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GSDP Share as Criterion for Central-State Transfers

UPSC Syllabus Topic: GS Paper 2-Indian Polity – Issues and challenges pertaining to the federal structure.

Introduction

India's system of sharing central tax revenues with States has come under debate due to concerns over **fairness, autonomy, and efficiency**. After GST, States depend more on **central transfers decided by Finance Commissions**. Many States argue that present criteria do not reflect **real economic contribution**. This has renewed focus on using **Gross State Domestic Product (GSDP)** as a key basis for central-State transfers.

India's Structure of Central Transfers

- 1. Role of the Finance Commission:** The Finance Commission decides the **share of gross tax revenue** given to States and the **formula for distribution**. Recommendations of **15 Finance Commissions** have been implemented, while the **16th Finance Commission's report is pending**.
- 2. Channels of Central Transfers:** States receive funds through **tax devolution, grants-in-aid, and centrally sponsored schemes (CSS)**. While tax devolution is formula-based, **grants and schemes are often tied** to central priorities.
- 3. Post-GST Fiscal Stress:** GST reduced States' **taxation powers** and caused **revenue losses due to rate cuts**. At the same time, the rise of **cesses and surcharges reduced the divisible pool** shared with States.
- 4. Equity-Focused Devolution Approach:** Most Finance Commissions have prioritised **equity** using **income distance and population** criteria. **Frequent changes in weights and large regional differences in fiscal capacity** continue to create dissatisfaction among States.

Concerns in India's Structure of Central Transfers

- 1. Shrinking Divisible Pool:** Cesses and surcharges rose from **11.3% of gross tax revenue in 2009-10 to 16.3% in 2022-23**. These are **not shared with States**, reducing their fiscal space.
- 2. Increase in Tied Transfers:** The expansion of **centrally sponsored schemes** has limited States' **freedom to allocate funds** based on local needs.
- 3. Weak Compliance with Finance Commission Norms:** During the **15th Finance Commission period**, only **38.1% of gross tax revenue** was actually devolved, against the **recommended 41%**.
- 4. Equity Over Efficiency Bias:** Most Finance Commissions relied heavily on **income distance and population**. These criteria prioritised redistribution but **weakened the link between contribution and transfers**.

Tax Collection versus Tax Contribution Problem

- 1. Location-Based Tax Recording:** Direct tax data reflects the **place of collection**, not the place where **income is generated**, creating distortion in assessing State-wise contributions.

2. **Registered Office Bias:** Companies operating across India pay taxes where their **registered offices are located**, inflating tax contribution figures of some States.

3. **Labour and Business Mobility:** Labour migration and multi-location work arrangements weaken the accuracy of **PAN-based tax attribution**.

4. **Data Gaps in Inter-State Transactions:** Lack of detailed data on **inter-State transactions among associated enterprises** prevents accurate estimation of tax accrual.

Need for an Alternative Measure

1. **Limits of Direct Tax Data:** **PAN-based jurisdiction** fails to capture real economic contribution at the State level, weakening the credibility of **tax-based devolution claims**.

2. **GST Attribution is Less Contested:** GST is **destination-based** and reflects consumption across States, but it **cannot fully capture income generation patterns**.

3. **Requirement of an Indirect Proxy:** A **broader economic indicator** is required to estimate where **central taxes actually accrue**.

Gross State Domestic Product (GSDP) as an Alternative Criterion

1. **Economic Base Indicator:** GSDP reflects the **scale of economic activity** within a State and represents the **underlying tax base** where income is generated.

2. **Limits of Direct Tax Attribution:** Direct tax data records the **place of collection**, making it unsuitable for estimating **State-wise tax contribution**.

3. **Assumption of Uniform Tax Efficiency:** If tax administration efficiency and **tax-to-GSDP ratios do not vary sharply**, GSDP share can approximate contribution to central taxes.

4. **Alignment with GST Structure:** GST attribution across States is relatively clear. **GSDP complements GST** by capturing **production and income generation**.

5. **Correlation with Direct Taxes:** In **2023–24**, the correlation between States' GSDP and **direct tax collections was 0.75**, showing a strong relationship.

6. **Correlation with GST Collections:** The correlation between GSDP and **GST collections was 0.91**, indicating that GSDP closely tracks **taxable economic activity**.

7. **Balance with Devolution Shares:** GSDP shares showed a correlation of **0.58 with devolution shares**, reflecting a balance between **redistribution and contribution**.

Way Forward

1. **Higher Weight, Not Exclusive Use:** GSDP should be given a higher weight in devolution formulas, without replacing existing redistribution criteria.

2. **Balancing Equity and Efficiency:** GSDP can reflect economic contribution, while other criteria can continue to support redistribution to poorer States.

3. **Correcting Registered Office Bias:** Adjustments are needed where tax collections exceed GSDP due to concentration of registered offices of multi-State firms.

4. **Accounting for Production–Tax Location Mismatch:** GSDP can address cases where production occurs in one State but tax payments are recorded in another.

5. **Moderating Fiscal Impact:** A calibrated use of GSDP can ensure that gains and losses across States remain moderate.

6. **Strengthening Credibility of Transfers:** Closer alignment between economic activity and transfers can improve trust in the fiscal transfer system.

Conclusion

Using **GSDP as a stronger criterion** can improve fairness in central–State transfers by linking distribution to **real economic activity**. It balances **efficiency with equity** better than existing approaches. However, it should **complement, not replace**, redistribution criteria to address regional disparities and maintain **cooperative fiscal federalism**.

For detailed information on **Fiscal Federalism in India- Significance and Challenges** [read this article here](#)

Question for practice:

Examine the rationale for using **Gross State Domestic Product (GSDP)** as a criterion for central–State transfers in India, and assess how it balances **equity and efficiency** in the existing fiscal federal framework.

Source: [The Hindu](#)

Top court's green governance, cause for uncertainty

UPSC Syllabus Topic: GS Paper3-Conservation, environmental pollution and degradation

Introduction

Environmental governance in India has increasingly shifted from executive regulators to the **Supreme Court of India**. Over the last decade, the Court has moved beyond reviewing legality to issuing forward-looking directions that resemble regulation. This shift arose due to regulatory failure, but the Court has often continued to govern instead of restoring regulatory discipline. This has created instability for governments, regulated actors, and citizens.

Legal and Constitutional Basis of Environmental Governance in India

1. Constitutional Duties: Environmental protection has clear constitutional support. Article 48A places a duty on the State to protect and improve the environment. Article 51A(g) places a duty on citizens to safeguard nature. Together, they form the moral and legal base of environmental governance.

2. Right to Life: The right to life under Article 21 has been interpreted to include the right to a clean and healthy environment. In *M.C. Mehta (1986)*, environmental quality was linked to life and dignity. In *M.K. Ranjitsinh*, this was expanded to include a right against the adverse effects of climate change.

3. Statutory Framework: Environmental governance is implemented through laws such as the Environment (Protection) Act, 1986, the Forest (Conservation) Act, 1980, and pollution control laws. These statutes assign duties to executive authorities for regulation, enforcement, and monitoring.

4. Regulatory Failure: Judicial intervention occurs when regulators fail to perform statutory duties. Fragmented enforcement, delayed notifications, weak monitoring, and selective exemptions create governance gaps. These gaps provide the constitutional space for judicial involvement.

Indian Judiciary's Expanding Role in Environmental Governance

1. Role Expansion: The Court has shifted from checking legality to shaping future conduct. It now issues directions that apply across sectors and regions, moving closer to regulatory governance.

2. Continuing Mandamus: Environmental cases often run through continuing mandamus. The Court issues serial interim orders, seeks affidavits, appoints committees, and modifies directions over time.

3. Regulatory Substitution: Instead of correcting regulatory processes and stepping back, the Court often substitutes for regulators. This keeps the Court involved in governance beyond immediate correction.

4. Cross-Domain Reach: Single cases frequently expand across forests, pollution, mining, transport, and urban development. This broad reach increases institutional complexity and uncertainty.

Expansion and Contradictions of Environmental Jurisprudence

1. ESZ Orders: In June 2022, the Court mandated a minimum one-kilometre eco-sensitive zone around protected areas. In April 2023, this was diluted where prior notifications existed, after States argued that the rule was difficult to implement.

2. Vehicle Rules: In December 2015, diesel vehicles above 2000 cc were banned in the Delhi-NCR. In August 2016, the ban was replaced with a compensation charge. In 2025, broad protection against coercive action was narrowed to vehicles below Bharat Stage-IV norms.

3. Firecracker Bans: The Court imposed near-total firecracker bans in the NCR due to air pollution. These were later relaxed for festivals and limited categories such as green crackers, citing enforcement limits and public order concerns.

4. Doctrinal Shifts: In May 2025, ex post facto environmental clearances were held to violate core principles. In November, this position was recalled due to concerns about disrupting ongoing commercial activity.

Expertise and Public Challenge

1. Expert Committees: The Court relies on expert committees to address technical limits. Expert input supports decision-making but does not guarantee stability.

2. **Contested Expertise:** In the Aravalli mining matter, a unified definition was adopted based on committee findings. It was later placed in abeyance and a new committee was formed due to unintended legal effects.

3. **Uniform Rules:** Uniform environmental rules initially appear decisive. Resistance arises when ecological variation and feasibility differ across landscapes, as seen in the ESZ issue.

4. **Approval Role:** Governments and project proponents approach the Court for permissions before statutory scrutiny is complete. This shifts approval authority away from regulators.

5. **Public Impact:** Early judicial approval discourages later contestation. When rules are modified, it reshapes who can be heard and what evidence matters.

Need for Judicial Restraint and Regulatory Discipline

1. **Uncertainty Harm:** The core problem is not intervention itself. It is uncertainty. Environmental rules become negotiable rather than enforceable.

2. **Regulatory Discipline:** The Court should discipline regulators back into action. It should insist on time-bound decisions, reasons, and public data.

3. **Clear Thresholds:** Judicial management should be limited to defined situations. Sweeping rules that invite exceptions should be avoided.

4. **Stable Governance:** Stability helps governments govern, regulated actors comply, and citizens challenge harm in proper forums.

Conclusion

Environmental protection requires strong regulation, not permanent judicial governance. Courts should correct regulatory failure without replacing executive decision-making. Clear limits on intervention, predictable standards, and time-bound regulatory action can reduce uncertainty. A restrained judicial role can protect the environment while preserving institutional balance, public participation, and legal certainty.

Question for practice

Discuss how the Supreme Court's expanding role in environmental governance has contributed to regulatory uncertainty in India, and why judicial restraint is suggested as a way forward.

Source: [The Hindu](#)

Bal Vivah Mukht Bharat (A Pledge Towards Child Marriage-Free India)

News- Despite being legally prohibited, child marriage remains a pervasive social challenge in India, impacting millions of young girls and boys across the country. In India, despite progress, 23% of women aged 20–24 were married before they turned 18 (National Family Health Survey-5, 2019–21).

What Is Child Marriage?

Child marriage, defined under **Prohibition of Child Marriage Act** is any union where the female/girl party is under 18 years and a male below 21 years of age, perpetuates cycles of poverty, gender inequality, and health risks, particularly in rural and tribal areas. Furthermore, child marriage directly amounts to child rape under Indian law.

As per the **Bharatiya Nyaya Sanhita, 2023**, any sexual act by a man with his wife who is below 18 years of age amounts to rape. The Supreme Court of India has further clarified that when the husband of a child bride commits penetrative sexual assault on her, it amounts to aggravated penetrative sexual assault, an offence punishable under the **Protection of Children from Sexual Offences (POCSO) Act, 2012**.

What has been the history of India's fight against Child Marriage?

Pre-Independence Efforts- Efforts to curb child marriage in India began as early as the 19th century with social reformers like Raja Rammohan Roy, Ishwar Chandra Vidyasagar, and Mahatma Jyotirao Phule leading campaigns against the practice, resulting in the **Age of Consent Act, 1891** and later the **Child Marriage Restraint Act (Sarda Act) of 1929**, which set the minimum marriage age at 14 for girls and 18 for boys.

Post-Independence Measures- Post-independence, the government raised these limits through the 1948 amendment (15 for girls), 1978 amendment (18 years for girls and 21 years for boys) and finally the Prohibition of Child Marriage Act, 2006 (18 for women, 21 for men).

Prohibition of Child Marriage Act, 2006 (PCMA)- The Prohibition of Child Marriage Act, 2006 replaced the Child Marriage Restraint Act, 1929 (Sarda Act), with the aim to prohibit rather than merely restrain child marriages while providing stronger protection and relief for victims. The Act clearly states that a "child" is a male under 21 years or female under 18 years. Child marriage involves either party being a child.

