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# POLITY & CONSTITUTION

## 1. Revamping the Indian Statistical Institute (ISI): Autonomy vs. Governance Reforms

- **Core Issue and Proposed Change:** The controversy revolves around the Central Government's plan to **repeal the Indian Statistical Institute (ISI) Act, 1959**, and replace it with a new Bill. Academics, including approximately 1,500 petitioners, are protesting, claiming the move will **significantly strip the ISI of its academic autonomy** and alter its functioning. The ISI, founded by **P.C. Mahalanobis** and headquartered in Kolkata, is India's premier statistical research institute.

- **Concerns over Academic Autonomy:** The primary concern is that the proposed Bill allows the **Board of Governors to override the decisions of the Academic Council**, which is the current statutory authority on academic matters. Petitioners argue this severely **undermines academic freedom** and alters the original spirit of the agreement between society and the government.

- **Financial and Administrative Alarms:** Academics raised alarm over new **financial provisions** that emphasize **revenue generation** through student fees and the **commercialisation of research**. They claim this undermines ISI's historical mission focused on the **public good**. Furthermore, the petitioners warned that the Bill allows the **relocation of the institute's headquarters from Kolkata**, disturbing its historical establishment.

- **Constitutional and Legal Provisions/Key Principles:** The protests invoke the principle of **Cooperative Federalism**, arguing the move disturbs the relationship between the Centre and the state-based institute (ISI is an Institute of National Importance). Legally, the issue touches upon the degree of **institutional autonomy** granted to academic bodies under the original Act versus the proposed control under the new Bill. The push for change aligns with recent government focus on **governance reforms** in higher education.

> ### Indian Statistical Institute (ISI) – Short Note (UPSC Current Affairs)
>
> **Indian Statistical Institute (ISI)** is a premier public research institution of India, renowned for excellence in **statistics, mathematics, economics, computer science, and data science**. It plays a critical role in strengthening India's statistical and policy ecosystem.
>
> **Key Facts:**
> - **Established:** 1931
> - **Founder:** P.C. Mahalanobis
> - **Headquarters:** Kolkata
> - **Status:** *Institute of National Importance* (by Act of Parliament, 1959)
> - **Ministry:** Ministry of Statistics and Programme Implementation (MoSPI)
>
> **Core Functions:**
> - Advanced **research and training** in statistics and allied disciplines
> - Development of **official statistics** and statistical methodologies
> - Capacity building for **government departments and public policy**
> - Advisory role in **survey design, census, national accounts, and data analysis**
>
> **National Importance:**
> - Backbone of India's **statistical system**
> - Supports **evidence-based policymaking**
> - Contributes to **data-driven governance** in the era of Big Data and AI
>
> **Recent Relevance (Current Affairs Angle):**
> - Increasing role in **data analytics, AI, and national surveys**
> - Alignment with **Digital India** and **data governance reforms**

- **Government's Stated Rationale (Mashelkar Committee):** The Ministry of Statistics and Programme Implementation noted that the Bill follows the recommendations of the **R.A. Mashelkar Committee (2020)**. This committee had recommended "major reforms" to **strengthen governance**, expand academic programs, and make the institute **globally competitive**, suggesting the Bill is an effort toward modernizing the ISI's structure.

**Conclusion & UPSC Relevance**

The move to revamp the ISI highlights the persistent tension between the government's need for **modernizing governance** and the demands of academic institutions for **unfettered academic and operational autonomy**. The proposed shift from a public good mission to a revenue-generating model is a critical debate in Indian higher education policy.

## 2. Karnataka's Reservation Conundrum: Judicial Scrutiny and the 50% Cap

- **Breaching the 50% Cap:** The core of the issue stems from the **Karnataka Scheduled Caste (SC) and Scheduled Tribe (ST) Act, 2022**. This State legislation raised the reservation quota for **SCs from 15% to 17%** and for **STs from 3% to 7%**. This increase, coupled with existing quotas, took the state's total reservation to **56%**, thus **breaching the 50% ceiling** mandated by the Supreme Court in the landmark **Indira Sawhney case (1992)**.

- **Judicial Intervention and Recruitment Stall:** The implementation of the 2022 Act has been challenged via Public Interest Litigations (PILs) in the **Karnataka High Court**. The High Court recently restricted the State government from issuing **any fresh recruitment notifications** under the increased quota for now. This judgment has put the future of thousands of public service aspirants in limbo and stalled public recruitments.

- **Definition: Indira Sawhney Judgement (1992):** This landmark Supreme Court case upheld the reservation for Other Backward Classes (OBCs) but established the principle that the total percentage of reservation for backward classes **must not exceed 50%**. This ceiling is considered essential for maintaining the balance between affirmative action and the principle of **Equality of Opportunity** (Article 16).

- **The Internal Reservation Challenge:** Separately, the government has been dealing with the issue of **internal reservation** for SCs. Following the report of the one-man commission headed by retired Justice **H.N. Nagmohan Das**, the government modified and accepted a proposal for sub-categorisation within the 17% SC quota to ensure **equitable distribution of benefits** among the most deprived sub-groups. Public recruitment was stalled for a year awaiting this report, compounding the current employment crisis.

- **Constitutional and Legal Provisions:** The controversy involves **Article 16(1) and 16(4)** (Equality of opportunity in public employment and special provision for backward classes) and the **9th Schedule** of the Constitution. States exceeding the 50% limit often attempt to place their laws in the 9th Schedule to shield them from judicial review, a strategy Tamil Nadu used for its 69% quota. The Supreme Court has ruled in the past that laws under the 9th Schedule are not immune to judicial review if they violate the **Basic Structure** of the Constitution.

**Conclusion & UPSC Relevance**

Karnataka's reservation saga is a classic example of the legal and political complexities surrounding affirmative action in India. It highlights the conflict between **societal demands for proportional representation** (justified by increasing population of disadvantaged groups) and the **constitutional mandate of the 50% ceiling** (aimed at protecting equality of opportunity for all). For UPSC, this topic is critical for **GS-II (Polity and Governance)**, directly dealing with **Fundamental Rights (Article 16)**, **Judicial Review**, the concept of the **Basic Structure Doctrine**, and the debate on **Reservation Policy**. It serves as a case study for the judicial-executive tussle over breach of the $50\%$ quota limit.

# 3. Supreme Court Recalls Ban on *Ex Post Facto* Environmental Clearances (CREDAI vs. Vanashakti)

- **Context of Judicial Reversal:** On November 18, 2025, the Supreme Court of India, in a **2:1 majority verdict** (Justice Ujjal Bhuyan dissenting), reviewed and **recalled its earlier May 2025 judgment** (*Vanashakti*) which had declared notifications permitting **ex post facto Environmental Clearances (ECs)** illegal. The earlier judgment had struck down the Ministry of Environment, Forest and Climate Change's **2017 Notification** and **2021 Office Memorandum** that allowed for retrospective ECs.

- **Definition: *Ex Post Facto* Environmental Clearance (EC):** An *ex post facto* or retrospective EC is a clearance granted to a project **after it has already commenced construction or operation** without the legally mandated **prior environmental clearance**. The foundational document for this requirement is the **Environment Impact Assessment (EIA) Notification, 2006**, issued under the **Environment (Protection) Act, 1986**.

- **Rationale for the Review/Recall (Majority View):** The majority recalled the ban on the grounds that the initial judgment **misinterpreted binding precedents** that had previously allowed *ex post facto* ECs in **exceptional circumstances** (e.g., *Alembic Pharmaceuticals* and *Electrosteel Steels* cases). The primary justification cited was the **"public interest"** and the need to prevent the **demolition of completed or near-completion projects**, which would result in the loss of thousands of crores of public investment and wasted resources.

- **The Dissent and Environmental Jurisprudence:** The strong dissenting opinion, led by Justice Ujjal Bhuyan, emphasized that retrospective ECs are an **"anathema"** to environmental law, as they violate the **Precautionary Principle**—a cornerstone of Indian environmental jurisprudence. Allowing non-compliance to be regularised through fines creates a **"pay and legalise"** system, rewarding unlawful conduct and dismantling the statutory requirement of **prior environmental scrutiny** and **public consultation**.

- **Constitutional and Legal Provisions:** The controversy fundamentally involves the **Right to a Clean and Healthy Environment**, which the Supreme Court has interpreted as an integral part of the **Right to Life** guaranteed under **Article 21** of the Constitution. It also touches upon the **Fundamental Duty** to protect and improve the natural environment under **Article 51A(g)**. The recall is seen as potentially weakening the deterrence mechanism established by the EIA regime.

## Conclusion & UPSC Relevance

The Supreme Court's decision to recall its ban on *ex post facto* ECs reopens a critical debate on balancing **developmental needs (protecting investments)** with **environmental sustainability and the Rule of Law**. It creates legal uncertainty by restoring the issue for a fresh hearing and highlighting a tension between the **Precautionary Principle** (prevent harm first) and **pragmatic governance/economic expediency**.

# 4. Nithari Acquittals: Exposing Systemic Failures in Criminal Justice

**Key Failures Revealed by the Acquittals**

- **Failed Prosecution, Not Clean Acquittal:** The Supreme Court's acquittal of Surinder Koli in the last case, following the earlier acquittal of Mohinder Singh Pandher, highlights a **"failed prosecution"** due to **tainted or insufficiently collected evidence**, rather than definitive proof of innocence. This constitutes a **"double injustice"**—to the accused and the victims.

- **Secondary Victimisation of the Accused:** Individuals like Koli (19 years) and Pandher (14 years) suffered prolonged **wrongful incarceration as undertrials** due to investigative failures. India **lacks a statutory framework** to compensate those wrongly prosecuted, with the Law Commission's recommendation for compensation remaining unimplemented.

