IT Act, 2000 and existing rules were not designed for AI or data-driven governance. Courts have issued limited guidelines, but they are scattered. India lacks an institution that can regularly audit high-risk algorithms or surveillance tools.

7. Growing democratic risk: When digital systems influence rights but remain outside constitutional control, democracy becomes weak. If unchecked, digital governance can shift towards a “monitoring state” rather than a rights-respecting state.

Thus, digital constitutionalism is essential to ensure that technology does not overpower citizens’ freedoms.

Initiatives Taken

Government Initiatives in India

- **Sanchar Saathi rollback:** The government withdrew the mandatory installation order within 48 hours after concerns about privacy and consent. This shows that public pressure can correct digital overreach.
- **Puttaswamy Judgment (2017):** Established privacy as a fundamental right and set the tests of legality, necessity, and proportionality for any intrusion.
- **Digital Personal Data Protection Act, 2023:** Introduced rules on data processing, although exemptions for the State remain wide.
- **NITI Aayog’s Responsible AI Framework:** Suggests transparency, safety, accountability, and non-discrimination in AI systems.
- **India AI Mission (2024–25):** It calls for ethical, responsible AI deployment, although concrete enforcement mechanisms are still developing.

Global Government Initiatives

- **EU’s General Data Protection Regulation (GDPR):** Sets strict rules on consent, data minimisation, purpose limitation, and user rights. It is considered the strongest example of digital constitutionalism.
- **EU AI Act (2024):** Introduces a risk-based approach. It bans unacceptable AI uses like certain biometric mass surveillance and demands strict checks for high-risk AI.
- **UN Resolutions on AI Governance (2023–24):** It call for safe, secure, trustworthy and human-centric AI that respects human rights and supports sustainable development.

Private Sector and Civil Society Initiatives

- **Platform resistance:** Apple refused to install Sanchar Saathi by default, forcing reconsideration.

- **Investigative journalism:** Reuters exposed the issue, creating public awareness.
- **Digital rights groups:** Organisations like the Internet Freedom Foundation highlight legal gaps, protest mass surveillance, and demand stronger oversight.
- **Global NGOs:** Amnesty International and others campaign against biased facial recognition systems.

These actors cannot replace constitutional institutions, but they often initiate public debate and push governments to rethink intrusive measures.

Way Forward

1. **Independent digital rights commission:** Create a statutory, independent body with powers to audit high-risk algorithms, inspect surveillance programmes, order corrections and provide quick remedies to citizens.
2. **Comprehensive surveillance law:** Surveillance should be allowed only in clearly defined, grave national-security or serious crime situations, subject to the Puttaswamy tests of legality, necessity and proportionality and prior judicial warrants wherever possible.
3. **Strong transparency and oversight:** Mandatory parliamentary review, public transparency reports on interception and algorithmic tools, and routine audits similar to EU-style fundamental-rights impact assessments for high-risk AI.
4. **Algorithmic accountability and due process:** Citizens should have a clear right to explanation and a right to appeal against automated decisions in welfare, policing, credit, employment or content moderation. There is need for regular bias-testing of “risky AI devices” to avoid discrimination.
5. **Tight data-protection norms:** Purpose limitation, minimal collection, storage limits and heavy penalties for abuse should be enforced in practice, not just on paper, drawing on principles already recognised in GDPR-style regimes.
6. **Digital literacy as constitutional empowerment:** People must understand how digital systems affect their rights. Citizens need skills to question, complain and organise against arbitrary digital power; otherwise, rights remain abstract.

Conclusion

Digital systems now hold enormous power over rights, identity, and opportunities. Without strong safeguards, they may create silent, unchecked forms of surveillance and discrimination. Digital constitutionalism ensures that technology remains accountable to democratic values. Strong laws, transparent systems, independent oversight, and empowered citizens are essential to protect freedom and dignity in an increasingly data-driven world.

Question for practice:

Examine how the rise of digital technologies has created the need for “digital constitutionalism” in India.

Source: [The Hindu](#)

India-Russia Relation

UPSC Syllabus Topic: GS Paper 2- Effect of policies and politics of developed and developing countries on India's interests.