Bal Vivah Mukht Bharat (BVMB)- Launched on November 27, 2024, the Bal Vivah Mukht Bharat (BVMB), also known as Child Marriage Free India, represents a bold national commitment by the Ministry of Women and Child Development (MWCD) to eradicate child marriages across the country. This mission is deeply aligned with Sustainable Development Goal (SDG) 5.3, which aims to eliminate all harmful practices, including child, early, and forced marriages, by 2030.

The 100-Day Campaign: A Momentum-Building Drive Against Child Marriage- On December 4, 2025, a high-intensity 100-day special drive has been rolled out across all States and Union Territories, dedicating each month to a specific outreach.

What are the harmful impacts of Child Marriage?

1. **Violation of Child Rights:** Child marriage violates the **right to education, right to health and right to be safe from physical and mental violence, sexual abuse, rape, and sexual exploitation**. It also robs the children of their **right to freedom to choose their partner and life path**.
2. **Social marginalisation and isolation:** Early marriages deprive girls of their childhood and force them into social isolation. Similarly, boys who marry early are pressured to take on family responsibilities prematurely.

3. **Increases Illiteracy:** Child brides are often taken out of school and not allowed to get further education. This increases the illiteracy in India.
4. **Breeds Intergenerational Cycle of Poverty:** Child marriage **negatively affects the economy** and can lead to an intergenerational cycle of poverty. Girls and boys married as children more likely lack the **skills, knowledge, and job prospects** needed to lift their families out of poverty. Early marriage leads girls to have children earlier and more children over their lifetime, **increasing economic burden on the household**.
5. Health Issues:
 - a. **Stunted Children:** Children born to adolescent mothers have a greater **possibility of seeing stunted growth** (According to NFHS-5, prevalence of child stunting is 35.5%).
 - b. **Premature Pregnancy:** Child marriage leads to **pregnancy at a younger age**, with women having more than one child before their mind and bodies are ready.
 - c. **Maternal Mortality:** Girls under 15 are **five times more likely to die** during childbirth or pregnancy. The leading cause of death for girls ages 15 to 19 around the world is pregnancy-related deaths
 - d. **Infant Mortality:** Babies born to mothers younger than 20 have almost **75% higher death rates** than babies born to mothers older than 20 years. The children who do make it are more likely to be born pre-mature and with a low birth weight.
 - e. **Mental health:** Abuse and violence can lead to **PTSD (Post-Traumatic Stress Disorder)** and depression.

What are the reasons for prevalence of Child Marriage?

Child marriage has strong roots in culture, economics, and religion.

1. **Poverty:** Poor Families 'sell' their children through marriage to pay off debts or to get out of the cycle of poverty.
2. **"Protecting" the Girl's Sexuality:** In some cultures, marrying a girl young is thought to "protect" the girl's sexuality and the **family's honour**.
3. **Customs and Traditions:** The prevalence of customary practices like **dowry** also leads to an increase in child marriage. Generally, the amount of dowry rises with age of the girl (beyond a certain limit). So families prefer to marry their girls young.
4. **Security:** Parents often marry their daughters off young to "secure" a **good future for them**. Abuse, rape, and other crimes against girls, also makes parents turn to child marriage as a way to protect their daughters.
5. **Discrimination based on gender:** Child marriage is a manifestation of discrimination against girls and women. According to a **UNICEF report on 'Child Marriage and the Law'**, child marriage a major manifestation of gender based discrimination.
6. **Laxity in Implementation of Laws:** Laxity in implementation of laws like the Prevention of Child Marriage Act, 2006, non-registration of marriages, also increase the child marriage in India.

Conclusion

As millions participate in pledges, crucial efforts not only challenge deep-rooted social norms but also align with Sustainable Development Goal 5.3 and the vision of a Viksit Bharat. Sustained collective action, from

government, communities, NGOs, and citizens, holds the promise of breaking cycles of inequality, ensuring every child's right to education, health, and autonomy. With unwavering commitment, India can achieve a truly child marriage-free future, empowering generations of girls and boys to thrive.

Building legal and judicial capacity

Source: The post “Building legal and judicial capacity” has been created, based on “Building legal and judicial capacity” published in “BusinessLine” on 10th January 2026.

UPSC Syllabus: GS Paper-2- Governance

Context: India has emerged as the world's fourth-largest economy with a GDP of about \$4.18 trillion and is projected to reach \$7.3 trillion by 2030. As India's role in the global economy expands, strengthening legal and judicial capacity has become a critical component of economic governance.

Changing Nature of Economic Governance

The economic reforms of 1991 marked a shift from a state-controlled economy to a market-driven model with greater private sector participation. This transition led to a surge in foreign direct investment, infrastructure development, corporate restructuring, banking disputes, and the growth of the digital economy. However, the judiciary remains largely structured around a 20th-century dispute resolution model, while facing complex 21st-century commercial realities.

Judicial Pendency and Economic Impact

1. There are approximately 4.78 crore cases pending across all levels of the Indian judiciary.
2. Government entities are involved in nearly 50 per cent of litigation, much of which relates to taxation, regulation, infrastructure, and contractual disputes.
3. More than one crore cases are civil in nature, and over 57 per cent of these have been pending for more than one year.
4. Such delays increase uncertainty in the corporate and commercial environment.

Rise in Commercial and Regulatory Litigation

1. Institutional reforms such as the Insolvency and Bankruptcy Code (IBC) have led to exponential growth in specialised commercial litigation.
2. As of March 31, 2025, the National Company Law Tribunal (NCLT) alone had over 14,961 pending cases.
3. This reflects the growing burden of complex economic adjudication on courts.

Global Rankings and Enforcement of Contracts

1. India significantly improved its Ease of Doing Business ranking to 63 in 2020 due to policy reforms. However, **India ranks poorly at 163rd in enforcing contracts.**
2. On average, **it takes nearly 1,500 days to resolve a standard commercial dispute at the trial court level.** This undermines investor confidence and hampers economic growth.

3. **Need for Judicial Capacity Building:** Judges must be intellectually and institutionally equipped to handle complex economic and regulatory disputes. Long-term, structured judicial education is essential to improve the quality, speed, and consistency of adjudication.

Key Areas Requiring Judicial Training

1. **Corporate Governance and Company Law:** Judges need training in board structures, fiduciary duties, shareholder agreements, mergers and acquisitions, and related-party transactions. Emerging areas such as ESG norms, shareholder activism, and digital corporate governance must be included in judicial education. Judicial academies should collaborate with academics, industry experts, regulators, and law firms.
2. **Commercial Contracts and Complex Transactions:** Judges must understand infrastructure contracts, public-private partnership models, project finance, and construction contracts. Knowledge of risk allocation, indemnities, warranties, and financial covenants must be strengthened. Exposure to international and cross-border commercial disputes is increasingly necessary.
3. **Financial, Banking, Insurance, and Insolvency Law:** Judges should be trained in insolvency frameworks, restructuring mechanisms, and valuation methodologies. Law-and-economics-based analysis is critical for effective adjudication in financial disputes. Global best practices, such as specialised judicial education programmes in US bankruptcy courts, provide useful models.
4. **Competition Law and Market Economics:** Judges need foundational understanding of market definition, dominance, cartel behaviour, and economic assessment tools. Training in industrial economics and competition analysis is essential for adjudicating antitrust matters.
5. **Technology, Digital Economy, and Data Governance:** Rapid technological change requires judges to understand IT contracts, intellectual property, fintech, crypto-assets, and data protection. Issues of cyber security, artificial intelligence, and algorithmic accountability are becoming central to commercial disputes. International examples such as Singapore and Estonia highlight the importance of structured judicial training in AI and technology law.

Way Forward

1. Judicial capacity building must be treated as an institutional reform linked to India's economic ambitions.
2. Specialisation, continuous training, and interdisciplinary learning should be integrated into judicial education.
3. Reimagining court processes for commercial and economic disputes will help reduce pendency and improve contract enforcement.
4. Addressing judicial delays will strengthen investor confidence and support sustainable economic growth.

Conclusion: As India transitions into a major global economic power, the effectiveness of its judiciary in handling complex economic matters will be decisive. Building legal and judicial capacity is not merely a judicial reform but an economic necessity.

Question: "India's growing economic complexity requires a corresponding strengthening of legal and judicial capacity." Discuss the challenges faced by the Indian judiciary in adjudicating commercial and economic disputes and suggest measures to address them.

Pesticides Management Bill, 2025: Revised draft but old gaps remain

Source: The post “Pesticides Management Bill, 2025: Revised draft but old gaps remain” has been created, based on “Pesticides Management Bill, 2025: Revised draft but old gaps remain” published in “Down to Earth” on 10th January 2026.

UPSC Syllabus: GS Paper-3- Indian Economy

Context: The Union Ministry of Agriculture and Farmers Welfare released the draft of the **Pesticides Management Bill, 2025** on 7 January 2026. The Bill aims to regulate the manufacture, import, sale, and use of pesticides in India and seeks to replace the **Insecticides Act of 1968**, which has been in force for over five decades.

Objective of the Bill

1. The draft legislation is intended to ensure effective regulation of the pesticide sector, minimise risks to humans, animals, non-target organisms, and the environment, and promote the use of **biological pesticides and traditional knowledge-based solutions**.
2. It also aims to improve transparency, traceability, and service delivery to farmers, thereby promoting ease of living.

Key Features of the Draft Bill

1. Quality and Transparency:

- a. Mandatory printing of QR codes or labels on seed packets to disclose seed health, expected performance, and producer certification.
- b. Centralised Seed Traceability Portal to track production and distribution.
- c. Value for Cultivation and Use (VCU) trials to assess varietal traits and performance, with results disclosed to farmers.

2. Institutional Architecture

- a. Central Seed Committee (CSC) with 27 members and State Seed Committees (SSC) with 15 members per state.
- b. Seed price regulation during emergencies is the responsibility of the Union government, with limited state involvement.

3. Definition of Farmer: The Bill defines a farmer as a person who cultivates or supervises land or conserves wild species.

4. Punishment and Penalties

- a. Graded penalties for offences such as the sale of non-registered seeds, ranging from written notices to fines up to ₹30 lakh and cancellation of registration.
- b. Lack of compensation provisions for farmers; experts propose a Seed Compensation Fund to channel penalties for farmer relief.

5. The Bill regulates the entire lifecycle of pesticides, from **manufacture to use**. It provides for the **constitution of a Central Pesticides Board**, which will recommend pesticides for inclusion in the Act, define good manufacturing practices, set guidelines for pesticide disposal, and frame protocols for handling poisoning incidents.

- a. State governments can issue notifications to prohibit the **sale, distribution, or use of pesticides or specific batches** for a period not exceeding one year, which are then reviewed by a **Registration Committee** formed by the Union government.

- b. The Registration Committee includes members from **ICAR, Drugs Controller General of India, Ministry of Environment, Chemicals and Fertilizers**, and a Plant Protection Advisor.

Major Gaps and Concerns

1. **Limited Powers for State Governments:** State governments do not have regulatory or punitive powers, which limits their ability to effectively act against unsafe or banned pesticides.
2. **Weak Language on Risk Minimisation:** The Bill uses the phrase “strive to minimise risk” instead of mandating actual risk minimisation, weakening enforceability.
3. **Absence of Criminal Liability:** There is no provision to hold manufacturers, distributors, or marketers criminally liable in cases of misuse, poisoning of water bodies, or suicides linked to pesticide use.
4. **Missing Provisions for Price Regulation and Redressal Mechanisms:** The draft does not address pricing of pesticides or mechanisms for compensating affected parties.
5. **Delayed Legislative Reform:** The Bill has faced repeated delays since 2008, with previous drafts introduced in 2018 and 2020, indicating slow progress in updating India’s pesticide regulatory framework.
6. **Centralised Decision-making:** The Central Pesticides Board functions in an advisory capacity, and state governments are excluded from key decision-making processes, affecting accountability.

Way Forward

1. State governments should be granted **greater regulatory and enforcement powers**, including the ability to impose penalties.
2. Clear **criminal liability provisions** should be included to ensure accountability of manufacturers, distributors, and marketers.
3. Stronger legal language should mandate **actual risk minimisation** rather than aspirational targets.
4. Price regulation and grievance redressal mechanisms for farmers should be incorporated.
5. Central and state coordination should be strengthened to ensure timely and effective implementation.