- **Denial of Justice to Victims:** The acquittal, without any direction for a **fresh or independent investigation**, results in the **absolute denial of truth, accountability, and closure** for the victims' families. The system's focus on the accused allows the actual perpetrator to remain unidentified (e.g., the Anokhilal parallel).

- **Absence of Accountability and Oversight:** The underlying failure is the **lack of accountability** for investigative officers, forensic experts, and prosecution officers who make grave errors (losing evidence, relying on unscientific methods, building fragile cases) without facing repercussions.

- **Non-implementation of Law Commission Report:** The failure to implement the **Law Commission of India's 277th Report**, which recommended a **statutory compensation scheme** for wrongful prosecution, perpetuates injustice for those whose lives are erased by a flawed system.

**Important Keypoints & Definitions**

- **Undertrial:** A person who is currently being tried in a court of law for a crime but has not yet been convicted or acquitted. Undertrials form a significant portion of India's prison population.

- **Failed Prosecution:** A case where the state (prosecution) is unable to prove guilt beyond a reasonable doubt, often due to poor investigation, tainted evidence, or procedural lapses, leading to acquittal.

- **Secondary Victimisation:** The injustice suffered by an accused person due to the flaws and delays of the criminal justice system (like long incarceration and stigma) even if they are ultimately acquitted.

- **Law Commission of India's 277th Report:** This report specifically dealt with the issue of **Wrongful Prosecution (Miscarriage of Justice)** and recommended a comprehensive legal framework for mandatory compensation to victims of wrongful incarceration.

**Constitutional & Legal Provisions**

- **Article 21 (Right to Life and Personal Liberty):** Wrongful prosecution and prolonged incarceration directly infringe upon the accused's **Right to Personal Liberty** under Article 21. Furthermore, the victims' right to justice and a fair investigation is also implicitly linked to this Article.

- **Section 482 of CrPC (Saving of inherent powers of High Court):** Though often used for quashing FIRs or proceedings, the High Courts have broad inherent powers to ensure the ends of justice are met. The failure to direct a fresh investigation in cases where the accused are acquitted on procedural grounds is a missed opportunity to use these powers to pursue the actual perpetrator.

- **Unlawful Activities (Prevention) Act (UAPA):** Cited as a stringent special law where the threshold for bail is extremely high, leading to prolonged incarceration of undertrials even before conviction, exacerbating the problem of wrongful prosecution.

**Conclusion and UPSC Relevance**

The Nithari acquittals are a searing indictment of the systemic weaknesses within India's criminal justice system, revealing that merely meeting **procedure** (acquitting on insufficient evidence) does not equate to delivering **justice** (identifying the perpetrator and compensating the wrongly accused). The lack of accountability for investigative and prosecution failures, coupled with the non-implementation of the Law Commission's recommendation for statutory compensation, highlights a critical gap in constitutional governance. Reforming the criminal justice system must prioritize **truth-finding, procedural rigour**, and establishing a robust **framework for accountability** across all agencies.

## 5. Citizenship (Amendment) Act (CAA) and Judicial Scrutiny

- **Core Provision of CAA, 2019:** The Citizenship (Amendment) Act, 2019, amended the **Citizenship Act, 1955**, to make specific religious minorities—Hindus, Sikhs, Buddhists, Jains, Parsis, and Christians—who fled religious persecution from **Pakistan, Afghanistan, and Bangladesh** eligible for Indian citizenship. The cut-off date for entry into India was set as **December 31, 2014**.

- **Supreme Court's Clarification on Conferment of Rights:** The Supreme Court (SC) bench orally clarified that the conferment of rights associated with Indian citizenship under the CAA is **wholly dependent on the verification of claims**. The court emphasized that while the CAA introduces changes in favor of granting "enforceable rights" to persecuted minorities, every claim must be **enquired into and verified by the authorities** before citizenship is granted.

- **Definition of Citizenship: Citizenship** is the status of being a legal member of a country, conferring certain rights (like the right to vote, right to contest elections, right to hold public office) and duties, and is primarily governed by **Part II (Articles 5-11)** of the Indian Constitution and the **Citizenship Act, 1955**.



Fear of statelessness

Key issues raised in the petition regarding persecuted minorities from Afghanistan, Bangladesh and Pakistan

- The delay in issuing citizenship certificates, combined with the non-recognition of acknowledgment receipts during the ongoing Special Intensive Revision (SIR), has created a "serious constitutional crisis"
- The affected persons — recognised by Parliament as deserving protection and integration — are now exposed to the risk of statelessness, social exclusion, and disenfranchisement
- The acknowledgment receipt generated upon online submission of an application for a certificate of naturalisation must be treated as valid provisional proof of pending citizenship determination, at least for the SIR

A file picture of Bangladeshi Hindus arriving at a village in West Bengal. REUTERS

- **Context of Electoral Rolls and Statelessness Fear:** The SC observations came in response to a petition concerning people, particularly those who fled Bangladesh, who feared that the ongoing **Special Intensive Revision (SIR) of electoral rolls** would render them stateless before their CAA application status is finalized. The SC stated that citizenship is **not automatically granted** and applicants must fulfill conditions before applying for inclusion in the voters' list.

- **Constitutional and Legal Provisions:**

  o **Constitutional: Article 11** grants Parliament the power to regulate the right of citizenship by law. This power was exercised to enact the Citizenship Act, 1955, and subsequently amend it via the CAA, 2019.

  o **Legal: Section 6B** (Special Provisions as to Citizenship of Persons Covered by the Assam Accord) and **Section 6B(3)** (The CAA insertion) in the Citizenship Act, 1955, govern the grant of citizenship to these specific groups, overriding the standard 11-year residency requirement.

**Conclusion**

The Supreme Court's stance reinforces that the CAA, while providing a specific pathway to citizenship, operates through a **due legal process of verification**. Key takeaways include understanding the **statutory basis of citizenship (Citizenship Act, 1955)**, the constitutional provision allowing Parliament to regulate it (**Article 11**), the specific targeted groups and countries under the CAA, and the critical importance of the **verification mechanism** in the conferment of citizenship rights and inclusion in democratic processes (like electoral rolls).

# 6. Ladakh's Demand for Constitutional Safeguards

- **The Core Issue: Post-2019 Political Vacuum:** After the reorganization of Jammu & Kashmir in 2019, Ladakh was made a **Union Territory (UT) without a legislature**, leading to a perceived deficit in **local political autonomy** and governance. The region, with over **97% Scheduled Tribe (ST)** population, now fears the loss of control over land, resources, and local employment to external commercial and demographic changes.

- **Key Demands of the Leh Apex Body (LAB):** The LAB (an amalgam of socio-religious bodies in Leh, often collaborating with the Kargil Democratic Alliance-KDA) is spearheading a movement focused on two principal demands: **Statehood for Ladakh** and **inclusion under the Sixth Schedule of the Indian Constitution**. The fresh draft proposal seeks public input to emphasize transparency and inclusiveness in presenting the UT's issues to the Ministry of Home Affairs (MHA).



- **Definition and Relevance of Sixth Schedule:** The **Sixth Schedule** (under **Article 244**) provides for the administration of tribal areas in Assam, Meghalaya, Tripura, and Mizoram by establishing **Autonomous District Councils (ADCs)**.

  - **Why Ladakh Demands It:** Inclusion would grant ADCs legislative, executive, and judicial powers over subjects like **land, forests, village administration, and social customs**, thus constitutionally protecting the unique culture, demography, and fragile ecology of the high-altitude region.

- **Contradictory Local Aspirations and Strategic Imperative:** While the LAB/KDA demand Statehood and Sixth Schedule status, there are contradictory voices, such as the civil society group from Zanskar, which has opposed the demand for Statehood and additional Lok Sabha seats. Furthermore, the Central Government often views Ladakh's strategic location (bordering China and Pakistan) as necessitating **direct central control** for defense, security, and quick infrastructure development.

- **Judicial Probe and Addressing Violence:** In the backdrop of the political movement, the LAB is actively engaging with the judicial commission (headed by Justice (retd.) B.S. Chauhan) inquiring into the violence and the killing of four civilians during the September 24 protests. This focus on **judicial accountability and justice** for those affected by security force action is a critical component of the political trust-building process.

- **Constitutional Basis and Policy Context:**

  - **Constitutional:** The demand necessitates either a constitutional amendment to extend the **Sixth Schedule** to a non-Northeast region or a special legal provision under **Article 371** tailored for Ladakh (as reportedly offered by the Centre).

  - **Policy Context:** This issue highlights the challenge of balancing local **democratic aspirations** and the need for constitutional safeguards (given the high tribal population) against the **national strategic imperatives** of a sensitive border region.

## Conclusion

The ongoing consultation by the Leh Apex Body underscores the deepening constitutional and political crisis in Ladakh post-2019, revolving around the core themes of **autonomy, identity, and representation**. Key areas of focus include the purpose and mechanism of the **Sixth Schedule**, the challenges of extending it to a strategically sensitive region, and the role of civil society groups in articulating demands for greater **local self-governance** in a Union Territory without a legislature.

# 7. KARNATAKA SOCIAL BOYCOTT (PREVENTION, PROHIBITION AND REDRESSAL) BILL 2025

## Key Points

- Karnataka has tabled the **Social Boycott (Prevention, Prohibition and Redressal) Bill 2025** to criminalise and prevent acts of social boycott by individuals, groups, or caste panchayats.

- The Bill aims to curb discriminatory practices that deny individuals or families their social, economic, religious, and community rights, thereby strengthening social justice and constitutional equality.

- **Punishment:** Social boycott is made a criminal offence punishable with **imprisonment up to 3 years**, or **fine up to ₹1 lakh**, or both.