Introduction

India–Russia relations are being re-energised after President Vladimir Putin's two-day state visit to New Delhi for the 23rd Annual Summit. The two leaders used the visit to deepen their Special and Privileged Strategic Partnership in trade, connectivity, defence and nuclear energy. This comes at a time of stalled India–US ties, shifting great-power equations, the Ukraine conflict, and renewed debate on how India can protect its long-term strategic autonomy.

Background and Changing Geopolitical Context

Indo-Soviet strategic partnership: India–Russia relations draw on the old Indo-Soviet strategic partnership. Earlier, both countries shared a common perception of threat from China. This, combined with US policies unfriendly to India on issues such as Jammu and Kashmir, created strong strategic alignment.

After the Cold War and the breakup of the Soviet Union, this equation changed. The earlier Chinese security “glue” faded for Russia. Yet, a large defence hardware relationship, built over three decades, continued to provide a floor to the partnership.

Post-Cold War Reordering: After the Soviet collapse, India diversified its defence sources, but this shift required time. Russia still remained important because many key Indian platforms depended on Russian systems. Russia also wanted to retain India as a major defence market. This legacy continues to shape ties today.

New Strains in India–US Relations: India–US ties have lost momentum under Donald Trump's second term. The US seems less focused on the Indo-Pacific and on countering China. India's place in the earlier Indo-Pacific strategy has reduced. The US has also imposed harsh tariffs on Indian goods and extra penal tariffs for buying Russian oil. India has limited ability to retaliate.

Key Highlights of the Recent 23rd India-Russia Annual Summit

1. Long-Term Economic Vision

- Both sides adopted the **Programme for the Development of Strategic Areas of India–Russia Economic Cooperation till 2030 (Programme 2030)**.
- They set a revised bilateral trade target of **USD 100 billion by 2030**, with emphasis on increasing India's exports and balanced trade.

2. Progress Toward a Trade Agreement

- India and the **Eurasian Economic Union** are working towards a Free Trade Agreement.
- They welcomed outcomes of the **25th and 26th IIRGC-TEC sessions**, the **India–Russia Business Forum** (New Delhi, November 2024; Moscow, August 2025), and the **India–Russia Business Dialogue**.
- Both reaffirmed support for a **WTO-centred** multilateral trading system.

Connectivity and Transport Corridors

- Both sides agreed to deepen cooperation on **International North-South Transport Corridor (INSTC)**, the

Chennai-Vladivostok Maritime Corridor, and the Northern Sea Route.

- They noted an **MoU on training specialists for ships in polar waters** and ongoing cooperation between railways through technology exchange.

Cooperation in the Russian Far East and Arctic

- They highlighted the **2024–2029 Programme of Cooperation in Trade, Economic and Investment Spheres** for the Russian Far East and Arctic.
- Priority sectors include **energy, mining, agriculture, manpower, pharmaceuticals, diamonds, and maritime transport**.
- Russia welcomed India's participation in the **6th International Arctic Forum, Murmansk (March 2025)**.

Payment Systems and Currency Use

- Both sides agreed to expand **bilateral settlements in national currencies**.
- They will continue discussions on **interoperability of national payment systems, financial messaging platforms, and central bank digital currencies**.

Defence and Nuclear Cooperation

- Russia remains a key partner for **nuclear submarines** and **anti-missile systems** such as the **S-400**, used effectively in **Operation Sindoor**.
- Russia also reaffirmed willingness to work with India on **small modular reactors (SMR)** and **floating nuclear power plants**.

Mobility, Fertilizers, and Critical Materials

- Both sides welcomed steps to ensure **long-term fertilizer supplies** and explore **joint ventures** in this sector.
- They noted agreements on **skilled worker mobility**.
- Russia acknowledged India's role in the **Saint Petersburg International Economic Forum (June 2025)** and **Eastern Economic Forum (September 2025)**.
- Both stressed trade in **energy, mineral resources, precious stones, metals, and critical raw materials** as vital for national security and supply chain stability.