Conclusion: The Pesticides Management Bill, 2025 is a step towards modernising India’s pesticide regulatory system. However, its current draft leaves critical gaps in **state powers, enforcement, accountability, and criminal liability**. Addressing these gaps is essential to protect **farmers, public health, and the environment**.

Question: Examine the key features of the Pesticides Management Bill, 2025. Discuss the gaps in the draft legislation and suggest measures to make it more effective in regulating pesticides in India.

The Phaltan case is also about a victim’s dignity

UPSC Syllabus Topic: GS Paper 2-mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

Introduction

The suicide of a young woman doctor in Phaltan exposes deep failures in India's gender justice system. Despite new criminal laws claiming to be women-centric, the case shows how victims continue to face administrative neglect, institutional insensitivity, and public character assassination. The core issue is not only sexual crime but also the destruction of a victim's dignity after the offence.

Major concerns in the criminal justice response to crimes against women

1. Administrative failure to protect victims: The victim's repeated pleas for help were allegedly ignored by authorities. This institutional inaction became the first injustice, as protection mechanisms failed at the most critical stage.

2. Secondary victimisation: After the victim's death, her personal life became subject to public scrutiny. This shifted attention from the alleged crime to her conduct, causing fresh harm to her dignity.

3. Institutional victim-blaming: Public statements by a women's commission authority revealed private communications. Such conduct reinforced the culture of questioning victims instead of supporting them.

4. Extra-judicial creation of a social verdict: Public commentary created moral judgments outside legal processes. This "social verdict" effectively tried the victim's character without due process.

5. Violation of dignity: Although criminal law prohibits character attacks during trials, similar harm occurred outside courtrooms. This defeated the purpose of victim-protection laws.

6. Gap between progressive law and patriarchal mindset: Legal reforms have advanced, but social attitudes remain rooted in patriarchy. This disconnect weakens the real impact of gender-justice legislation.

7. Lack of institutional empathy: Institutions failed to respond with sensitivity to trauma. The absence of empathy worsened the victim's psychological distress.

8. Power imbalance in professional environments: Women professionals, especially doctors, face harassment within hierarchical systems. Unequal power relations silence complaints and increase vulnerability.

9. Denial of procedural fairness to families: The victim's family was denied access to investigation reports. This deepened their trauma and eroded trust in the justice process.

Initiatives taken to address gender-based crime

1. End of character assassination in sexual offence cases: The Criminal Law (Amendment) Act, 2013 marked a shift towards protecting the dignity of sexual offence victims. It was enacted to dismantle the long-standing practice of attacking a victim's character during investigation and trial.

2. Ban on character evidence to imply consent: Section 53A of the Indian Evidence Act, now Section 50 of the Bharatiya Sakshya Adhiniyam, clearly states that a woman's personal life is irrelevant to consent. Friendships, messages, habits, or lifestyle cannot be used to justify or excuse sexual violence.

3. Restriction on humiliating cross-examination: Section 146 of the Indian Evidence Act, now Section 48 of the Bharatiya Sakshya Adhiniyam, prohibits questions on a victim's general immoral character or past sexual experience. Cross-examination must remain limited to facts directly related to the alleged offence.

4. Judicial rejection of victim-blaming: In *State of Punjab vs Gurmit Singh & Ors. (1996)*, the Court held that a woman's testimony cannot be doubted based on perceived morality. It warned against dismissing evidence on notions of "loose morals" and affirmed that every woman, regardless of character, has the right to refuse sexual intercourse. The Court also condemned excessive scrutiny and character attacks as adding insult to injury.

5. Protection of victim identity: Section 228A of the Indian Penal Code, now Section 72 of the Bharatiya Nyaya Sanhita, prohibits disclosure of a sexual assault victim's identity. This protection extends even after death, unless permitted by a competent authority, to prevent public shaming.

6. Key Existing Acts: Important legislation includes the Protection of Women from Domestic Violence Act, 2005; the Sexual Harassment of Women at Workplace Act, 2013; the Criminal Law (Amendment) Act, 2018; and the POCSO Act, 2012

7. Fast Track Special Courts (FTSCs): Financial support is provided for FTSCs to expedite cases related to rape and the POCSO Act, with over 750 courts operating nationwide.

8. Witness Protection Schemes: Provisions exist within the BNSS to protect witnesses from intimidation.

9. Institutional Support Mechanisms

- **One Stop Centres (OSCs):** Under the 'Sambal' scheme, these centers offer comprehensive support for women affected by violence, including medical, legal, and psycho-social aid, police facilitation, and temporary shelter.
- **Women Helplines (181):** A 24/7 toll-free helpline provides support to women in distress and is integrated with the ERSS-112 system.
- **Women Help Desks (WHDs):** Located in police stations, these desks make the police more accessible to women and connect them with experts and NGOs.
- **SHe-Box Portal:** An online platform for reporting and tracking workplace sexual harassment complaints.

Way forward

1. Training and sensitisation: Police, prosecutors, and judges require regular sensitisation on trauma and dignity. Empathy must guide responses to sexual crimes.

2. Ending tolerance of victim-blaming: Society must reject narratives that question victims. Investigation culture must become truly victim-friendly.

3. Strengthening institutional capacity: Forensic infrastructure, women's desks, and legal aid need expansion. This will support safeguards under new criminal laws.

4. Accountability of public institutions: Authorities must avoid public commentary that harms dignity or prejudices cases. Restraint is essential.

Conclusion

The Phaltan case shows that gender justice fails when dignity is ignored. Laws already prohibit character assassination, but institutions and society violate their spirit. Justice requires empathy, restraint, and accountability. Until secondary victimisation ends, women-centric laws will remain ineffective, and victims will continue to suffer beyond the original crime.

Question for practice:

Examine how the Phaltan case reveals the gap between women-centric criminal laws and their actual implementation, particularly in protecting a victim's dignity after a sexual offence.

Source: [The Hindu](#)

Why Trump's Russia sanctions Bill could effectively end India's exports to US

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

Introduction

Why Trump's Russia sanctions Bill could effectively end India's exports to US is rooted in the scale of penalties proposed and the legal strategy behind them. The Bill proposes a **500 per cent tariff on all goods and services** imported from countries that continue trading in Russian-origin uranium and petroleum products. India, which imports Russian oil and already faces steep US tariffs, stands directly exposed. The timing of the Bill, alongside legal scrutiny of US tariff powers under IEEPA, further increases the risk for India's trade, investments, and negotiating position.

About International Emergency Economic Powers Act (IEEPA)

1. Nature and scope of IEEPA: IEEPA is a US federal law enacted in 1977 that allows the President to regulate international trade after declaring a national emergency. It has been used to impose sanctions, restrict trade, and freeze foreign assets.

2. Evolution of US sanction powers: IEEPA replaced the Trading with the Enemy Act (TWEA)(1917), which was meant for wartime use but continued during peacetime. Over time, IEEPA became the backbone of US economic sanctions against foreign states and entities.

3. Judicial challenge to tariff use: The Trump administration's use of IEEPA to impose reciprocal tariffs is under legal challenge. Three US courts have already ruled against the administration, questioning whether such tariff powers fall within IEEPA.

4. New Bill changes the legal position: The Russia sanctions Bill provides direct legislative authority for tariffs. This bypasses judicial risks linked to IEEPA and strengthens the legal foundation for imposing extreme trade penalties.

India's Concerns related to IEEPA and the Russia Sanctions Bill

- 1. Scale of tariff escalation:** The Bill mandates a **minimum 500 per cent duty** on all imports from countries trading Russian oil and uranium. This level of tariff goes far beyond existing US trade actions.
- 2. Risk of export collapse:** India's exports to the US are valued at **over \$85 billion annually**. Trade experts state that a 500 per cent tariff would make Indian goods commercially unviable and effectively end exports to the US.
- 3. Existing tariff pressure already high:** India already faces **50 per cent US tariffs**, which are hurting labour-intensive sectors. **Textiles, footwear, and marine products** are among the most affected.
- 4. Absence of trade agreement protection:** India has not signed a trade deal with the US. This leaves New Delhi without exemptions or safeguards against unilateral US tariff actions.
- 5. Uncertainty over product coverage:** The scope of the Bill is unclear and may include products currently excluded from reciprocal tariffs. Items such as **electronics, pharmaceuticals, coffee, and tea** face fresh uncertainty.
- 6. Threat to fast-growing export segments:** India has continued exporting mobile phones due to earlier exclusions. A broader interpretation of the Bill could disrupt this fastest-growing export category.
- 7. Weakening of negotiating leverage:** As access to the US market shrinks, India comes under pressure to diversify exports quickly. This weakens India's bargaining power in trade negotiations with other partners.
- 8. Impact on ongoing trade talks:** India is negotiating trade deals with the European Union, ASEAN, GCC, EAEU, Canada, SACU, Australia, Chile, Peru, and Bahrain. A weaker position can lead to steeper demands from partners.
- 8. Pressure on sensitive sectors:** India has maintained firm red lines on agriculture and dairy in trade talks. A weaker negotiating position increases pressure to dilute these protections.
- 9. Investment uncertainty beyond trade:** US tariffs have affected not only goods exports but also investment flows. Investors are delaying decisions due to uncertainty around the India-US trade relationship.
- 10. Stress on capital flows:** A 2025 Bank of America research note states that US tariffs have stalled **FDI, FPI, and debt inflows**. Capital flows remain a key vulnerability for India.
- 11. Rupee and macroeconomic pressure:** The rupee has weakened nearly **7 per cent in one year**, leading to over **9 per cent real effective exchange rate depreciation**. This weakness is linked to capital flow pressure and trade uncertainty.

Comparative Disadvantage vis-à-vis China

- 1. Lower export diversification:** India's exports are not as diversified as China's. This limits India's ability to redirect trade when faced with US tariffs.
- 2. China's resilience under tariffs:** Despite US tariffs, China recorded a **\$1 trillion trade surplus in 2025**. Its strength in sunrise sectors and control over critical minerals provides resilience.

3. Technology gap in exports: Indian exporters state that Indian goods are being replaced by foreign products due to lower technology intensity. This weakens India's ability to withstand tariff shocks.

4. Strategic leverage difference: China, the largest buyer of Russian oil, has multiple economic and strategic tools to counter US pressure. India lacks similar leverage.

Way Forward

1. Pursue a trade agreement with the US immediately: India should urgently negotiate a trade deal or interim trade arrangement with the US to secure tariff relief and exemptions. The Russia sanctions Bill gives clear legal backing to extreme tariffs, leaving little scope for judicial reversal.

2. Reduce dependence on the US market: India must deliberately diversify its export markets to limit vulnerability to unilateral US trade actions. Heavy reliance on the US has magnified the impact of tariff shocks.

3. Restore investor confidence through trade clarity: Uncertainty over tariffs has stalled FDI, FPI, and debt inflows and weakened the rupee. A clear trade framework with the US is necessary to stabilise capital flows and macroeconomic conditions.

4. Actively promote multipolar economic arrangements: India should push for a multipolar global economic order to counter unilateral coercive trade practices. This is necessary in a context of weak multilateral institutions and concentrated economic power.

5. Address domestic structural weaknesses: Low manufacturing share, high unemployment, weak private investment, poor research output, and under-utilised PSUs have increased India's exposure to external shocks. Structural reform is essential to reduce trade dependence.

6. Build durable domestic and international coalitions: India should move beyond transactional diplomacy and build bipartisan consensus at home and collective platforms with the Global South. Coordinated positions strengthen resistance to external economic pressure.

Conclusion

The Russia sanctions Bill turns US trade policy into a powerful economic weapon with serious spillovers for India. A 500 per cent tariff threatens exports, investments, and currency stability. With limited diversification and no trade agreement with the US, India faces high vulnerability. The episode exposes deep structural weaknesses in export competitiveness and negotiating capacity.

Question for practice:

Discuss how Trump's Russia sanctions Bill could affect India's exports and trade position with the United States.

Source: [Indian Express](#)

Lowering of the Age of Consent

News- On January 10, the Supreme Court (SC), in *State of Uttar Pradesh vs Anurudh & Anr.*, formally acknowledged the growing misuse of the POCSO Act, 2012 in cases involving **consensual romantic relationships** between adolescents, where one party is a minor. The Court urged the Union government to

consider corrective measures to prevent the harsh application of POCSO in genuine adolescent relationships. This judgment has revived the national debate on the age of consent in India.

What is the Legal Framework Governing Age of Consent in India?