- The Bill specifies **20 forms of social boycott**, including refusal to engage in business or employment, denial of access to services or contract opportunities, blocking access to facilities, preventing participation in community or religious events, and any form of social ostracism.

- Provisions include the appointment of a **Social Boycott Prohibition Officer**, mechanisms for **victim compensation**, and procedures to handle complaints and ensure timely redressal.

- The legislation seeks to dismantle parallel extra-constitutional bodies such as **caste panchayats**, which often impose unlawful, coercive, and discriminatory sanctions on individuals.

## Important Definitions

- **Social Boycott:** Any action that restricts a person or group from participating in social, economic, religious, or community life due to caste, community norms, personal choices, or other grounds.

- **Caste Panchayat:** An informal, caste-based body that enforces traditional norms and imposes punitive measures; such bodies operate outside the constitutional framework.

- **Ostracism:** Exclusion or expulsion from social interactions or community life, often used as a coercive tool to regulate behaviour.

## Constitutional & Legal Provisions

- **Article14:** Guarantees equality before law; social boycott violates equality and justice principles.

- **Article15(1) & 15(2):** Prohibit discrimination on grounds of caste, religion, sex, etc.; the Bill reinforces these protections.

- **Article17:** Abolishes untouchability; social boycott is a modern form of discrimination resembling untouchability practices.

- **Article21:** Protects dignity and personal liberty; social boycott undermines both.

- **Article38 & 46:** Direct the State to promote social justice and protect weaker sections from exploitation.

- **Comparison:** Similar legislation exists in Maharashtra— **Maharashtra Protection of People from Social Boycott Act 2016**, indicating a growing trend towards regulating caste-based coercion.

**KARNATAKA SOCIAL BOYCOTT (PREVENTION, PROHIBITION, AND REDRESSAL) BILL 2025**

**Additional Key Points for UPSC**

- The Bill aligns with national efforts to combat caste discrimination, honour-based coercion, and parallel justice systems.

- Social boycotts often impact access to livelihoods, public goods, education, and community participation—core aspects of human development.

- Criminalising social boycott strengthens **rule of law**, preventing vigilante decision-making by informal institutions.

- The Bill contributes to broader debates on **social reform, caste dynamics, decentralised justice systems**, and State intervention in community practices.

**Conclusion**

The Karnataka Social Boycott (Prevention, Prohibition and Redressal) Bill 2025 represents a significant step towards eliminating discriminatory, coercive, and unconstitutional practices imposed by collective community bodies. By criminalising social boycott and empowering victims with redressal mechanisms, the Bill fortifies constitutional rights, promotes dignity, and reinforces the principle of an egalitarian society.

## 8. The SHANTI Bill, 2025 and Nuclear Sector Reform

- **Aim and Replacement:** The **Sustainable Harnessing and Advancement of Nuclear energy for Transforming India (SHANTI) Bill, 2025** is introduced to replace and consolidate the **Atomic Energy Act, 1962** and the **Civil Liability for Nuclear Damage (CLND) Act, 2010**. The primary aim is to incentivize **private sector participation** (both Indian and foreign) in nuclear power production to accelerate capacity addition.

- **Opening the Sector:** The Bill ends the decades-old monopoly of the Department of Atomic Energy (DAE)/NPCIL, allowing private companies, joint ventures, and public-private partnerships to **make, own, and operate** nuclear power plants. Private entities can also participate in the nuclear value chain, including **exploration, fuel fabrication, and equipment manufacturing**.

- **Reform of Nuclear Liability:** The Bill overhauls the contentious liability regime by **restricting the operator's right of recourse against the supplier** (a key bottleneck under CLND Act, 2010), thus protecting foreign and domestic equipment suppliers. It introduces **graded liability caps** for

operators based on plant size and establishes a **Nuclear Liability Fund** for government backstop compensation.

- **Institutional and Regulatory Changes:** The SHANTI Bill proposes to grant **statutory status to the Atomic Energy Regulatory Board (AERB)**, ensuring greater regulatory independence and aligning India with international nuclear safety norms (IAEA). It also proposes a **dedicated Nuclear Tribunal** for dispute resolution.

- **Focus on Scale and Technology:** The Bill is crucial for achieving India's ambitious target of **100 GW nuclear capacity by 2047** (up from $\sim$8.8 GW currently). It specifically promotes the research, development, and deployment of **Small Modular Reactors (SMRs)**, which are central to India's clean energy transition.



- **Strategic Core Control Retention:** While opening up generation and associated activities, the Bill **retains Central Government control** over sensitive and critical activities like the enrichment and isotopic separation of radioactive substances, management and reprocessing of spent fuel, and production of heavy water.

## Key Definitions & Concepts
- **Atomic Energy Act, 1962:** The primary law governing the use of atomic energy for the welfare of the people of India and for other peaceful purposes; it established the Central Government's monopoly over nuclear power.

- **Civil Liability for Nuclear Damage (CLND) Act, 2010:** Established a no-fault liability regime for nuclear damage victims but contained controversial provisions (Section 17(b)) allowing the plant operator a **"Right of Recourse"** against the equipment supplier, which deterred foreign investment.

- **Small Modular Reactors (SMRs):** Advanced nuclear reactors designed to be smaller (typically $<300$ MWe), factory-built, and modular, allowing for easier, faster, and more flexible deployment.

## Constitutional & Legal Provisions
- **Entry 6 (Union List, Seventh Schedule):** Grants the Union Government exclusive power to legislate on **"Atomic energy and mineral resources necessary for its production."** This ensures the Centre's overarching control in this strategic sector.

- **Convention on Supplementary Compensation for Nuclear Damage (CSC), 1997:** An international treaty aiming to establish a global nuclear liability regime and ensure adequate compensation for victims. The SHANTI Bill seeks closer alignment with CSC by limiting supplier liability.

## Additional Important Keypoints
- **Energy Security and Net-Zero Goal:** The move is a strategic step to secure **baseload, low-carbon power** needed for India's growing economy and to meet its commitment of **Net-Zero emissions by 2070**. Nuclear power complements intermittent renewable sources.

- **Financial Model:** Private players will primarily **finance** the projects and will likely receive assured long-term captive power supply, while NPCIL/Central Government may **retain ownership and operational control** in certain models, especially for large plants.

- **Investment Attraction:** The relaxation of supplier liability, alongside the provision for **up to 49% FDI** in certain nuclear activities, is designed to attract high-value foreign investment and technology transfer, particularly from the US, France, and Russia.

**Conclusion**

The SHANTI Bill, 2025, represents a landmark policy and legislative pivot, transforming India's tightly controlled nuclear power sector from a state monopoly to one involving significant private and foreign participation. This shift is vital for achieving India's aggressive nuclear capacity targets and clean energy goals. However, the success of the reform hinges on effectively balancing the need for massive private investment (requiring relaxed liability norms) with paramount concerns of public safety, environmental protection, and strategic control over sensitive core functions.

## 9. The Repealing and Amending Bill, 2025: Cleaning the Legal Statute

- **Comprehensive Legal Purge:** The Lok Sabha and Rajya Sabha have passed the **Repealing and Amending Bill, 2025**, which targets **71 obsolete Acts** for removal or amendment. This is part of a larger ongoing project under which **1,577 redundant laws** have been repealed since 2014 to streamline the Indian legal system.

- **Targeting Colonial Imprints:** A key objective of the Bill is to dismantle the "colonial mindset" by repealing laws that have lost relevance in modern India. Notable examples include the **Indian Tramways Act, 1886**, and discriminatory provisions within the **Indian Succession Act, 1925**, regarding the validation (probate) of wills.

- **Types of Acts Repealed:** Of the 71 Acts, **65 are Amendment Acts** whose changes have already been integrated into principal legislations, making their separate existence redundant. The remaining are **Principal Acts** like the *Levy Sugar Price Equalisation Fund Act, 1976*, which no longer serve a functional purpose.

- **Correcting Drafting Errors:** The Bill serves a corrective function by rectifying technical and formal defects in existing laws. For instance, it amends the **Disaster Management Act, 2005**, to replace the word "prevention" with "preparation" in specific sub-sections to better reflect operational realities.

- **Updating Terminologies:** It amends the **General Clauses Act, 1897**, and the **Code of Civil Procedure, 1908**, to modernize terminologies related to "registered posts" and other administrative communications, ensuring they align with contemporary postal and digital standards.

- **Ease of Living & Governance:** By reducing the "compliance burden" (calculated at over 40,000 items in the last decade), the legislation aims to improve the "Ease of Living" for citizens and "Ease of Doing Business" for enterprises by removing legal traps and procedural clutter.

**Key Definitions**

- **Obsolete Law:** A statute that is no longer used, has lost its practical utility, or has been superseded by more recent and comprehensive legislation.

- **Amendment Act:** A law passed specifically to change, add to, or omit parts of an existing (Principal) Act. Once these changes are merged into the original law, the Amendment Act itself becomes a "dead letter."

- **Probate:** The official proving of a will in court. The 2025 Bill removes the requirement for probate in certain cases to eliminate discriminatory community-based legal hurdles.

- **Jan Vishwas Approach:** A governance philosophy focused on decriminalizing minor procedural lapses and shifting from criminal penalties to civil fines to build trust between the state and citizens.

## Constitutional and Legal Provisions

- **Article 245:** Grants Parliament the power to make laws for the whole or any part of the territory of India, which implicitly includes the power to repeal them.

- **General Clauses Act, 1897:** The "law of all laws" in India, which provides the standard definitions and rules for interpreting and repealing central acts. Section 6 of this Act ensures that a repeal does not revive anything not in force at the time or affect rights already acquired.

- **Law Commission of India (248th to 251st Reports):** These reports provided the foundational recommendations for identifying "redundant" laws that clog the justice delivery system.