Global Reactions and Geopolitical Impact

1. Russia's Domestic Gain: Warm reception in India provides Putin significant political value at home. It shows he is not isolated internationally despite sanctions and the war in Ukraine.

2. China's Mixed View: Some Chinese voices worry that stronger India–Russia defence ties may strengthen a regional competitor. However, China may also welcome shifts in India–US ties, as reduced India–US alignment lowers pressure on Beijing.

3. Europe's Discomfort but Strategic Convergence: Europe is unhappy with India's warm engagement with Putin while the war in Ukraine continues. Yet long-term strategic convergence with India is increasing due to concerns about US unpredictability and China's assertiveness. European leaders will attend India's next Republic Day as honoured guests.

4. India's Position on Ukraine: India supports early peace and stands for sovereignty and territorial integrity, while avoiding direct criticism of Russia. This reflects a balance between values and practical interests.

What are the Challenges in the relation?

1. Deepening of India-US relations-

- The India-US relations is rapidly deepening especially in the defense sector, which is exemplified in the India-US nuclear deal in 2008, US emerging as the top arms supplier to India by overtaking Russia and India-US Foundational agreements such LEMOA, COMCASA, BECA.
- Due to these developments, Russia changed their decades-old policy and start supplying China with weapon systems like Sukhoi 35 and the S-400 missile defence system.

2. Russia's growing dependence on China- Moscow and Beijing have forged the closest possible ties in their history. This has generated fears that Russia will become a subordinate partner given the growing economic, demographic and technological asymmetry between them. This could jeopardize Moscow's neutrality on Sino-Indian tensions.

3. Russia's increased engagement with Pakistan- Russia has been increasing its economic and defence cooperation with Pakistan, like conduction of bilateral exercise Friendship. The RCP axis (Russia, China, Pakistan) will be detrimental to India's national interest.

4. Trade Imbalances- Even though the bilateral trade between the two nations has increased in the face of crude oil imports, there is considerable trade imbalances between India and Russia. Of the total trade of \$65 billion, India's exports constitute less than \$5 billion.

5. Defense Delays- There have been considerable delays in the delivery of military spares and big-ticket weapon systems like the S-400 Triumf surface-to-air missile systems, to India due to the Ukraine War.

6. Ukraine Crisis- The continuing Russia-Ukraine war has put India into a diplomatic tightspot. India has been facing significant criticism for not condemning the invasion and continuing energy and economic cooperation with Moscow.

What Should be the Way Forward?

1. Neutral Player in the resolution of Ukraine Crisis- India must continue to maintain its positioning as a neutral player that could be a mediator between the two sides in the resolution of the Ukraine Crisis. India must continue to appeal to both sides to 'abide by the international rules and conventions'.

2. Addressing defense supply chain shocks- India and Russia must explore setting up joint venture partnerships to address the shortage of critical defense spare parts.

3. More diplomatic and financial investments- India and Russia must invest more diplomatic and financial resources to finish the pending works for the International North-South Transport Corridor. Both sides should expedite discussions on the Free Trade Agreement with the Eurasian Union for better trade and commerce.

4. Enhanced focus on Eurasia- India and Russia have to explore their opportunities in the Eurasian region. India can study the possibility of expanding Russia's idea of 'extensive Eurasian partnership' involving the EAEU(Eurasian Economic Union) and China, India, Pakistan, and Iran.

5. Unequivocal message to the Western countries- India must send unequivocal message to the West that Russia occupies a pivotal place in India's strategic calculations. It must be conveyed that the West needs India just as much as India needs the West.

Conclusion

India–Russia ties today rest on a legacy of strategic trust, new economic and connectivity initiatives, and sensitive defence and nuclear cooperation. At the same time, US pressure, Russia’s China tilt, the Ukraine war and trade imbalances create real constraints. India must use careful balancing and Programme 2030 to safeguard interests and strategic autonomy amid shifting global geopolitics.

Question for practice:

Discuss how recent geopolitical shifts and the outcomes of the 23rd India–Russia Annual Summit are reshaping the strategic partnership between India and Russia.

Source: [Indian Express](#), [DD News](#)