Current Position

- The age of consent in India is 18 years, as set by the gender-neutral POCSO Act, 2012.
- Anyone below 18 is legally classified as a “child”, rendering their consent to sexual activity legally irrelevant.
- Sexual activity involving a minor is treated as statutory rape, irrespective of consent.
- Section 19 of POCSO mandates compulsory reporting of suspected or known offences.

Integration with Criminal Law

- The Criminal Law (Amendment) Act, 2013 **amended Section 375 IPC**, raising the age of consent from **16 to 18**, aligning it with POCSO.
- **The Bharatiya Nyaya Sanhita (BNS), 2023, retained this position:** Section 63 defines rape to include sexual acts with a woman under 18, with or without consent.

What are the arguments for Revisiting the Age of Consent?

1. **Rise in Consensual Relationship-** There has been a **significant rise in POCSO cases involving adolescents aged 16–18**, where girls often testify that the relationship was consensual.
2. **Lowering age of sexual experience-** According to the **NHFS-4 data**, **11% of girls had their first sexual experience before age 15**. **39% of girls had their first sexual experience before age 18**.
3. **Rise in false POCSO Cases-** According to the Enfold Study (2016–2020) of 7,064 POCSO judgments, 24.3% involved romantic relationships. In 82% of such cases, victims refused to testify against the accused.
4. **Lack of acknowledgement of sexual autonomy-** The law **fails to acknowledge adolescent sexual autonomy** among **16–18-year-olds capable** of informed consent.
5. **Misuse of the intent of the law-** POCSO was intended to combat sexual abuse, not criminalise consensual adolescent romance. Blanket criminalisation leads to misuse by disapproving parents, clogging courts and harming adolescents.
6. **Does not align with Developed countries Standard-** Many Western democracies (e.g., U.K., Canada, EU countries) set the age of consent at 16, with safeguards such as ‘close-in-age’ or ‘Romeo–Juliet’ exemptions.

What are the arguments Against Lowering the Age of Consent?

1. **Increase in exploitation-** A lower age risks weakening deterrence, facilitating trafficking, grooming, and exploitation under the guise of consent.

2. **Present laws provide clear criterion-** The current “**bright-line rule**” under POCSO and BNS provides a clear, objective standard, avoiding subjective assessments of maturity or willingness.
3. **Lack of emotional independence-** Children often lack the **emotional independence to resist coercion or report abuse**, making consent illusory. Child abuse often involves persons in positions of trust: A 2007 Ministry of Women and Child Development study found over 50% of abusers were known to the child.
4. **Encouragement to premature sexual activity-** Lowering the age could encourage premature sexual activity **without emotional maturity**.

What has been the stand of the legislature and Judiciary on the issue?

Legislative consistency of opposing the lowering of age

Parliament has repeatedly rejected lowering the age of consent. **Justice Verma Committee** recommended 16 years, but Parliament raised it to 18 in 2013. **240th Parliamentary Standing Committee Report (2011)** **rejected** recognising minor consent in POCSO.

Law Commission’s 283rd Report (2023) warned that lowering the age would make POCSO a “paper law” and undermine efforts against child marriage, prostitution, and trafficking.

Stand of the Judiciary

High Court Perspectives	<p>Delhi HC in <i>State vs Hitesh, 2025</i>, called for recognition of consensual adolescent relationships free from coercion.</p> <p>Bombay HC in <i>Ashik Ramjani Ansari, 2023</i>, emphasised sexual autonomy as both the right to engage in consensual activity and the right to protection.</p> <p>Delhi HC in the <i>Mohd. Rafayat Ali</i>, took a strict statutory interpretative stance and reaffirmed that consent is legally irrelevant under POCSO if the victim is under 18.</p>
Supreme Court	<p>Overtaken a Calcutta HC acquittal involving a 14-year-old. Reaffirmed that POCSO does not recognise consensual sex with minors.</p> <p>August 19, 2025, Justice B.V. Nagarathna observed that romantic relationships near the age of majority deserve differential consideration, noting the trauma caused when boys are jailed following parental POCSO complaints over elopement.</p>

What should be the Way forward?

While **only Parliament can amend the age of consent**, the SC must clarify inconsistencies between statutory law and High Court rulings to ensure uniform application.

Avoid blanket ban- Avoid a blanket reduction to 16, which risks diluting child protection.

Introduce 'close-in-age' exemptions- Introduce 'close-in-age' exemptions for 16–18-year-olds, within a 3–4 year age gap, with: mandatory judicial scrutiny to detect coercion or abuse and strong safeguards against exploitation.

Strengthening consent education- Strengthen education on consent, healthy relationships, and emotional resilience.

Accompany Legal reform by positive measures- Provide Comprehensive sex education, Accessible sexual and reproductive health services, Gender-sensitive law enforcement and Social support systems for adolescents, especially girls.

Conclusion

The core challenge is not merely deciding whether the age of consent should be 18 or 16, but how the law can differentiate consensual adolescent relationships from exploitative ones. A nuanced, calibrated reform—rather than an all-or-nothing approach—can protect children while preventing the unjust criminalisation of adolescents navigating consensual intimacy.

Source: [The Hindu](#)

Design Linked Incentive Scheme

Context- Semiconductor chips are critical for healthcare, transport, communications, defence, space, AI, and digital infrastructure. Global demand is rising rapidly due to digitalisation and automation.

However, Semiconductor manufacturing is concentrated in a few geographies, making global supply chains fragile and disruption-prone. India aims to emerge as a strategic, reliable semiconductor hub through - **Semicon India Programme** and **India Semiconductor Mission (ISM)**.

What is the Strategic Importance of Fabless Chip Design?

Fabless semiconductor design represents the highest-value segment of the semiconductor value chain. Fabless semiconductor design represents the highest-value segment of the semiconductor value chain.

A robust fabless model offers the following advantages:

- High value addition
- Lower capital expenditure compared to fabs
- Ownership of IP
- Reduced imports
- Attraction of manufacturing
- Long-term technological leadership

What is the Design Linked Incentive (DLI) Scheme?

It was launched in December 2021 under the **Semicon India Programme**. It is implemented by **MeitY**, with **C-DAC** as the nodal agency.

Its objective is to **build a self-reliant, indigenous semiconductor design ecosystem** and **support startups and MSMEs from idea to silicon to productisation**.

Eligibility under DLI Scheme- Startups (as per DPIIT, 2019), MSMEs (as per MSME Ministry notification, 2020) and Domestic companies owned by resident Indian citizens (FDI Policy, 2017).

Scope of support covers the full design lifecycle of Integrated Circuits (ICs), Chipsets, Systems-on-Chip (SoCs) and Systems and IP cores.

DLI aims to - Increase indigenous semiconductor content, Reduce import dependence, and Strengthen supply-chain resilience.

Financial Incentives under DLI

Product Design Linked Incentive	Reimbursement up to 50% of eligible expenditure Cap: ₹15 crore per application Applicable to ICs, chipsets, SoCs, systems, and IP cores
Deployment Linked Incentive	Incentive of 6%–4% of net sales turnover for 5 years Cap: ₹30 crore per application Minimum cumulative net sales (Years 1–5): ₹1 crore for startups/MSMEs and ₹5 crore for other domestic companies Design must be successfully deployed in electronic products

What are the Institutional Frameworks Supporting Semiconductor Design?

Ministry of Electronics and IT (MeitY)	<ul style="list-style-type: none"> Policy leadership and coordination Anchors national semiconductor initiatives Introduced DLI to help Indian firms move up the value chain
Semicon India Programme (SIM)	<ul style="list-style-type: none"> Total outlay: ₹76,000 crore Supports manufacturing, design, and display ecosystems Provides end-to-end support from design to productisation
Chips to Startup (C2S) Programme	<ul style="list-style-type: none"> Capacity-building initiative across academic institutions Target: 85,000 industry-ready professionals Covers B.Tech, M.Tech, and PhD levels in chip design
Microprocessor Development Programme	<ul style="list-style-type: none"> Implemented by C-DAC, IIT Madras, IIT Bombay Delivered indigenous open-source processors: VEGA, SHAKTI and AJIT Strengthens self-reliance in CPU architectures

What are the success stories under the DLI Scheme?

24 chip-design projects sanctioned (e.g., video surveillance, drones, energy meters, microprocessors, satellite communications, IoT SoCs). 95 companies provided access to industry-grade EDA tools

Notable Beneficiaries

Vervesemi Microelectronics- 110+ IPs, 25 IC variants, 10 patents. Motor-control chips for consumer appliances and EVs. Pilot-lot sampling completed; global customers engaged

InCore Semiconductors- Indigenous RISC-V processor IPs. Silicon-proven across 180 nm to 16 nm nodes. Targeting entry-level smartphones and edge AI.

Netrasemi- Designed India's first indigenous AI SoC at 12 nm. Applications in surveillance, robotics, drones. Strong VC backing; multiple tape-outs planned.

Conclusion

There has been a Strategic Impact of the DLI Scheme. It anchors India in the most value-intensive segment of semiconductors design, reduces dependence on imported IPs and chips and enhances resilience against geopolitical and supply-chain disruptions.

With silicon-validated designs moving toward mass manufacturing and deployment, India is emerging as a credible global semiconductor design player and strengthening its self-reliant ecosystem.

Source: [PIB](#)

Faster is not fairer in POCSO case clearance numbers

UPSC Syllabus GS-2: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; Mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

Introduction

India achieved a 109% disposal rate in POCSO cases in 2025 through fast track special courts, closing more cases than were newly registered. This achievement is widely projected as progress against child sexual abuse. However, the experience on the ground shows that faster disposal has coincided with falling conviction rates, weak investigations, delayed support systems, and sustained hardship for child survivors and their families.

POCSO Framework

The POCSO Framework was established by the POCSO Act, 2012 to protect children below 18 years from sexual abuse, assault, harassment, and pornography. It provides child-friendly and gender-neutral procedures for reporting, investigation, and trial of offences.

The framework also ensures strict punishment for offenders, institutional responsibility, victim support, and a dignity-based, trauma-free justice process through Special Courts..

Key Components of the POCSO Framework

1. **Clear Definition of Child:** The Act defines a child as **any person below 18 years**, creating a uniform and non-negotiable protection threshold.
2. **Wide Spectrum of Offences:** It criminalises **penetrative sexual assault, non-penetrative sexual assault, sexual harassment, and use of children for pornography**, including aggravated forms.
3. **Enhanced Punishments (2019 Amendment):** Minimum punishment for penetrative sexual assault increased to **10 years**; for victims below **16 years**, punishment ranges from **20 years to life imprisonment**. **Death penalty** introduced for extreme aggravated offences.
4. **Mandatory Reporting Obligation:** All persons, including teachers, doctors, and institutions, must report suspected offences. **Failure to report is punishable.**
5. **Child-Friendly Investigation Procedures:** Statements must be recorded in a **non-intimidating environment**, preferably at the child's residence, ensuring dignity and emotional safety.
6. **Special Courts for Speedy Justice:** Dedicated **Special POCSO Courts** are mandated to ensure **time-bound and sensitive trials**.
7. **Protection of Child's Identity:** Strict **confidentiality provisions** prohibit disclosure of the child's identity by media or authorities.
8. **Gender-Neutral Protection:** The law applies **equally to all children**, irrespective of gender, recognising diverse victim profiles.
9. **Time-Bound Trial Framework:** Evidence recording should occur within **30 days**, and trials should ideally conclude within **one year** to reduce secondary trauma.

What are the shortcomings in the working of the POCSO Act?

1. **At the Trial Stage:** The challenges at this stage include:

- Lack of Special Courts in all districts.
- Lack of Special Public Prosecutors for Special Courts.
- Non-compliance with the timelines prescribed by the Act.

2. **At the Post-Trial Stage:** While final compensation may find a mention in the sentence order, interim compensation finds no mention in any orders of the Special Courts. Often the disbursement of compensation is delayed.

3. **Hurdles in implementation:** There are several hurdles:

- The slow pace of designation of Special Courts.
- Delay in investigation and filing of chargesheets.
- Non-appointment of support persons for child victims.
- Delay in disposal of POCSO Cases.

4. **Pendency of Cases:** The pendency of POCSO cases has reached 85% in 2020.

5. **Legal Aids Create Nuisance:** Many legal aids add extra information to make the case stronger. Many times false information is added in the complaint. This only creates issues in the moving forward of the case.