- **Seventh Schedule (Union List):** Most laws being repealed fall under the Union List, where Parliament has exclusive jurisdiction.

## Conclusion

The passage of the **Repealing and Amending Bill, 2025**, marks a persistent effort toward "legal hygiene." By scrubbing 71 redundant statutes, the government is not just simplifying the India Code but also reinforcing the principle of **"Minimum Government, Maximum Governance."** While critics argue over the speed of such repeals, the removal of colonial-era baggage and technical errors is a necessary step toward making the law more accessible and less intimidating for the common citizen.

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# ECONOMY

## 1. India's Critical Minerals Strategy: Focusing on Processing and Refining

- **The Missing Link: Processing and Refining:** The core challenge for India in critical minerals is the **midstream segment** of the value chain—**processing and refining**. India predominantly exports raw ores and imports high-purity refined materials (like lithium, cobalt, and nickel) essential for clean energy, electronics, and defense. This dependence exposes domestic supply chains to geopolitical shocks, especially from countries like China, which controls over **90% of global rare earths refining**.

- **Definition: Critical Minerals:** These are mineral resources essential for a country's **economic development and national security**, where the supply chain is vulnerable to disruption due to scarcity or concentration of extraction/processing in a few geographical locations. They are vital inputs for **green technologies** (EVs, solar panels, wind turbines) and high-tech industries.

- **Government Initiatives: REPM Scheme and NCMM:** The Union Cabinet has launched a **₹7,280 crore Scheme to Promote Manufacturing of Sintered Rare Earth Permanent Magnets (REPM)**, targeting **6,000 MTPA** of integrated capacity. This scheme, along with the broader **National Critical Mineral Mission (NCMM)** (outlay of **₹34,300 crore**), aims to achieve self-reliance across the entire value chain from exploration to recycling, with a key focus on domestic processing and technology.

- **Five-Point Strategy for Processing Capacity:** To overcome the refining gap, India must focus on: 1) Converting **Centres of Excellence** under NCMM into innovation engines for applied research on high-purity processing; 2) **Unlocking secondary resources** (e.g., recovering rare earths from coal fly ash, cobalt from zinc residues) through pilot projects; 3) **Training and upskilling** a new generation of process metallurgists; 4) **De-risking investment** through government demand assurance (stockpiling, mandatory domestic sourcing); and 5) **Linking mineral diplomacy** to processing capacity by inviting foreign co-investment in Critical Mineral Processing Parks.



- **Legal & Policy Framework:** The government has amended the **Mines and Minerals (Development and Regulation) Act (MMDR) of 1957** and included 24 critical minerals in the First Schedule, giving the Centre exclusive auctioning rights. This is aimed at boosting domestic exploration, but policies like the REPM scheme and the proposed recycling scheme are necessary to address the value-addition deficit. The new **G-20 Framework on Critical Minerals** also emphasizes value creation through refining.

### Conclusion & UPSC Relevance

India's renewed push, led by the **₹7,280 crore Rare Earth Magnet Scheme**, represents a strategic shift from merely focusing on mining (digging) to mastering **processing and value addition** (refining) in the critical minerals sector. This is a matter of **economic security, energy transition, and strategic autonomy**.

## 2. Fugitive Economic Offenders (FEOs): Magnitude of Bank Frauds and Recovery

### Context

Large-scale bank frauds involving high-value economic offenders who flee the country have posed serious challenges to India's banking system and rule of law. To address this, India enacted a dedicated legal framework to deter such offenders and enable faster recovery of assets.

### Who is a Fugitive Economic Offender (FEO)?

A **Fugitive Economic Offender (FEO)** is an individual:

- Against whom an **arrest warrant** has been issued for a **scheduled economic offence involving ₹100 crore or more**, and
- Who has **left India to avoid criminal prosecution** or **refuses to return** to face trial.

This definition is provided under the **Fugitive Economic Offenders Act, 2018 (FEOA)**.

### Magnitude of Default and Recovery Status

- **Number of FEOs:** As of *31 October 2025*, **15 individuals** have been declared FEOs.
- **Total dues:** Nine major FEOs involved in large-scale frauds owe **over ₹58,000 crore** to public sector banks (principal + interest).
- **Amount recovered:** More than **₹19,000 crore**, i.e. ~**33% of total dues**.
- **Interest burden:** Interest alone exceeds **₹31,000 crore**, indicating how liabilities balloon with prolonged litigation and delays.

**Key FEO Cases and Banking Exposure**

- High-profile cases include **Vijay Mallya** (Kingfisher Airlines), the Sandesara family (Sterling Group), and **Nirav Modi** (PNB scam).
- **Bank-wise exposure:**
  - **State Bank of India** had the **largest exposure** and achieved the **highest recovery rate (~52%)**, mainly due to effective liquidation in the Mallya case.
  - **Punjab National Bank** and **Bank of India** followed in exposure.
  - Recovery in cases such as Nirav Modi remains **in single digits**, reflecting enforcement and extradition challenges.

**Legal Framework: Fugitive Economic Offenders Act, 2018**

The FEOA was enacted to **deter willful defaulters from evading Indian jurisdiction** and to strengthen asset recovery.

**Key Provisions:**

- **Non-conviction-based confiscation:**
  Special Courts (under PMLA) can confiscate **all properties of an FEO**, including **benami and overseas assets**, even **before conviction**, and vest them in the Central Government.
- **Disbarment from civil claims:**
  Declared FEOs and their associated companies may be **barred from filing or defending civil cases** in Indian courts.

**Strategic Relevance and Challenges**

**Relevance:**

- Strengthens efforts to tackle **willful defaults** and improve the **financial health of public sector banks**.
- Addresses the **NPA crisis** arising from large corporate frauds.
- Enhances deterrence against **white-collar crime**.

**Challenges:**

- **Slow extradition processes**, often constrained by bilateral treaties and foreign legal systems.
- **Complex asset confiscation**, especially where **third-party or secured creditor rights** are involved.
- Prolonged litigation reducing the **effective recovery value**.

**Conclusion**

- The FEO experience highlights the persistent challenge of high-value financial crime and its direct impact on India's banking sector and economic stability. The **Fugitive Economic Offenders Act, 2018** represents a major legislative step towards accountability and deterrence, though its success ultimately depends on faster extradition, efficient asset liquidation, and robust international cooperation.

## 3. Fiscal Federalism and Conditional Grants: The Samagra Shiksha Dispute

- **Conditional Release of Central Funds:** The Union Education Minister reiterated that the release of the Central share of funds under the **Samagra Shiksha Scheme** is strictly **conditional** upon States fulfilling scheme norms. These conditions include the timely submission of **Utilisation Certificates (UCs)**, audit reports, physical and financial progress reports, and payment of the State's own contribution.
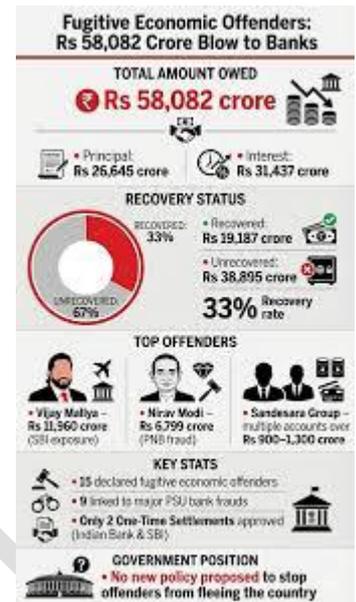
- **Definition: Centrally Sponsored Scheme (CSS):** Samagra Shiksha is a CSS, meaning it is implemented by the State Governments but largely funded by the Central Government, typically in a **60:40 ratio** (Centre: State) for non-Himalayan States. This cost-sharing structure forms the basis of **Fiscal Federalism** in social sectors, where funds are generally tied to adherence to centrally designed program guidelines.

- **The Alleged Linkage with NEP and PM-SHRI:** The key contention raised by some State MPs is the alleged practice of **linking the release of funds** for the 2018 Samagra Shiksha Scheme to the State's **acceptance and implementation of newer Central policies** like the **National Education Policy (NEP) 2020** and the **PM-SHRI** school upgrade scheme (launched in 2022). This is perceived as "arm-twisting" or imposition on States.

- **Constitutional Angle: Centre-State Tensions in Education:** Education is placed under the **Concurrent List** (**Article 246** and **Seventh Schedule** of the Constitution), giving both the Centre and States powers to legislate. The Centre's use of **conditional grants** to push for the implementation of national policies (like NEP 2020) where a State might prefer its own curriculum (like Tamil Nadu's opposition to the Three-Language Formula and **Jawahar Navodaya Vidyalayas - JNVs**) highlights a perennial tension in **Centre-State relations** and the limits of **Cooperative Federalism**.

- **Supreme Court Intervention and Dialogue:** The Minister referenced a recent Supreme Court observation (in response to a PIL) urging the Union and the Tamil Nadu governments to hold talks regarding the establishment of **JNVs** in the State (Tamil Nadu is the only State yet to adopt JNVs). This points to the judiciary's role in encouraging **dialogue** to resolve disputes arising from federal policy implementation rather than purely prescriptive orders.

**Conclusion & UPSC Relevance**

The Samagra Shiksha funding controversy epitomizes the friction points in India's **Fiscal and Cooperative Federalism**, where the Centre uses its financial leverage (conditional grants) to ensure policy uniformity and adherence to national goals (NEP 2020). The issue is critical for **GS-II (Polity and Governance)**, covering **Centre-State Financial Relations (Articles 275 and 282), Concurrent List issues,** and the political dynamics of **Centrally Sponsored Schemes**. It is also relevant for **GS-II (Social Justice)**, concerning the **Right to Education (RTE) Act, 2009**, and ensuring equitable access to quality education, which is the ultimate goal of the Samagra Shiksha Scheme.

## 4. Integration of Farmer Producer Organizations (FPOs) in National Value Chains

- **Central Sector Scheme & Financial Support (Definition):** The government is actively promoting **Farmer Producer Organizations (FPOs)**—which are legally registered bodies of farmers formed to leverage economies of scale in production and marketing—under the **Central Sector Scheme on Formation and Promotion of 10,000 FPOs**. The scheme provides substantial financial support: **₹18 lakh** for management cost, a matching **equity grant up to ₹15 lakh**, and **credit guarantee up to ₹2 crore** on project loans.

- **Credit & Infrastructure Access:** To ensure financial viability, FPOs are encouraged to avail **collateral-free credit** under the **Credit Guarantee Fund (CGF)** of the scheme (2,583 FPOs covered). Furthermore, significant numbers of FPOs have availed benefits under the **Agriculture Infrastructure Fund (AIF)** (1,590 FPOs) and the **PM Formalisation of Micro Food Processing Enterprises (PM-FME)** Scheme (236 FPOs), aiding in post-harvest management and value addition.

- **Digital Market Linkages:** FPOs are strategically being integrated into major national digital platforms to bypass traditional intermediaries and fetch better prices. Efforts are being made to link them with **e-NAM (National Agriculture Market)** (4,642 FPOs currently linked), **ONDC (Open Network for Digital Commerce)**, and **GeM (Government e-Marketplace)**, facilitating access to wider geographies for both selling produce and buying inputs.



- **Input & Market Facilitation:** The scheme supports FPOs in obtaining essential **input licenses** (seed, fertilizer, and pesticide) and **mandi licenses** to formalize their business activities and strengthen their role in the value chain. Direct **Business-to-Business (B2B) linkages** with the industry and Agri-business organizations are promoted through Melas/Exhibitions and expert webinars to improve bargaining power and secure market access.

- **Constitutional & Legal Provisions:** FPOs are typically registered under the **Companies Act, 2013** (as Producer Companies) or the respective State's **Co-operative Societies Act**. The government's promotional activities align with the **Directive Principles of State Policy (DPSP)**, particularly **Article 48**, which directs the State to organize agriculture on modern and scientific lines, and the overall goal of achieving **social and economic justice** for farmers (Preamble and Article 38).

**Conclusion**

The comprehensive strategy of combining robust financial grants, institutional credit guarantees, and aggressive integration with national digital marketing platforms (e-NAM, ONDC, GeM) is critical to empowering FPOs. This approach transforms small and marginal farmers from mere producers into organized market players, significantly enhancing their incomes, reducing post-harvest losses, and modernizing the agricultural value chain.

## 5. National Mission on Natural Farming (NMNF): Pillars of Sustainable Agriculture

- **Mission Focus and Scale:** The **National Mission on Natural Farming (NMNF)** is a key government initiative implemented as a standalone **Centrally Sponsored Scheme** to promote **chemical-free farming** rooted in agroecological principles. The Mission has achieved significant reach, establishing **17,639 Natural Farming Clusters** and training over **8.79 lakh farmers** across 623 districts, driving a national shift toward sustainability.

- **Knowledge Dissemination & Capacity Building (Definition):** The **Krishi Vigyan Kendras (KVKs)** play a pivotal role as the on-field training and demonstration hub. They train **Community Resource Persons (CRPs)/Krishi Sakhis** and farmers on the package of natural farming practices and the preparation of essential, on-farm bio-inputs like **Beejamrut** (seed treatment) and **Jeevamrut** (microbial soil enhancer), which rely on native cow dung and urine.

- **Quality Assurance and Market Linkage:** To build consumer trust and facilitate market access, an online **Natural Farming Certification System (NFCS)** called **PGS – INDIA- NATURAL** has been developed by the National Centre for Organic & Natural Farming (NCONF). This system is based on the **Participatory Guarantee System (PGS)** model, which is a peer-driven, low-cost, and locally relevant quality assurance system that operates outside third-party certification.


NATIONAL MISSION ON NATURAL FARMING

- **Core Principles of Natural Farming (Keywords):** Natural Farming fundamentally eliminates the use of **synthetic chemical inputs** (fertilizers, pesticides). Its principles (often termed the four pillars) include **Jeevamrut** (bio-input), **Beejamrut** (seed treatment), **Mulching** (soil cover with biomass/residues), and **Waaphasa** (soil aeration/moisture). This method aims to restore soil health, reduce input costs, and improve the climate resilience of farms.

- **Constitutional & Sustainable Development Mandate:** The promotion of Natural Farming directly aligns with India's constitutional obligations. Specifically, **Article 48** (DPSP) mandates the State to organize agriculture on modern and **scientific lines** (interpreted as sustainable and eco-friendly practices), and **Article 48A** (DPSP) directs the State to **protect and improve the environment**. This supports the broader judicial interpretation of **Article 21 (Right to Life)**, which encompasses the right to a clean and healthy environment and the principle of **Sustainable Development**.

**Conclusion**

The NMNF represents a targeted governmental push to embed ecological sustainability into India's agricultural system. By utilizing the KVK network for decentralized knowledge transfer and establishing a robust, farmer-centric certification system (PGS – INDIA- NATURAL), the Mission is effectively de-risking the transition to chemical-free farming and creating a market for climate-resilient, healthy produce.

## 6. India-Russia Bilateral Trade: The Push for National Currency Settlement

- **Strategic Policy Decision (Definition):** India and Russia have agreed to enhance the settlement of **bilateral trade in their national currencies** (Indian Rupee and Russian Rouble). This mechanism, which utilizes **Special Rupee Vostro Accounts (SRVA)** in Indian banks for settlement, aims to ensure the **uninterrupted maintenance of trade** and is a key move towards **de-dollarization** in international commerce.

- **Economic Objectives and Deficit Reduction:** The shift to national currency settlement is primarily driven by two economic goals:

  1. **Reducing Dependence on the US Dollar** and shielding trade from geopolitical pressures (like Western sanctions).

  

  2. **Addressing India's widening trade deficit** with Russia (currently around $\$58.9$ billion, mainly due to oil, gas, and coal imports) by making Indian exports (e.g., pharmaceuticals, textiles, machinery) more competitive in the Russian market.

- **Ambitious Trade Target and Growth Trajectory:** Both sides have reaffirmed the **revised bilateral trade target of $\$100$ billion by 2030**. This growth is underpinned by efforts to remove trade bottlenecks in **logistics, insurance/reinsurance, and payment mechanisms**. PM Modi expressed confidence that this target could be achieved even sooner, driven by "bottom-up" organic business growth.

- **Financial Integration and Digital Systems:** Beyond current currency settlement, the nations agreed to continue consultations on enabling the **interoperability** of their respective **national payment systems** (e.g., India's UPI/RuPay, Russia's Mir), **financial messaging systems** (bypassing SWIFT), and **Central Bank Digital Currency (CBDC)** platforms.

- **Multilateralism and Geopolitical Signalling:** The joint statement re-emphasized the importance of an **"open, inclusive, transparent and non-discriminatory multilateral trade system with the World Trade Organization (WTO) at its core."** This commitment, coming amid global protectionist trends and sanctions, signals India's policy of **strategic autonomy** by prioritizing its long-term Special and Privileged Strategic Partnership (SPSP) with Russia.

- **Constitutional & Legal Provisions:** India's participation in and commitment to international trade is facilitated by its constitutional structure. **Article 51 (DPSP)** mandates the State to endeavor to **"maintain just and honourable relations between nations"** and **"foster respect for international law and treaty obligations."** The operational framework for this trade settlement is governed by the **Foreign Exchange Management Act (FEMA), 1999**, under which the RBI issues directives (like the one allowing the SRVA mechanism) to manage cross-border transactions and promote the internationalization of the Rupee.

**Conclusion**

The agreement to enhance national currency settlements marks a significant step towards insulating India-Russia trade from Western geopolitical pressures and reducing dollar dependency, aligning with India's broader goal of Rupee internationalization. While the $\$100$ billion trade target is ambitious given the current deficit, the focus on digital payment interoperability and resolving logistical barriers demonstrates a robust commitment to deepening the bilateral economic partnership.

## 7. Health Security and National Security Cess Bill, 2025

- **Legislation and Purpose (Definition):** The **Health Security and National Security Cess Bill, 2025**, has been passed by the Lok Sabha to introduce a new **special cess** (a tax levied for a specific purpose) primarily on **pan masala**. The central aim is to create a **"dedicated and predictable resource stream"** to meet expenditure on two domains of national importance: **public health** and **national security**.

- **Mechanism and Levy Base:** The new cess replaces the existing Compensation Cess under the GST framework for pan masala. Critically, the cess will be levied on the **production capacity of the machines** installed or other processes undertaken in pan masala manufacturing factories, instead of conventional excisable goods. This mechanism is chosen to overcome challenges in bringing this category under a traditional excise regime.

HEALTH SECURITY *SE*
NATIONAL SECURITY CESS
BILL, 2025

DEPARTMENT OF REVENUE

- **Revenue Allocation and Fiscal Federalism:** Union Finance Minister Nirmala Sitharaman clarified that the collected cess **would be shared with the States**. This commitment aligns with the principles of **fiscal federalism**, recognizing that **public health is a State subject** (under the State List of the Seventh Schedule). The introduction of this cess will have no impact on the maximum $40\%$ GST rate levied on pan masala consumption.

- **Initial Scope and Potential Expansion:** While initially applicable to **pan masala**, the Bill provides the enabling provision for the government to notify and extend this special cess to **other similar goods** in the future, if deemed necessary. The Finance Minister noted that the current cess percentage of gross total revenue ($6.1\%$) is lower than historical figures ($7\%$ between 2010-2014).