6. **Inadequate awareness about the POCSO Act:** A 2020 study on Child Sexual Abuse Awareness and Attitudes by World Vision India found that only 35% children and 32% caregivers were aware about the POCSO Act. The awareness varied across urban, rural and tribal areas with tribal areas being the least aware.

7. **Inadequate Training of Various Stakeholders:** Child Protection System involves a lot of stakeholders like Private and Government Medical Practitioners, Juvenile Justice Boards, Law Enforcement Officials (Police), Judges, Public Prosecutors etc. All stakeholders should be aware of their own as well other stakeholders' responsibilities. At present, there is lack of adequate training for many stakeholders e.g., Private medical practitioners are usually the first point of contact for child victims but no mandatory training is provided to enable them to handle cases of child sexual abuse effectively.

Expansion of Fast Track Courts For POCSO case

1. **Growth of fast track courts:** India currently operates 773 fast track special courts, with 400 dedicated to POCSO cases. These courts were launched in October 2019 with ₹1,952 crore from the Nirbhaya Fund.

2. **Disposal performance:** By September 2025, these courts disposed of 3,50,685 cases. They handle an average of 9.51 cases per month, compared to 3.26 cases in regular courts.

3. **Perception of backlog reduction:** Higher disposal rates have created the impression that pendency is being resolved. This perception focuses on numbers closed rather than quality of outcomes delivered.

Major concern related to Expansion of Fast Track Courts For POCSO case

1. **Decline in conviction rates:** Conviction rates fell from 35% in 2019 to 29% by 2023. With rising disposal rates, convictions should have increased, but they instead dropped sharply.

2. **Fast track courts underperform on outcomes:** Fast track courts record an average conviction rate of only 19%. In several States, acquittals exceed convictions, showing that speed has weakened case strength.

3. **Hasty investigations and delayed forensics:** Investigations are rushed, charge sheets remain incomplete, and forensic reports are delayed. These weaknesses are prominent in heavily burdened courts.

4. Lack of child-specific support during trials: Children require trained support persons, sensitive police handling, and continuous care during trials. When these systems remain absent, cases weaken and survivors disengage.

5. Non-implementation of support person system: Section 39 of the POCSO Act requires support persons for child survivors. The Supreme Court mandated their appointment in 2021, and detailed guidelines were issued in 2024 by the National Commission for Protection of Child Rights, yet several States have not empanelled them, causing cases to collapse before trial.

6. Absence of para-legal volunteers at police stations: Most police stations still lack para-legal volunteers for POCSO cases. Andhra Pradesh has PLVs in only 42 of 919 police stations, while Tamil Nadu has none across 1,577 stations. As a result, in many cases families approach police stations alone, face pressure, and struggle to register cases promptly.

7. Problematic judicial practices: Courts have sometimes diluted convictions after accused offered marriage to survivors once they became adults. Such practices push survivors into lifelong ties with abusers.

8. Delayed and ineffective compensation: Although interim compensation is legally allowed, courts often wait for final verdicts. Survivors receive support years later, when education and income losses are already irreversible.

9. Economic burden on families: Marginalised families borrow money for travel and legal expenses. Daily wage earners lose work, and caregivers leave jobs, while state relief remains inadequate.

Conclusion

The expansion of fast track courts has improved disposal numbers but weakened justice outcomes under the POCSO framework. Falling convictions, poor investigations, missing support systems, delayed compensation, and high family costs show that speed alone cannot protect children. Justice must be measured by accountability, care, and outcomes, not by clearance statistics.

Question for practice:

Examine how the expansion of fast track courts under the POCSO Act has increased case disposal rates but weakened conviction outcomes and child protection support mechanisms.

Source: [The Hindu](#)

The year gone by, the Quad's year of interregnum

UPSC Syllabus- GS Paper 2- International Organisations- Their structure and Mandate

Introduction

The year 2025 marked a phase of pause and recalibration for the Quad amid deep global geopolitical churn. The return of Donald Trump as U.S. President reshaped American priorities, while the Indo-Pacific emerged as the most contested region due to rising U.S.–China competition. In this context, the Quad continued to matter, even as it entered a clear phase of interregnum marked by strategic uncertainty and leadership transition.

What is the Quad Grouping?

Quadrilateral Security Dialogue (QSD) or Quad: It is an informal strategic forum among like-minded democracies across the Indian and the Pacific Ocean, which is aimed to ensure and support a 'free, open and prosperous' Indo-Pacific region. It comprises of the USA, India, Japan, and Australia.

Evolution of the Quad

1. **Humanitarian origins:** The Quad emerged in 2004 after the Indian Ocean tsunami as a coordination platform for humanitarian assistance and disaster relief.
2. **Early withdrawal:** Member states stepped back due to domestic priorities and fears of being perceived as containing China, leading to loss of momentum.
3. **Strategic revival:** In 2007, Shinzo Abe articulated an Indo-Pacific vision, which gained substance in 2017 as the Quad was revived to support a rules-based order amid China's growing regional presence.
4. **Institutional deepening:** Between 2021 and 2024, the Quad held six leader-level summits and multiple ministerial meetings, transforming it into an action-oriented cooperation framework.

Importance of the Quad

1. **Strategic balance:** The Quadrilateral Security Dialogue acts as a counterbalance to China's growing influence by promoting a free, open, and inclusive Indo-Pacific grounded in shared rules and norms.
2. **Rules-based order:** The Quad consistently supports ASEAN centrality, UNCLOS, and peaceful dispute resolution, reinforcing stability in contested regions such as the South China Sea.
3. **Maritime security:** The grouping strengthens maritime security through coordinated initiatives like maritime domain awareness and joint naval exercises, improving monitoring and response capacity across the Indo-Pacific.
4. **Operational cooperation:** Mechanisms such as the Indo-Pacific Partnership for Maritime Domain Awareness and the annual Malabar naval exercise enhance interoperability and protect sea lanes.
5. **Economic cooperation:** The Quad promotes resilient economic growth through infrastructure development and coordination, offering credible alternatives to debt-driven development models in the region.
6. **Infrastructure alternatives:** Platforms like the Quad Infrastructure Coordination Group help design and finance transparent and sustainable infrastructure projects across Indo-Pacific states.
7. **Supply chain resilience:** The Quad works to reduce over-dependence on China in critical minerals, semiconductors, and emerging technologies to prevent economic coercion and supply disruptions.
8. **Technology security:** Initiatives on semiconductor supply chains and cable connectivity aim to secure critical digital and industrial infrastructure vital for economic and national security.

9. **Public goods delivery:** The Quad has expanded beyond security to provide public goods such as vaccines and health cooperation through initiatives like the Quad Vaccine Partnership.

10. **Humanitarian response:** The grouping plays a key role in humanitarian assistance and disaster relief through logistics coordination and timely support during regional disasters..

Evaluation of the Quad in 2025

1. **Leadership pause:** The Quad failed to convene a leader-level summit in 2025 despite India being scheduled to host it, breaking the earlier rhythm of engagement.

2. **Policy transition:** Leadership changes in the United States and Japan introduced uncertainty, with new leaders yet to participate in Quad summits.

3. **Diplomatic continuity:** U.S. Secretary of State Marco Rubio hosted Quad Foreign Ministers in January and July 2025, signalling continued political priority.

4. **Operational resilience:** Initiatives such as Quad-at-Sea and port infrastructure cooperation continued, showing that collaboration had moved beyond symbolism.

5. **Strategic interregnum:** Developments in 2025 reflected recalibration rather than weakening, shaped by leadership change and regional uncertainty.

Challenges Faced by the Quad

1. **Anti-China perception:** The Quad is widely viewed as an anti-China alignment, with China calling it an “Asian NATO” and accusing it of promoting regional discord.

2. **Divergent priorities:** Quad members differ in threat perception and commitment levels, as seen during the 2020 Galwan Valley clashes when support for India did not translate into direct involvement.

3. **U.S. recalibration:** The Trump administration’s ‘America First’ approach created uncertainty among partners about the consistency of U.S. strategic commitment.

4. **India-U.S. frictions:** U.S. positions on India-Pakistan issues, Kashmir, and tariffs related to India’s oil purchases from Russia strained trust within the grouping.

5. **Institutional deficit:** The absence of a formal secretariat or treaty framework limits long-term planning, policy continuity, and execution capacity.

6. **China dependence:** Strong economic ties with China constrain Quad members’ strategic choices, highlighted by trade retaliation against Australia and China’s export embargoes on rare earths and critical minerals.

7. **Security divergence:** India’s preference for strategic autonomy and reluctance toward formal military alliances slows deeper security cooperation.

8. **Expansion dilemma:** Including new members risks diluting cohesion and focus, raising concerns over effectiveness and internal consensus.

9. **ASEAN unease:** Some ASEAN states fear the Quad could increase regional polarization and weaken ASEAN's central role in Indo-Pacific dialogue.

Way Forward

1. **Summit urgency:** An early leader-level summit is essential to restore political momentum and reaffirm shared strategic priorities.

2. **Institutionalisation:** The Quad should move towards a more formal structure through a light secretariat and regularised meetings at working, ministerial, and leaders' levels.

3. **Security deepening:** Military cooperation should be strengthened by expanding the Malabar naval exercise to include advanced operations such as anti-submarine and amphibious warfare.

4. **Operational expansion:** Existing initiatives on maritime security, ports, and logistics should be scaled up to deliver visible outcomes across the Indo-Pacific.

5. **ASEAN engagement:** A structured Quad-ASEAN dialogue can align efforts on maritime security, infrastructure development, and regional economic resilience.

6. **Economic framework:** A Quad economic framework should be established to support digital trade, high-tech investment, and coordination on standards for emerging technologies.

7. **Quad Plus outreach:** A 'Quad Plus' dialogue on infrastructure and development can include partners like South Korea, Vietnam, and Singapore to widen regional cooperation.

8. **Strategic reassurance:** Clear communication among Quad members is needed to manage bilateral frictions and sustain trust during periods of political transition.

Conclusion

Resilient relevance: The year 2025 tested the Quad's cohesion but did not erode its strategic value. Despite diplomatic strain and summit absence, cooperation continued through active initiatives. This interregnum reflects adjustment, not erosion, reaffirming the Quad's enduring role in strengthening Indo-Pacific security and collective action amid growing regional instability.

For detailed information on **QUAD Grouping- Significance and Challenges** [read this article here](#)

Question for practice:

Discuss how the Quad evolved and remained relevant during 2025 despite leadership transitions, diplomatic frictions, and the absence of a leader-level summit in an increasingly contested Indo-Pacific region.

Source: [The Hindu](#)

Article 6 of Paris Agreement as a powerful tool for India

Introduction- To strengthen the delivery and efficiency of climate finance, the carbon markets under Article 6 (A6) of the Paris Agreement were made fully operational at COP29.

Operationalisation of Article 6 at COP29

- 89 cooperation arrangements under Article 6.2 now exist across 58 Parties, indicating rapid growth in bilateral and plurilateral carbon market collaborations.
- Adoption of the Paris Agreement Crediting Mechanism (Article 6.4) marked the transition from the Clean Development Mechanism to a more rigorous, transparent, and globally aligned framework.

India's Entry into Article 6 Mechanisms

- In August 2025, India signed the Joint Crediting Mechanism (JCM), operationalising Article 6.2.
- This move represents a new phase of international climate cooperation and India's formal entry into global carbon markets under the Paris Agreement.

Why does Article 6 matter for India?

Benefits in terms of access- Participation in Article 6 enables Transfer of advanced technologies, Support for R&D, Stronger bilateral relations and Inflow of climate finance.

Drive socio-economic transformation- A6 can drive **socio-economic transformation** aligned with India's development and climate goals.

Driver of economic growth- It will help in accelerating low-carbon industrial and technological transformation and building resilient trade relationships.

What are India's identified eligible activities under Article 6?

India has identified 13 eligible activities balancing climate and development priorities. Its Focus is on high-end, emerging technologies with strong emissions reduction and growth potential.

The Key sectors for the next three years include:

- Renewable energy with storage
- Solar thermal and offshore wind
- Green hydrogen and compressed bio-gas
- Advanced mobility solutions (e.g., fuel cells)
- High-end energy efficiency technologies
- Sustainable aviation fuel

Article 6 also aligns with long-term decarbonisation goals:

- Offshore wind, energy storage, and marine energy to diversify beyond coal
- Green hydrogen for industrial decarbonisation (e.g., steel)
- Carbon capture, utilisation, and storage (CCUS) for hard-to-abate sectors like cement

What should be the way forward for realising the full benefit of Article 6?