- **Constitutional and Legal Provisions:**

  o **Article 270:** Governs the distribution of taxes between the Union and the States. Cess, unlike taxes under Article 268 or 269, is technically **not shared** by default unless Parliament explicitly makes a provision for its distribution, as the Bill does here.

  o **Seventh Schedule (State List/List II):** Public Health and Sanitation is explicitly listed here, providing the constitutional justification for sharing the cess revenue with States to fund health expenditure.

  o **Article 246A and the Goods and Services Tax (GST) Framework:** The cess is levied *over and above* the GST framework, utilizing the enabling power of the Union to levy taxes/cesses for specific purposes.

## Conclusion

The passage of the Health Security and National Security Cess Bill, 2025, represents a targeted fiscal measure aimed at leveraging the taxation of demerit goods like pan masala to secure funding for critical national priority areas: health and security. The design to levy the tax on production capacity and the explicit provision for revenue sharing with States are significant features reflecting both efficiency and cooperative federalism.

## 8. India-Russia Deeper Nuclear Ties & India's Energy Security

**Key Agreements and Strategic Rationale**

- **Accelerated Cooperation:** India and Russia agreed to accelerate **technical and commercial talks** on Russian-designed **Pressurized Water Reactors (VVERs)**, focusing on research, joint development, **localization, and joint manufacturing** of nuclear equipment in India.

- **Kudankulam & Second Site:** Russia committed to bringing the **Kudankulam Nuclear Power Plant (KKNPP)** in Tamil Nadu to **full capacity** (6,000 MWe across six VVER reactors) and assured **long-term fuel cycle and life-cycle support**. The two nations also emphasized finalizing the **second site** for a jointly developed nuclear power plant.

- **Baseload Power Imperative:** Nuclear power is crucial for India as a **non-fossil source** that can provide **Baseload Electricity** (minimum continuous power) essential for grid stability. This is vital as India aims to reduce reliance on coal and integrate intermittent renewable sources like solar and wind.

- **Ambitious Capacity Target:** This partnership is key to India's goal of expanding its nuclear capacity to **22 GW by 2032** and an ambitious **100 GW by 2047**, aligning with the **Viksit Bharat@2047** vision and **Net-Zero by 2070** commitment.

- **Longstanding Partnership:** The nuclear cooperation is a significant component of the **India-Russia Special and Privileged Strategic Partnership**, dating back to a 1961 agreement, providing a reliable and time-tested source of advanced foreign technology.

## Important Keypoints & Definitions

- **Baseload Electricity:** The minimum amount of continuous, stable, and reliable power required by an electricity grid over a 24-hour period. Nuclear power is one of the few low-carbon sources capable of providing this 24/7 power, unlike solar or wind.

- **VVER Reactor (Voda Voda Energo Reactor):** A type of **Pressurized Water Reactor (PWR)** designed and supplied by Russia's Rosatom. These are large-capacity, Generation III reactors used at KKNPP.

- **Localization/Joint Manufacturing:** The process of producing nuclear equipment and components within India through technology transfer and joint ventures. This is vital for **Atmanirbhar Bharat** (Self-Reliant India) and reducing dependence on imports.

- **Nuclear Liability:** The issue of compensation to victims in the event of a nuclear incident. India's **Civil Liability for Nuclear Damage Act, 2010 (CLNDA)**, makes the operator liable but also grants the operator a **right of recourse** against the supplier under specific circumstances, which has been a point of contention for foreign suppliers like Russia.

## Constitutional & Legal Provisions

- **Atomic Energy Act, 1962 (Proposed Amendment):** The government plans to introduce the **Atomic Energy Bill, 2025**, to amend this Act. The current law restricts nuclear plant operation to the **Central Government** and its corporations (like NPCIL). The proposed amendments aim to **open the sector to private and state participation** to attract capital and help meet the 100 GW target.

- **Department of Atomic Energy (DAE):** The primary authority under the **Prime Minister's Office (PMO)** responsible for the development of nuclear power technology, research, and non-power applications.

- **Atomic Energy Regulatory Board (AERB):** The independent regulatory body responsible for ensuring the safe use of nuclear and radiation energy in India.

## Conclusion and UPSC Relevance

The deepening nuclear collaboration with Russia is a **strategic necessity** for India to meet its ambitious clean energy targets, ensure **long-term energy security**, and maintain **grid stability** in the face of rapidly increasing intermittent renewable capacity. The partnership moves beyond simply building reactors (KKNPP) to encompass technology transfer, localization, and fuel cycle support, fostering **technological sovereignty**. The parallel government move to amend the **Atomic Energy Act, 1962**, and **CLNDA, 2010**, is essential to unlock private and foreign investment needed to achieve the **100 GW by 2047** goal.

## 9. UIDAI's New Rule to Curb Aadhaar Photocopy Misuse & Boost Privacy

### Key Provisions of the Upcoming Rule

- **Ban on Photocopies & Storage:** The new rule, soon to be notified by the **UIDAI** (Unique Identification Authority of India), aims to explicitly **discourage entities** (like hotels, event organizers) from taking and **storing physical photocopies** of Aadhaar cards, a practice currently deemed in **contravention of the Aadhaar Act**.

- **Mandatory Registration:** It will **mandate registration** of all **Offline Verification Seeking Entities (OVSEs)**, such as hotels, retailers, and event organizers, seeking to perform Aadhaar-based identity verification.

- **Shift to Digital Verification:** Registered entities will gain access to a new technology ecosystem to facilitate secure, **paperless verification**. This includes methods like **QR code scanning** and using a **new Aadhaar mobile application** currently in development.

- **Enhanced Privacy & Security:** The core objective is to **enhance privacy protection** by eliminating the need to share physical paper copies, which are prone to misuse, unauthorized storage, and data leaks, ensuring Aadhaar data is not compromised.

- **Improved Efficiency (Offline Mode):** The new process is designed to improve service delivery by enabling **app-to-app authentication** and verification that **does not require constant connection to the central Aadhaar database** for every transaction, thus resolving issues caused by intermediate server downtime.

## Important Keypoints & Definitions

- **Offline Verification Seeking Entity (OVSE):** Any entity (government or private) that seeks to verify the identity of an individual using their Aadhaar details through a method that does not require real-time biometric or OTP-based authentication with the central database.

- **Aadhaar Paperless Offline e-KYC:** A secure mechanism where the Aadhaar holder can download a digitally signed file (XML/PDF) or a secure **QR Code** containing limited demographic details (name, photo, DoB, and a hash of the mobile/email) from the UIDAI website/app. This file is **password-protected** and can be shared for offline verification without revealing the full Aadhaar number or core biometrics.

- **Digital Personal Data Protection Act (DPDP Act):** The new Aadhaar verification framework is expected to align closely with the principles of the DPDP Act (set to be fully operational within 18 months), particularly those related to **consent, purpose limitation, and data minimization**.

- **Contravention of the Aadhaar Act:** The practice of collecting and storing photocopies is cited as being against the principles of the **Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016**, which emphasizes the need to protect the identity and authentication records of individuals.

## Constitutional & Legal Provisions

- **Aadhaar Act, 2016 (as amended):** This is the principal law governing the use of Aadhaar. The new rules stem from the UIDAI's authority under this Act to make regulations for the use and verification of Aadhaar. **Section 29(2) and 29(4)** of the Act impose restrictions on the storage and use of Aadhaar number and core biometric information.

- **Justice K. S. Puttaswamy (Retd.) vs Union of India (2017):** The Supreme Court ruling affirmed that the **Right to Privacy** is a **Fundamental Right** under **Article 21** of the Constitution. The UIDAI's move to discourage photocopies directly addresses privacy concerns and the risk of identity misuse associated with the physical storage of personal data, aligning Aadhaar usage with the constitutional mandate for privacy protection.

- **Digital Personal Data Protection Act (DPDP Act), 2023:** Although not yet fully functional, the new rules are forward-looking and designed to be compliant with this landmark law, which establishes the legal framework for processing digital personal data in India.

## Conclusion and UPSC Relevance

The UIDAI's forthcoming rule represents a significant step towards reinforcing the privacy architecture of India's digital public infrastructure. By mandating registration for verification entities and shifting the identity proof method from insecure **paper photocopies** to secure **digital/QR code-based offline verification**, the government is proactively mitigating the risks of identity theft and data leakage. This move is essential for building citizen trust in digital identity systems and ensuring compliance with the fundamental right to privacy and the forthcoming data protection law, thereby strengthening India's overall digital governance framework.

# 10. Aviation Safety Crisis: Dilution of Pilot Duty Limits (FDTL)

## Key Issues and Regulatory Failures

- **Abeyance of FDTL Rules:** Following flight cancellations by a private airline (Indigo), the **Ministry of Civil Aviation** ordered the **Directorate General of Civil Aviation (DGCA)** to place the **Flight Duty Time Limitations (FDTL) Civil Aviation Requirements (CARs)** under immediate **abeyance**. This action prioritizes the commercial interests of airlines over crew fatigue and passenger safety.

- **Compromise of Safety Norms:** The DGCA's initial appeal to pilots for "cooperation" followed by the Ministry's subsequent order to dilute a safety measure mandated by a High Court order makes a **"mockery of flight safety"** and demonstrates a long-standing pattern of yielding to commercial aviation requirements.

- **Underemployment of Crew:** Airlines, particularly the one mentioned, are accused of deliberately **underemploying qualified flight crew**, taking advantage of a DGCA CAR (Series 'C' Part II Section 3, April 2022) which only requires a minimum of **three sets of crew per aircraft** for domestic operations, when far more are practically needed to adhere to safety FDTL norms.

- **Lack of Independent Oversight:** The crisis highlights the **lack of safety oversight** by the DGCA, reinforcing a 2006 **ICAO audit report** that identified the need for India to establish an **independent civil aviation authority** free from the control of the government and the Ministry.

- **Judiciary's Role:** The judiciary has shown inconsistency, initially slamming the aviation authority for risking lives by diluting FDTL rules (Writ petition 1687 of 2008 in Bombay High Court) but later reversing the order and upholding the Ministry's action, signaling a lack of consistent priority for aviation safety.

- **Consequences of Delay:** Despite airlines and the DGCA knowing the new FDTL regulations would take effect from November 1, 2025, their lack of preparation led to widespread operational chaos, impacting thousands of passengers and demonstrating a failure to implement safety requirements proactively.

## Important Keypoints & Definitions

- **Flight Duty Time Limitations (FDTL):** Regulatory limits specified by the DGCA (as **Civil Aviation Requirements - CARs**) on the maximum number of hours a flight crew member (pilot or cabin crew) can be on duty or flying, and the minimum rest periods they must be provided. FDTL rules are crucial for mitigating **crew fatigue**, which is a major factor in aviation accidents.

- **Civil Aviation Requirement (CAR):** Regulations and standards issued by the **DGCA** under the powers derived from the Aircraft Act and Rules. These are the mandatory rules that airlines and crew must follow to ensure safety and standardization.

- **International Civil Aviation Organization (ICAO):** A specialized agency of the United Nations that codifies the principles and techniques of international air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth. Its audit reports hold significant weight on national aviation safety standards.

- **Basal Fatigue:** A state of reduced mental and physical performance caused by lack of sleep, which significantly impairs a pilot's ability to safely operate an aircraft.

### Constitutional & Legal Provisions

- **Aircraft Act, 1934 and Aircraft Rules, 1937:** These are the primary Central Acts that give the government and the **DGCA** the legal authority to regulate all civil aviation activities, including setting safety standards like FDTL.

- **Article 21 (Right to Life):** In the context of the Bombay High Court ruling, the safety of passengers and crew is implicitly linked to the **Fundamental Right to Life** under **Article 21** of the Constitution, as arbitrary dilution of safety norms endangers life.

- **Writ Petition (Writ petition 1687 of 2008):** A constitutional remedy filed in a High Court (under Article 226) or the Supreme Court (under Article 32) to seek judicial review or enforcement of fundamental rights. The pilot association used this to challenge the Ministry's dilution of FDTL rules.

### Conclusion and UPSC Relevance

The recurring failure to prioritize crew safety and adherence to international safety standards, evidenced by the arbitrary dilution of FDTL rules, exposes a fundamental weakness in India's aviation governance: the **lack of an independent regulatory body** (DGCA) free from political and commercial pressure. This creates a systemic risk, directly threatening the lives of passengers and crew and severely damaging India's reputation for aviation safety oversight on the global stage. This crisis underscores the need for genuine legislative and structural reforms, as recommended by ICAO, to ensure the DGCA can operate with the autonomy necessary to enforce safety norms without compromise.

## 11. Sanchar Saathi App Mandate: Privacy vs. Cybercrime Control

### Core Conflict and Government Policy

- **Preloading Mandate & Backlash:** The government issued an ill-advised directive mandating smartphone manufacturers to **preload the 'Sanchar Saathi' app** on every new device with **privileged access** (phone, SMS, location) that could not be disabled. This was swiftly **withdrawn** following overwhelming backlash from civil society and activists.

- **Justification vs. Surveillance Risk:** The government justified the app as a practical measure against **cyberfraud and identity theft** (e.g., scams exploiting spoofed devices). However, critics argued that a single privileged app on millions of devices **structurally alters the state's capacity for mass surveillance** and increases the attack surface for criminal actors.

- **Failure of Proportionality Test:** The mandate is argued to fail the **test of proportionality** laid down by the Supreme Court in the *Puttaswamy* judgment, as equally effective but **less intrusive**

**ways** to address cyber scams already exist (e.g., existing portals, USSD codes, SMS checks, and the CEIR portal).

- **Focus on Digital Literacy:** The core recommendation is for the state to **shift its focus from technical "blanket mandates"** to a sustained mission of **improving digital literacy** among citizens. This involves continuous, tailored public education (like the **RBI Kehta Hai** campaign) to change user behavior and build distrust of unsolicited links/callers.

- **The Three-Pillar Strategy:** A comprehensive, long-term solution must rest on three pillars: **(1)** imposing **obligations on telecom and financial firms** to detect and disrupt fraud patterns; **(2)** ensuring **functional user reporting and redress mechanisms** (e.g., 1930 helpline); and **(3)** a **sustained public education program** on digital risks.

## Important Keypoints & Definitions

- **Sanchar Saathi Portal:** A legitimate telecom consumer protection and fraud management portal launched by the Department of Telecommunications (DoT). Its existing components (like **CEIR** and **TAFCOP**) allow users to trace lost/stolen phones, check mobile connections, and report spam/fraud using less intrusive methods.

- **CEIR (Central Equipment Identity Register):** A module of the Sanchar Saathi portal that helps track lost or stolen mobile devices and prevents them from being used on any Indian network, based on their unique **IMEI** (International Mobile Equipment Identity) number.

- **Agnotology (Contextual):** Although not explicitly used, the phenomenon described—the stubborn pursuit of a flawed tech solution while ignoring evidence of its failures and the effectiveness of alternative behavioral/systemic measures—can be linked to the concept of **"cultivated ignorance."**

- **Digital Arrest Fraud:** A sophisticated scam where fraudsters impersonate law enforcement or government officials to threaten victims with "arrest" over the phone, coercing them into immediate financial transfers or sharing sensitive data.

## Constitutional & Legal Provisions

- **K.S. Puttaswamy (Retd.) vs Union of India (2017):** The landmark Supreme Court ruling that established the **Right to Privacy** as a **Fundamental Right** under **Article 21** of the Constitution. Any state action infringing upon privacy must satisfy a three-fold test: **legality, necessity, and proportionality**. The Sanchar Saathi mandate failed the latter two tests due to the availability of less intrusive alternatives.

- **Digital Personal Data Protection (DPDP) Act, 2023 (Upcoming):** The mandatory preloading of an app with broad access violates the principles of **consent and data minimization**, which are central to the DPDP Act. The Act strictly governs how personal data (including location and communication logs) can be processed by government and private entities.

## Conclusion and UPSC Relevance

The withdrawal of the Sanchar Saathi preloading mandate serves as a crucial case study highlighting the tension between the state's legitimate need to combat rising cybercrime and the imperative to protect the **Fundamental Right to Privacy**. The episode confirms that simplistic, blanket **technological solutions (tech-fixes)** that compromise user rights are unsustainable and often less

effective than targeted, **systemic interventions** and **continuous digital literacy campaigns**. Future governance must focus on strengthening regulatory obligations on financial/telecom intermediaries and empowering citizens through education to truly curb cyberfraud, ensuring compliance with the **Puttaswamy principles**.

# 12. Export Promotion Mission (EPM): India's Unified Strategy for Global Trade

**Key Pillars of the Export Promotion Mission (EPM)**

- **Unified, Digital Framework:** The government approved the **Export Promotion Mission (EPM)** with a total outlay of **₹25,060 crore** (FY 2025-26 to 2030-31), consolidating multiple fragmented export-support schemes into a single, **digitally driven, outcome-based architecture** managed by the **Directorate General of Foreign Trade (DGFT)**.

- **Dual Sub-Schemes (Finance & Market Access):** The EPM operates through two integrated sub-schemes: **Niryat Protsahan** (Financial Enablers), focusing on **affordable trade finance for MSMEs** (e.g., interest subvention, factoring, credit cards for e-commerce), and **Niryat Disha** (Non-Financial Enablers), focusing on **market readiness** (e.g., quality compliance, international branding, logistics support).

- **Massive Credit Guarantee Expansion:** The Mission is reinforced by the expansion of the **Credit Guarantee Scheme for Exporters (CGSE)**, providing an additional **₹20,000 crore** in credit support with a **100% Government of India guarantee** (via NCGTC) to ease liquidity, especially for MSMEs seeking collateral-free credit.

- **RBI Regulatory Relief:** The **Reserve Bank of India (RBI)** introduced significant relief measures (The Reserve Bank of India (Trade Relief Measures) Directions, 2025) including **moratoriums on loan repayments**, **extension of export credit tenure to 450 days**, and **FEMA relaxations** (extending export realization period from 9 to 15 months) to mitigate debt-servicing stress and protect exporters' credit histories.

- **Focus on Inclusive Growth:** EPM explicitly targets **MSMEs, first-time exporters, and labour-intensive sectors** (like textiles, leather, gems & jewellery). The **Niryat Disha** component directs interventions, such as inland transport reimbursement, towards **non-traditional and low-export-intensity districts** to ensure a broader, inclusive geographic spread of India's exports.



**Important Keypoints & Definitions**

- **DGFT (Directorate General of Foreign Trade):** The implementing agency for the EPM, operating under the Department of Commerce, responsible for administering the Foreign Trade Policy and related laws.

- **Global Value Chains (GVCs):** The full range of activities needed to bring a product or service from conception to end-use, often crossing international borders. EPM aims to integrate Indian firms, particularly MSMEs, more deeply into these chains.

- **Niryat (Export):** The Hindi term used in the sub-scheme names, signifying a dedicated focus on export promotion.

- **FEMA Relaxations (Foreign Exchange Management Act):** The RBI announced amendments to the regulations, extending the time limit for exporters to receive and repatriate export proceeds from nine months to 15 months, providing greater flexibility amid global trade uncertainty.