Strengthen domestic framework- Clarify the role of the Designated National Authority. Define rules for Letters of Authorisation, corresponding adjustments, and carbon trading regulation

Streamline project clearances- Create a Cabinet-level steering committee. Establish a single-window clearance system. Address long approval timelines (over 1,600 days in India vs <400 days elsewhere in Asia)

Build the carbon removals market- Leverage rising global demand. Promote activities like Biochar and Enhanced Rock Weathering.

Strengthen South-South collaboration- Develop shared systems, knowledge networks, and financing models among developing countries.

Conclusion

India's engagement under Article 6 is more than procedural. It offers a pathway to advanced technologies, climate-aligned finance, and deeper international partnerships, supporting long-term economic and climate objectives.

Question for Practice

How can Article 6 of the Paris Agreement enable countries like India to accelerate low-carbon development while ensuring environmental integrity and avoiding double counting of emissions reductions?

Source- [TH](#)

Early investment in children, the key to India's future

Source: The post “Early investment in children, the key to India's future” has been created, based on “Early investment in children, the key to India's future” published in “The Hindu” on 13th January 2026.

UPSC Syllabus: GS Paper-2- Governance

Context: India aims to become a **Viksit Bharat and a \$30 trillion economy by 2047**. Achieving this requires **long-term, evidence-based investment in human capital**, not merely infrastructure, manufacturing, or macroeconomic targets. While health and education are discussed, **Early Childhood Care and Development (ECCD)** lacks a concrete, focused national roadmap.

Importance of the First 3,000 Days of Life

- The first 3,000 days of life, from conception to eight years of age, are the most critical period for human development.
- The first 1,000 days are recognised by the World Health Organization and UNICEF as a crucial window for physical growth, brain development, and long-term health.

- The following 2,000 days significantly shape cognitive abilities, emotional regulation, social skills, and learning capacity.
- **Nearly 80–85% of brain development occurs during early childhood**, making this phase decisive and largely irreversible if neglected.

Early Childhood Care and Development (ECCD) as a Strategic Economic Investment

- Investment in early childhood care and development should be viewed as a **strategic economic investment** rather than a welfare measure.
- Children **who are well-nourished, emotionally secure, and cognitively stimulated are more likely to complete education** and participate productively in the workforce.
- Such investments **lead to higher lifetime earnings, increased tax contributions, and reduced intergenerational poverty**.
- At the national level, **ECCD reduces future expenditure on healthcare**, remedial education, and social protection.
- Evidence from countries such as **Finland, South Korea, and the United States demonstrates** the high long-term returns of early childhood investments.

India's Experience and Existing Interventions

- India has **made significant progress in child and newborn survival through programmes** such as the National Health Mission and ICDS.
- Initiatives like **Mission Saksham Anganwadi and POSHAN 2.0** have strengthened nutritional support, particularly for disadvantaged groups. However, most interventions have focused on child survival rather than holistic development.
- **ECCD efforts remain fragmented and insufficiently integrated** across sectors.

Limitations of a Targeted Approach

- Early childhood development interventions in India are **largely targeted at children within government safety nets**. This approach excludes large sections of middle- and higher-income families.
- **Children from non-poor households increasingly face challenges** such as obesity, physical inactivity, excessive screen exposure, and emotional difficulties. Therefore, early childhood care and development must be universal rather than limited to poverty alleviation programmes.

Scientific Basis for Early Intervention

- Advances in epigenetics show that **parental health, nutrition, stress, and lifestyle** before conception influence a child's long-term outcomes.
- **Parental obesity, substance use, and chronic stress** increase the risk of non-communicable diseases and developmental delays in children.
- During the **first 1,000 days, most neural connections are formed**, making early deprivation particularly damaging. Despite this, children spend most of this period within families with minimal formal developmental support.

Gaps in Current Systems

- **Formal developmental interventions** typically begin only at 30–36 months through Anganwadi centres or preschools. This **delay results in the neglect of the most critical early developmental window**.
- Parents **often rely on commercially driven or poorly informed social media** content for guidance on child development.
- **Credible and structured support** for early stimulation and responsive caregiving remains limited.

Key Measures Required for Strengthening ECCD

- India must **introduce structured premarital and pre-conception counselling** focusing on nutrition, mental health, and healthy lifestyles.
- Parents **should be empowered with knowledge of early stimulation** through talking, reading, singing, playing, and emotional engagement from infancy.
- Families should be **trained in basic growth monitoring** and identification of age-appropriate developmental milestones.
- **Early detection of developmental delays** should be prioritised as a **cost-effective intervention**.
- **Greater investment is required in quality care** and learning systems for children aged two to five years.
- **Health, nutrition, and education systems must be integrated** to move beyond silo-based functioning.
- **Schools should evolve into hubs** that promote learning, health, nutrition, and overall well-being.
- **Teachers should be trained in child growth** and development beyond academic instruction.
- Early childhood development **should become part of a nationwide social conversation** involving families, communities, NGOs, philanthropy, and CSR initiatives.
- **Institutional and Governance Framework**
 - **Effective coordination is required** among the Ministries of Health and Family Welfare, Education, and Women and Child Development.
 - A **national, inter-ministerial mission on early childhood care and development** should be established to ensure a clear roadmap and accountability.

Conclusion: India's future development will depend not on policy promises but on concrete investments in children during their earliest years. A citizen-led and state-supported movement for child growth, learning, and development is essential for achieving inclusive and sustainable national progress.

Question: Early Childhood Care and Development (ECCD) is a strategic economic investment rather than a welfare measure. Discuss the significance of focusing on the first 3,000 days of life for India's aspiration of becoming a developed nation by 2047.

Revisiting the bail norm

Source: The post "Revisiting the bail norm" has been created, based on "Revisiting the bail norm" published in "BusinessLine" on 13th January 2026.

UPSC Syllabus: GS Paper-2- Polity

Context: The Supreme Court in *State of Rajasthan v Balchand (1977)*, through Justice V.R. Krishna Iyer, established that **bail is the rule and jail is the exception**. The ruling emphasized **humaneness in criminal**

justice while upholding the rule of law. Despite this, current practices show that bail jurisprudence is often **obfuscated and inconsistent**, leading to unnecessary escalation to higher courts.

Challenges in Bail Jurisprudence:

1. **Escalation to Higher Courts:** Bail applications are often taken to the **Supreme Court**, consuming its precious time. Many applications are **registered but not heard**, or only a few get judicial attention.
2. **Inconsistency in Court Decisions:** Recent Delhi riots case (*Umar Khalid and Sharjeel Imam*) highlighted perceptions of **inconsistent bail rulings**. Courts differentiate based on the role of the accused, e.g., **principal conspirators vs. subsidiary actors**, but public perception often sees this as arbitrariness.
3. **Prosecution's Role:** Many prosecutors adopt a **mechanical and aggressive approach**, opposing bail regardless of merit. Political pressures and fear of criticism discourage prosecutors from exercising discretion.
4. **Delay in Disposal of Cases:** Under-trial prisoners often remain in jail for **years**, violating basic human rights. In the Delhi riots case, some accused were in **jail for five years** before bail was considered.
5. **Human Rights Concerns:** Routine incarceration of suspects, especially for minor or subsidiary roles, undermines **human rights and presumption of innocence**. High numbers of **under-trial prisoners** in India's jails is a shame and strains the criminal justice system.

Way Forward:

1. Strengthen **lower court capacity** to decide bail quickly and reduce unnecessary escalation to higher courts.
2. Promote **consistent and transparent standards** for bail, with guidelines differentiating roles of accused and nature of offenses.
3. Encourage **prosecutors** to adopt a balanced approach considering humanitarian grounds.
4. Implement **fast-track procedures** for under-trials to ensure timely justice.
5. Educate public and judiciary about **human rights and presumption of innocence**, reinforcing that bail is the norm.

Conclusion: Bail should remain the **rule, not the exception**, balancing crime control with human rights. Judicial reforms, better prosecution conduct, and timely disposal of cases are essential to uphold **justice, fairness, and the integrity of India's criminal justice system**.

Question: The principle of 'Bail is the rule and jail is the exception' is often ignored in practice. Discuss the challenges in bail jurisprudence in India and suggest reforms to ensure timely and humane dispensation of justice.

Rupee depreciation: Is RBI intervention deferring the inevitable?

Source: The post "**Rupee depreciation: Is RBI intervention deferring the inevitable?**" has been created, based on "**Rupee depreciation: Is RBI intervention deferring the inevitable?**" published in "**BusinessLine**" on 14th January 2026.

UPSC Syllabus: GS Paper-2- Economy

Context: The Reserve Bank of India (RBI) has used dollar/rupee buy-sell swap auctions as part of its strategy to manage excess volatility in the foreign exchange market, especially as the rupee faces persistent depreciation pressures around the 90/\$ level.

Role of swaps in RBI's intervention strategy

RBI follows a **two-pronged approach** to currency management:

1. **Spot market intervention:**
RBI sells dollars in the spot market to arrest sharp or disorderly depreciation of the rupee. While this helps stabilise the exchange rate, it leads to a withdrawal of rupee liquidity from the domestic financial system.
2. **Forward market intervention through swaps:**
To offset the liquidity tightening caused by spot dollar sales, RBI conducts dollar/rupee buy-sell swaps. By buying dollars in the present, RBI injects rupee liquidity into the system. The commitment to sell dollars in the future increases forward dollar supply and helps compress forward premiums. Thus, swaps stabilise both domestic liquidity conditions and market expectations.

Through this mechanism, RBI aligns with its stated objective of curbing “excessive volatility” without explicitly targeting the exchange rate level.

Costs and limitations of continued intervention

Despite its advantages, sustained intervention entails significant costs:

1. **Forward liability build-up:** Repeated buy-sell swaps lead to net forward dollar sales, particularly at longer maturities, creating future obligations and shifting the cost of intervention to a later date.
2. **Reserve dependence:** Continuous spot intervention increases reliance on foreign exchange reserves and forward positions.
3. **Reduced exchange rate flexibility:** Persistent intervention has drawn IMF criticism, with the rupee classified as a crawl-like arrangement, limiting the currency's ability to absorb external shocks.
4. **Moral hazard:** Corporates may under-hedge foreign exchange risks, expecting RBI to maintain currency stability.

Challenges

1. **Rising forward liabilities:** Repeated use of buy-sell swaps leads to accumulation of net forward dollar sales, pushing exchange rate risks and costs into the future.
2. **Dependence on reserves:** Persistent spot dollar sales increase reliance on forex reserves and forward commitments, reducing policy buffers.
3. **Limited exchange rate flexibility:** Continuous intervention suppresses natural price discovery, weakening the rupee's ability to absorb external shocks.
4. **Liquidity-inflation trade-off:** Rupee liquidity injected through swaps may complicate domestic liquidity management and inflation control.
5. **Market moral hazard:** Corporates and importers may hedge inadequately, assuming RBI will cap volatility.
6. **Inability to offset fundamentals:** Structural pressures from weak exports, adverse capital flows, and narrow interest differentials cannot be fully countered by intervention.

Way Forward

1. **Allow greater exchange rate flexibility** to absorb external shocks and reduce repeated intervention.
2. **Strengthen export competitiveness** through diversification of markets and products, and reduced trade concentration risks.
3. **Improve fiscal discipline and growth conditions** to support durable capital inflows and currency confidence.
4. **Encourage prudent corporate hedging**, especially for large importers, to reduce reliance on RBI for stability.
5. **Deepen forex and derivatives markets** to improve risk-sharing, liquidity, and price discovery.
6. **Use intervention selectively**, focusing only on disorderly volatility rather than defending implicit exchange rate levels.
7. **Coordinate monetary, fiscal, and trade policies** to address the root causes of persistent rupee depreciation.

Conclusion: Dollar/rupee swaps are an effective short-term tool for managing volatility and liquidity. However, durable currency stability requires strengthening domestic growth, improving fiscal management, diversifying exports, and encouraging prudent hedging by firms, rather than relying excessively on central bank intervention.

Question: How do RBI's dollar/rupee swap auctions fit into its currency stabilisation strategy? Are there costs to such intervention?

Source: [Business Line](#)

India-EU FTA

Source: The post "India-EU FTA" has been created, based on "Explained | FTA with EU to help boost India's exports to the 27-nation bloc" published in "DeccanHerald" on 14th January 2026.

UPSC Syllabus: GS Paper-2- International Relations

Context: India and the European Union (EU) are in the final stages of negotiating a Free Trade Agreement (FTA), which, if concluded, will be India's **19th trade pact**. The agreement is significant given current global trade disruptions and rising protectionism.

Significance of the India-EU FTA

1. The EU is India's **largest trading partner for goods** and a key destination for services exports.
2. Bilateral trade in goods stood at **USD 136.5 billion (2024-25)**, with the EU accounting for **~17% of India's total exports**.
3. The FTA is crucial amid **high US tariffs (up to 50%)**, enabling India to diversify export markets and reduce dependence on China and the US.
4. The EU is a large, high-income market (GDP ~USD 19.5 trillion), offering stable long-term export demand.

Benefits for India

1. **Tariff reduction and elimination:** Current EU tariffs of **12–16% on Indian textiles** will be reduced, improving competitiveness.
2. **Boost to labour-intensive sectors:** Textiles, garments, leather, pharmaceuticals, auto components, and electronics are expected to gain.
3. **Expansion of services exports:** Business services, IT, telecom, and transportation services are likely to see higher market access.
4. **Supply chain diversification:** Helps Indian firms integrate into EU value chains in automobiles, machinery, chemicals, and green technologies.
5. **FDI inflows:** EU is already a major investor (USD 117.4 billion cumulative FDI); the FTA can further enhance investment flows.

Benefits for the EU

1. Improved access to India's fast-growing market of **1.4 billion people**.
2. Increased exports of **aircraft, electrical machinery, diamonds, chemicals**, and intellectual property-intensive services.
3. Stronger presence in India's services sector, including IT and business services.

Key Challenges

1. **Differences on tariffs** for sensitive sectors such as automobiles, wine, and spirits.
2. **Regulatory and standards issues**, including labour, environment, and sustainability norms.
3. **Intellectual property rights and data protection concerns**.
4. **Public procurement access** and services liberalisation remain contentious.
5. Risk of **adjustment pressures on MSMEs** due to increased competition.

Way Forward

1. **Balanced tariff liberalisation:** Adopt a phased and calibrated reduction of tariffs in sensitive sectors such as automobiles, wines, and spirits to protect domestic industry while ensuring market access.
2. **Regulatory preparedness:** Align domestic standards with EU norms on labour, environment, and sustainability to avoid non-tariff barriers.
3. **Strengthen MSME competitiveness:** Provide credit, technology upgradation, and skilling support to help MSMEs adjust to increased competition.
4. **Focus on services mobility:** Secure greater market access for Indian professionals through easier visa regimes and mutual recognition of qualifications.
5. **Leverage supply chain integration:** Encourage Indian firms to integrate into EU value chains, especially in green technologies, electronics, and pharmaceuticals.
6. **Enhance trade facilitation:** Improve logistics, customs efficiency, and digital trade infrastructure to fully utilise FTA benefits.
7. **Policy coordination:** Align trade policy with industrial, investment, and export promotion strategies to maximise gains from the FTA.

Conclusion: The India–EU FTA has the potential to significantly boost India's exports, enhance services trade, and strengthen economic resilience amid global uncertainty. However, its success will depend on balancing market access with domestic sensitivities, regulatory preparedness, and complementary reforms to enhance export competitiveness.

Question: The India–EU Free Trade Agreement is strategically significant in the context of rising protectionism and global trade fragmentation. Discuss the geopolitical and economic relevance of the India–EU FTA for India.

Source: [Deccan Herald](#)

India must focus on AI and its environmental impact

UPSC Syllabus Topic: GS Paper 3– Science and Technology – Developments and their applications and effects in everyday life.

Introduction

India must focus on AI and its environmental impact as AI adoption expands rapidly across sectors such as health care, agriculture, and industry. While AI-driven growth promises efficiency and innovation, its hidden environmental costs receive limited attention. The development and deployment of AI systems increase energy demand, carbon emissions, water use, and pressure on natural resources. Without recognising and addressing these costs, large-scale AI expansion risks undermining climate goals, water security, and long-term environmental sustainability.

What is the current status of AI use in India?

- 1. High Adoption Rate:** India shows a strong AI adoption with **70% of its firms already running AI projects**, compared to the **US at 53%**.
- 2. Data Utilization for AI:** **91% of Indian companies plan to use their data for training AI models**, which is higher than the **global average of 62%**.

Environmental consequences and sustainability challenges of AI

- 1. Rising carbon emissions from AI systems:** AI development increases carbon emissions due to heavy computing needs during training and deployment. Studies show that training a single large language model can emit nearly **300,000 kg of carbon**, adding pressure to climate mitigation efforts.
- 2. Energy-intensive data centres:** Most AI systems operate through large data centres that consume vast amounts of electricity. A single ChatGPT query uses **10 times more energy than a Google search**, and in tech hubs like Ireland, data centres may account for **35% of total energy use by 2026**.
- 3. Dependence on fossil fuels:** In many regions, data centres still rely on fossil-fuel-based electricity. This links AI expansion directly to greenhouse gas emissions, worsening global warming and undermining climate goals.
- 4. Power Fluctuations:** Unlike conventional computing, AI training involves sudden spikes and drops in electricity use across different phases. These volatile power loads are difficult for grids to absorb and often require diesel-based backup generators, worsening emissions and air pollution.
- 5. Model Obsolescence:** Generative AI models have a short life-cycle, with frequent releases of newer versions. This makes energy spent on training older models largely redundant, while newer models generally require even greater computational and energy inputs.

6. High water consumption: AI infrastructure uses water for construction and cooling. According to United Nations Environment Programme, AI servers could consume **4.2–6.6 billion cubic metres of water by 2027**, increasing water scarcity risks in already stressed regions.

7. Electronic waste generation: Data centres generate large volumes of e-waste containing hazardous substances such as mercury and lead. Improper disposal of this waste threatens soil, water, and human health.

8. Resource-intensive hardware production: Producing AI hardware requires huge raw material inputs. Manufacturing a **2 kg computer needs about 800 kg of raw materials**, while microchips depend on rare earth elements mined through environmentally destructive practices.

9. Ecological Pressure: Data centres are physical infrastructures embedded in local environments. Their combined electricity use, water consumption, and resource extraction exert indirect but lasting pressures on biodiversity and surrounding ecosystems.

Data gaps and under-reporting of AI impacts

1. Lack of reliable emissions data: Accurate data on AI's environmental footprint is limited. Estimates vary widely, with the ICT sector contributing **1.8%–3.9% of global GHG emissions**, making informed policy difficult.

2. Misleading efficiency claims: Some corporate disclosures understate AI's environmental costs. For example, a claim that one AI text prompt uses only **0.24 watt-hours of electricity** has been criticised for ignoring cumulative and lifecycle impacts.

3. Absence of lifecycle assessment: Most assessments focus only on **energy use during operation**. Impacts from **mining, hardware manufacturing, water use, and disposal remain poorly measured and reported**.

Global policy responses and ethical frameworks

1. Ethical recognition of environmental harm: In 2021, UNESCO adopted recommendations recognising AI's negative environmental and social impacts. Around **190 countries** endorsed these non-binding principles.

2. Legislative steps in advanced economies: The European Union and the United States have proposed laws to regulate AI's environmental effects, including rules on emissions from high-compute activities.

3. Limited global enforcement: Despite ethical guidelines, binding environmental guardrails for AI remain rare. Governments often prioritise innovation and competitiveness over sustainability concerns.

India's current approach and missing focus

1. Focus on AI as a climate solution: Current discussions in India emphasise how AI can help fight climate change. However, they overlook the environmental costs of building and running large AI models.

2. No dedicated AI impact assessment: India mandates Environmental Impact Assessments under the **EIA Notification, 2006**, but AI systems are not included. This creates a regulatory gap despite their growing environmental footprint.

3. Need for policy alignment: AI policies are largely disconnected from environmental regulation. This weakens India's ability to manage long-term ecological risks from digital infrastructure.

What should be done?

A. UNEP recommendations

The United Nations Environment Programme has **proposed five measures to limit the environmental impact of artificial intelligence.**

1. Impact measurement: UNEP recommends standardised frameworks to assess AI's environmental footprint across its life cycle. This covers emissions, energy use, water consumption, and material use.

2. Mandatory disclosure: UNEP suggests requiring companies to disclose the direct environmental impacts of AI-based products and services. This improves transparency and policy credibility.

3. System efficiency: UNEP advises improving the energy efficiency of AI algorithms. It also supports water recycling and reuse of hardware components where feasible.

4. Green data centres: UNEP recommends powering data centres with renewable energy and using carbon offset mechanisms. This reduces emissions from high-compute AI activities.

5. Policy integration: UNEP stresses that AI policies should be integrated with existing environmental regulations. This aligns AI development with climate governance.

B. India-specific measures

1. EIA inclusion: The article proposes extending India's Environmental Impact Assessment framework to AI development. This enables formal scrutiny of environmental risks from AI training and deployment.

2. National standards: India should develop common assessment standards for AI impacts. This requires collaboration between tech firms, think tanks, and civil society groups.

3. Regulatory metrics: India needs consistent sustainability indicators for regulatory use. These metrics should support monitoring, compliance, and informed decision-making.

4. ESG (Environmental, Social, and Governance) reporting: AI-related environmental impacts should be included under ESG disclosure norms. This strengthens corporate accountability in high-compute operations.

Conclusion

AI growth brings clear environmental risks through emissions, energy use, water stress, and resource depletion. India must measure these costs, integrate AI into environmental regulation, and enforce disclosure standards. Without such steps, AI expansion may deepen climate, water, and sustainability challenges instead of supporting long-term development and global environmental goals.

Question for practice:

Discuss how the rapid expansion of artificial intelligence in India is creating environmental challenges and what measures are needed to address its sustainability impacts.

Source: [The Hindu](#)

Are India's small towns being increasingly urbanised?

UPSC Syllabus Topic: GS Paper 1 -urbanisation, their problems and their remedies.

Introduction

India's urban future is often seen through megacities, but a deeper change is happening in small towns. Out of nearly 9,000 towns, most have populations below one lakh. Their rapid growth is not accidental. It reflects changes in capitalism, migration, labour markets, and policy choices. These towns are becoming key sites of economic activity, labour absorption, and consumption, even as they face serious governance, infrastructure, and inequality challenges.

Factors responsible for the growth of small towns in India

- 1. Crisis of metro-led growth:** Large cities earlier absorbed labour, capital, and consumption, but now face over-accumulation. High land prices, broken infrastructure, and rising living costs are pushing people and firms out.
- 2. Search for cheaper spaces:** Small towns offer cheaper land, flexible labour, and weaker regulation. These conditions attract logistics, warehousing, agro-processing, construction, and service activities.
- 3. Changing migration patterns:** Migrant workers pushed out of metros and rural youth with limited farm options are moving into small towns. This makes small towns active parts of the urban process.
- 4. Economic restructuring:** Older industries are declining or moving away from big cities. New activities shift to smaller centres, changing the size and spread of urban settlements.

Structure of urbanisation in small towns

- 1. Functional economic roles:** Small towns act as logistics nodes, service centres, consumption markets, and agro-linked hubs. They support regional economies rather than operating as isolated spaces.
- 2. Urbanisation under stress:** Urban growth happens under capitalist pressure, not planned inclusion. Development relies on low costs rather than strong public investment or regulation.
- 3. Polycentric urban spread:** Large cities are no longer single-centred. Multiple centres emerge around them, while smaller towns grow alongside, connected through transport and markets.
- 4. Market-driven spatial patterns:** Investment decisions are guided mainly by market forces. Planning no longer directs where economic activities should locate.

Concerns related to urbanised small towns

- 1. Urbanisation of rural poverty:** Growth does not mean better living conditions. Informal labour dominates, with insecure jobs in construction, home-based work, and platform services.
- 2. New local power hierarchies:** Control over land and labour shifts to real estate brokers, contractors, financiers, and political intermediaries. Inequality deepens within towns.
- 3. Infrastructure exclusion:** Urban missions remain metro-centric. Most small towns are excluded from reliable water, sewerage, and transport systems.
- 4. Ecological stress:** Dependence on tanker water, unchecked groundwater use, and weak waste systems increase environmental damage.
- 5. Weak local governance:** Municipalities lack funds, staff, and authority. Planning is outsourced and local participation remains limited to formal procedures.

Policy gaps and planning limitations

- 1. Limits of city size control:** Attempts to manage optimal city sizes remained theoretical. Policymakers could not develop tools to control urban distribution effectively.
- 2. Supply-side planning failures:** Restricting land supply through height limits or low FSI raises prices. It harms affordability and pushes economic activity elsewhere.
- 3. Incomplete decentralisation efforts:** Earlier recommendations for balanced growth and support to small towns were only partly implemented. Liberalisation weakened state-led spatial control.
- 4. Uneven infrastructure services:** The real divide lies in unequal access to services between large cities and smaller towns, not just city size.

Way forward

- 1. Political recognition:** Small towns must be accepted as the main frontier of India's urban future, not as secondary or transitional spaces.
- 2. Context-based planning:** Town plans should integrate housing, livelihoods, transport, and ecology. Metropolitan templates should not be copied blindly.
- 3. Empowered municipalities:** Local governments need funds, staff, and decision-making power. Transparency and local accountability must improve.
- 4. Inclusive institutional spaces:** Workers' collectives, cooperatives, and environmental groups need a role in urban decision-making.
- 5. Regulation of capital and platforms:** Digital and platform economies must ensure labour rights, local value retention, and accountability.

Conclusion

Small towns are now central to India's urban story. They absorb labour, capital, and economic change, but also reproduce inequality and stress. Their future depends on political will, better planning, stronger local governance, and fair regulation. They can deepen exclusion or become spaces of democratic and balanced urban transformation.

Question for practice:

Examine how the growth of small towns reflects changes in India's urbanisation pattern and discuss the key challenges and policy responses associated with this shift.

Source: [The Hindu](#)

An exploration of India's minerals diplomacy

UPSC Syllabus- GS paper2-international relations-Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests **and GS Paper-3**- Infrastructure.

Introduction

India's clean energy transition and industrial growth depend increasingly on secure access to critical minerals. However, global supply chains are fragile, highly concentrated, and dominated by a few players, especially China. India faces high import dependence, weak processing capacity, and geopolitical risks. In response, India is pursuing a two-pronged strategy that combines domestic capability building with diversified global partnerships to ensure long-term mineral security.

Understanding Critical Minerals

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

1. **Economic development & National Security** = Essential for economic development and national security as they are vital for development of materials for defense, aerospace, nuclear, and space applications.
2. **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.

Major Concerns and Structural Gaps in Critical Minerals

1. **Highly concentrated global distribution:** At least **55% of each identified critical mineral is located in only 15 countries**, making global supply chains fragile and disruption-prone.
2. **China's dominance in mineral supply chains:** China controls **55% of global rare earth mining and 85% of refining**, with a strong hold over the midstream segment, creating global dependence risks.
3. **India High import dependence:** India is **100% import-dependent for 10 critical minerals**, with 60–80% reliance for several others, exposing it to price and geopolitical shocks.

4. **India's weak processing and manufacturing base:** India has upstream mining potential, but **midstream processing and downstream manufacturing remain underdeveloped**. This forces continued dependence on imported refined minerals and finished components.

5. **Processing as the key choke point:** The main vulnerability lies not in access to ore but in **lack of domestic refining and processing capacity**. Without this, India remains exposed even when mining access is secured abroad.

6. **Uncertain and uneven global partnerships:** Several partnerships have progressed unevenly. Cooperation with the U.S. remains affected by tariffs, shifting trade rules, and policy volatility, while other regions lack institutional depth and long-term frameworks.

7. **Domestic governance and implementation gaps:** Challenges include **bureaucratic delays, inefficient auctioning, reliance on foreign investment, and limited ESG and transparency frameworks**. These gaps weaken India's credibility and effectiveness in global mineral partnerships.

India's Initiatives on Critical Minerals

1. **National Critical Mineral Mission (NCMM):** India launched the NCMM in **January 2025** with an outlay of **₹34,300 crore over seven years**. It aims to secure supply chains, reduce import dependence, and promote self-reliance.

2. **Identification of priority minerals:** A committee formed by the Ministry of Mines in November 2022 **identified 30 critical minerals, with 24 included in Part D of Schedule I of Mines and Minerals Development and Regulation Act, 1957 (MMDR Act, 1957)**. The focus is on boosting domestic production and ensuring long-term availability.

3. **Strengthening exploration and research capacity:** The **Geological Survey of India** has been assigned **1,200 exploration projects**, including offshore mining. Over the last three years, **368 critical mineral exploration projects** have been undertaken.

4. **Role of KABIL in overseas assets:** Khanij Bidesh India Limited is central to India's overseas strategy. It supports exploration, asset acquisition, and long-term supply agreements in mineral-rich countries.

An Assessment of India's Global Partnerships in Critical Minerals

1. **Australia as a reliable upstream partner:** Australia offers political stability and large reserves. Under the **India-Australia Critical Minerals Investment Partnership**, five lithium and cobalt projects were identified in 2022 for potential investment.

2. **Japan's institutional and resilience-based model:** Japan follows long-term planning through diversification, stockpiling, recycling, and research. Cooperation now extends to joint extraction, processing, and stockpiling, including in third countries.

3. **Africa's resource base and value-creation demand:** Agreements with **Namibia for lithium, rare earths, and uranium**, and talks with **Zambia for copper and cobalt**, show India's shift towards Africa. Long-term industrial engagement is necessary to stay competitive.

4. United States as a technology but unstable partner: Cooperation with the U.S. remains limited due to tariffs, shifting trade rules, and incentives under the Inflation Reduction Act. Initiatives such as the **Transforming the Relationship Utilizing Strategic Technology (TRUST)** and the **Strategic Minerals Recovery** Initiative propose frameworks for joint work on rare-earth processing, **battery recycling, and clean separation technologies**, but policy volatility remains a challenge.

5. European Union's standards-driven approach: The EU's Critical Raw Materials Act links regulation, sustainability, and industry. India must align with **transparency, lifecycle standards, and environmental norms** to deepen cooperation.

6. West Asia's midstream potential: The UAE and Saudi Arabia are investing in refining, battery materials, and green hydrogen. West Asia can serve as a **processing hub** for minerals sourced elsewhere.

7. Russia as a diversification option: Russia has large reserves of rare earths, cobalt, and lithium. Sanctions, financing issues, and logistics limit reliability, making Russia a hedge rather than a base partner.

8. Latin America and Canada as emerging frontiers: India has expanded engagement with **Argentina, Chile, Peru, Brazil, and Canada**. KABIL signed a **₹200 crore agreement with Argentina**. Competition is intense, and long-term presence needs value-chain integration.

Way Forward

1. Value-chain based partner mapping: India should clearly assign roles across the value chain. **Africa, Australia, Canada, and Latin America** for upstream extraction; **Japan and West Asia** for processing; **EU and U.S.** for downstream technology; and **Russia** for diversification.

2. **Implementation of the recommendations of expert committee on critical minerals:** Setting up of the **Centre of Excellence for Critical Minerals (CECM)** as a dedicated wing in the Ministry of Mines. This can be on the lines of CSIRO which is an Australian government corporate entity. The centre of excellence can collaborate with international agencies or Khanij Bidesh India Ltd (KABIL) for the strategic acquisition of foreign assets of these minerals.

3. **Push for expansion of Mineral Security Partnership (MSP):** Along with India, more countries in the Global South can be part of the alliance, especially critical mineral-rich African countries. The MSP can become an international platform that reports on the status and future of critical mineral markets.

4. **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.

5. **Investment in beneficiation and processing facilities:** India should invest in beneficiation and processing facilities in Africa to promote local economies and sustainable relationships.

6. **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.

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

Conclusion

Critical minerals have emerged as a strategic pillar for India's energy transition, economic security, and geopolitical positioning. While India has initiated strong domestic reforms and built a wide network of partnerships, gaps in processing capacity and governance remain. Sustained focus on implementation, value-chain integration, and stable partnerships will determine India's long-term mineral security.

Question for practice:

Discuss how India is addressing critical mineral supply vulnerabilities through domestic initiatives and diversified global partnerships.

Source: [The Hindu](#)

India and the next Kondratiev wave

UPSC Syllabus Topic: GS Paper 3 -Growth and development

Introduction

Long phases of economic change shape global power, production systems, and technology leadership. These phases are driven by clusters of breakthrough technologies that transform how economies function. As the digital economy matures and new frontier technologies converge, another long wave of growth is emerging. India enters this phase with stronger platforms, policy intent, and scale than in previous transitions.

What are Kondratiev Waves?

Kondratiev Waves are long-term cycles of economic growth and slowdown, named after the economist **Nikolai Kondratiev**, who first identified this pattern in the early 20th century. He observed that capitalist economies do not grow in a straight line. Instead, they move in long phases lasting about **40–60 years**, shaped by major technological changes.

Each wave begins when a new set of technologies spreads across the economy, raising investment, jobs, and productivity. As these technologies mature, growth slows, and the economy waits for the next breakthrough.

The **first wave (1780–1830)** was driven by steam power and textile mechanisation.

The **second wave (1830–1880)** centred on railways, coal, and iron.

The **third wave (1880–1930)** grew around electricity, chemicals, and mass production.

The **fourth wave (1930–1980)** was led by automobiles, oil, and petrochemicals.

The **fifth wave (1980–2030)** is based on information technology, computers, and automation.

Countries that adapt early to each wave grow faster and gain economic leadership.

India's Historical Engagement with Kondratiev Waves

1. Limited role in early waves: India remained peripheral during the first three waves driven by steam, railways, electrification, and chemicals. Colonial constraints limited industrial and technological participation.

2. Marginal presence in the fourth wave: The automobile and petrochemical wave reshaped mobility and geopolitics, but India played a limited role and depended on imports and licensed production.

3. Partial gains in the fifth wave: During the IT-led wave, India benefited from software and services exports. However, it did not shape core digital platforms or frontier technologies.

The Sixth Kondratiev Wave

1. Deep technologies as the core: The sixth wave is expected to be driven by artificial intelligence, quantum computing, biotechnology, advanced materials, space systems, and clean energy. These technologies are science-intensive and capital-heavy.

2. Convergence across sectors: Unlike earlier waves, technologies now reinforce each other. AI accelerates drug discovery, materials design, manufacturing optimisation, and climate modelling.

3. Mission-led innovation: This wave is shaped by global challenges such as climate change, health security, and supply-chain resilience. Public platforms, regulation, and long-term coordination matter as much as private enterprise.

India's Emerging Position in the Sixth Wave

1. Digital public infrastructure as a platform: By 2024, the Unified Payments Interface processed about 172 billion transactions, rising to around 228 billion in 2025. It functions as a general-purpose economic rail for payments, credit, and data-driven services.

2. Transformation in the space sector: India's space ecosystem has moved beyond a purely state-led model. With reforms involving ISRO and IN-SPaCe, private firms now participate in launches, satellites, and downstream analytics.

3. Clean energy and green hydrogen: Mission-led coordination has accelerated green hydrogen pilots in manufacturing and mobility. Projects such as electrolyser-based plants and hydrogen-powered train prototypes show movement from policy to execution.

Way Forward

1. Mission-mode coordination across sectors: The sixth wave demands mission-led outcomes rather than isolated innovation. Climate action, health security, energy transition, and supply-chain resilience require coordinated action by the state, science agencies, and industry.

2. Strengthening digital public infrastructure as economic rails: Digital platforms must function like railways and electricity did in earlier waves. India's digital public infrastructure should continue to support payments, data flows, analytics, and AI-driven services across sectors.

3. Institutional alignment of research, capital, and industry: Deep technologies need platforms that translate research into production. The Anusandhan National Research Foundation and the ₹1 lakh crore RDI Fund aim to align frontier science, public funding, and private participation at scale.

4. Ensuring patient capital for long innovation cycles: The sixth wave requires financing that matches long development timelines. Capital must support sustained experimentation rather than seek short-term commercial returns.

5. Building convergence across frontier technologies: Success depends on linking technologies, not treating them separately. AI must accelerate materials discovery, clean energy must integrate with digital grids, and biotechnology must combine data, automation, and manufacturing.

6. Rule-making, standards, and global integration: Leadership in this wave depends on shaping norms. AI safety rules, hydrogen certification standards, quantum security protocols, and medical technology regulations will decide who sets markets and who follows.

Conclusion

The sixth Kondratiev wave is taking shape around deep technologies and mission-led innovation. India now has scale, talent, data, and policy alignment that were absent earlier. If institutions, capital, and regulation stay focused on long cycles, deep technology can become part of national economic infrastructure and strengthen productivity, sovereignty, and global economic influence by 2047.

Question for practice:

Examine how the emergence of the sixth Kondratiev wave creates a structural opportunity for India, and assess the factors that will determine whether India can successfully ride this long phase of technology-led growth.

Source: [Businessline](#)