- **IRACP Norms (Income Recognition, Asset Classification, and Provisioning):** Standard guidelines set by the RBI for banks on classifying loans and making provisions. The RBI relief measures exclude the moratorium period from Days Past Due (DPD) calculations, providing **regulatory forbearance** to avoid penalizing exporters' accounts.

## Constitutional & Legal Provisions

- **Union List (Entry 41):** The Constitution places the power to legislate on **"Trade and Commerce with foreign countries; import and export across customs frontiers; [and] customs duties"** under the exclusive domain of the Central Government (Union List, Entry 41), providing the basis for the *Foreign Trade (Development and Regulation) Act, 1992*, under which the DGFT operates.

- **Foreign Exchange Management Act (FEMA), 1999:** This Act governs the movement of foreign exchange in and out of India. The RBI's **FEMA relaxations** (extending realization/repatriation periods) are implemented through regulatory changes under this Act.

- **Article 301 (Freedom of Trade, Commerce, and Intercourse):** While primarily dealing with inter-state trade, the general constitutional principle of promoting free and fair commerce underlies all trade promotion missions, including exports.

## Conclusion and UPSC Relevance

The **Export Promotion Mission (EPM)** represents a sophisticated, **"whole-of-government" approach** to trade policy, strategically linking fiscal incentives, regulatory flexibility (RBI/FEMA), and digital governance. By focusing heavily on **MSMEs and district-level participation**, the Mission is designed to democratize access to global markets and achieve **inclusive export-led growth**. This structural reform is critical for enhancing India's **global competitiveness, strengthening the 'Atmanirbhar Bharat' mission**, and realizing the vision of **Viksit Bharat @ 2047** by making India a resilient and reliable global trade partner.

## 13. 2nd WHO Global Summit on Traditional Medicine: Key Highlights

- **Co-Hosting and Venue:** The summit will be co-hosted by the **Ministry of Ayush** and the **World Health Organization (WHO)** in **New Delhi (Bharat Mandapam)** from December 17–19, 2025. This marks the second edition, following the first successful summit in Gujarat in 2023.

- **Theme and Objective:** The theme is **"Restoring balance: The science and practice of health and well-being."** The primary goal is to drive the **evidence-based, equitable, and sustainable integration** of Traditional, Complementary, Integrative, and Indigenous Medicines into national health systems globally.

- **Focus Areas:** Key deliberations will concentrate on **scientific validation** (research, clinical trials, regulatory frameworks), **digital health** (AI-driven pharmacopeias, digital repositories), **biodiversity protection** (sustainable sourcing), and **global collaboration**.



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2nd WHO Global Summit

- **India's Leadership & Global Trust:** The hosting of the summit and the establishment of the **WHO Global Traditional Medicine Centre (WHO-GTMC)** in **Jamnagar, Gujarat**, underscore India's **global leadership** and growing international confidence in its traditional knowledge systems (Ayurveda, Yoga, Unani, Siddha, Sowa-Rigpa, Homoeopathy - **AYUSH**).

- **Key Side Event:** A dedicated side event titled **"Ashwagandha: From Traditional Wisdom to Global Impact"** will focus on deepening the scientific understanding of this renowned Indian medicinal plant, highlighting its adaptogenic, neuroprotective, and immunomodulatory properties, with an emphasis on safety and quality.

- **Global Roadmap:** The Summit is expected to shape a **decade-long roadmap** for traditional medicine, aligning with the **WHO Global Traditional Medicine Strategy 2025–2034**, and fostering a more holistic, inclusive, and sustainable future for healthcare in line with India's vision of *"Sarve Bhavantu Sukhinah, Sarve Santu Niramayah"* (May all be happy, May all be free from illness).

## Constitutional & Legal Provisions (India)

- **Constitutional Mandate (DPSP): Article 47** of the Indian Constitution, a Directive Principle of State Policy (DPSP), states that the State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties. This is interpreted to include promoting all effective systems of medicine, including traditional ones.

- **Key Legal Acts:**

  o **The Indian Medicine Central Council Act, 1970** (Repealed by NCISM Act, 2020): Provided for the constitution of the Central Council of Indian Medicine for the maintenance of a Central Register of Indian Medicine and for matters connected therewith.

  o **The National Commission for Indian System of Medicine (NCISM) Act, 2020:** Replaced the IMCC Act, 1970, to formalize and regulate education and practice of the Indian systems of medicine, ensuring quality standards.

  o **The Drugs and Cosmetics Act, 1940:** Regulates the manufacture and sale of Ayurvedic, Siddha, Unani drugs (Chapter IVA and Schedule T govern AYUSH product quality and Good Manufacturing Practices - GMP).

- **Definition: Traditional Medicine** is defined by WHO as the total sum of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness. **AYUSH** is the acronym for India's indigenous systems of health: Ayurveda, Yoga & Naturopathy, Unani, Siddha, Sowa-Rigpa, and Homoeopathy.

## Conclusion

India's hosting of the 2nd WHO Global Summit on Traditional Medicine is a pivotal moment, leveraging the country's rich heritage in Ayush systems to lead the global movement toward holistic and integrative healthcare. By focusing on scientific evidence, regulatory frameworks, digital innovation, and biodiversity, the summit aims to mainstream traditional medicine, strengthening India's soft power and contributing significantly to the global attainment of Universal Health Coverage.

## 14. PM GatiShakti & Infrastructure Boost: Key Highlights

- **Network Planning Group (NPG) Role:** The **104th NPG meeting** was convened under the **PM GatiShakti National Master Plan (PMGS NMP)** to review key infrastructure proposals. The NPG's core function is to ensure projects conform to **PM GatiShakti principles**—specifically, integrated **multimodal infrastructure**, **last-mile connectivity** to economic/social nodes, and the **'Whole of Government' approach**.

- **Five Rail Projects Reviewed:** Five major rail infrastructure proposals were evaluated, including multi-tracking sections (3rd and 4th lines) on High Traffic Density routes like the **Howrah–Chennai main line** (Nidadavolu–Duvvada) and the **Golden Quadrilateral** (Nagda-Mathura section). These projects are crucial for fulfilling the **Mission 3000 MT** strategy in the National Rail Plan.

- **Focus on Logistics Efficiency:** The primary anticipated impact of these new rail lines and capacity augmentation is to significantly **boost logistics efficiency**, enhance **freight carrying capacity** (handling cargo for fertilizers, coal, cement, containerized goods), and **reduce congestion** on existing high-density corridors.

- **Regional & Multimodal Connectivity:** Projects are geographically diverse, strengthening critical links in Andhra Pradesh, Tamil Nadu, Uttar Pradesh, Rajasthan, Madhya Pradesh, Goa, and Karnataka. The proposals emphasize alignment with existing strong **road and port connectivity** (e.g., Chennai Port, Visakhapatnam ports) to ensure seamless **multimodal freight movement** and provide last-mile connectivity to industrial and warehousing hubs.

- **Konkan Railway Financial Restructuring:** A significant non-capacity augmentation proposal was the **3rd Financial Restructuring** of the **Konkan Railway Corporation Limited (KRCL)**. This includes major infrastructure investments (new tunnels and crossing stations) to improve line capacity, safety, and operational efficiency along the crucial Konkan Railway route across Maharashtra, Goa, and Karnataka.

- **Socio-Economic Benefits:** Beyond logistics, the projects are projected to deliver substantial **socio-economic benefits** to their catchment areas by supporting regional industrial growth (steel plants, power plants), increasing trade movements, and improving passenger services, thereby supporting the vision of balanced regional development.

## Definitions & Key Initiatives

- **PM GatiShakti National Master Plan (PMGS NMP):** A transformational approach for integrated planning and synchronized project implementation across all concerned Ministries/Departments to reduce logistics costs, improve efficiency, and break departmental silos.



- **Network Planning Group (NPG):** An inter-ministerial body within the PM GatiShakti framework, housed in the Department for Promotion of Industry and Internal Trade (DPIIT), responsible for unified planning and evaluation of infrastructure projects based on the principles of integrated planning and multimodal connectivity.

- **Mission 3000 MT:** A strategic objective under the **National Rail Plan** aimed at increasing the Indian Railways' freight loading capacity to 3,000 Million Tonnes Per Annum (MTPA) by 2030, necessitating capacity augmentation on High-Density Networks (HDN).

## Constitutional & Legal Provisions

- **Seventh Schedule (Union List): Entry 22 (Railways)** places the subject of railways exclusively under the legislative domain of the Parliament (Union Government).

- **PM GatiShakti (Executive Mandate):** The PM GatiShakti NMP is an executive initiative under the overall responsibility of the Cabinet Secretariat, operationalized through the Ministry of Commerce and Industry and various infrastructure Ministries (Railways, Road Transport, etc.). It signifies an

administrative reform to move away from sectoral planning to **comprehensive planning** and execution.

- **Ministry of Railways Acts:** The planning and execution of these projects are governed by various legal frameworks including **The Railways Act, 1989**, concerning the construction, maintenance, and operation of railways.

**Conclusion**

The NPG's evaluation of five critical rail projects marks significant progress in operationalizing the **PM GatiShakti National Master Plan**. By prioritizing capacity augmentation, multimodal integration, and financial strengthening of key operators like KRCL, these initiatives are set to be transformative drivers for boosting India's logistics efficiency, reducing transit times, and accelerating regional industrial growth, thereby contributing fundamentally to the nation's economic competitiveness and strategic vision for infrastructure development.

## 15. CAFE-III Norms: The Super-Credit vs. EV Target Debate

- **CAFE Norms and Proposed CAFE-III:** The **Corporate Average Fuel-Efficiency (CAFE) Norms** are government-mandated standards that regulate the **fleet-wide average $\text{CO}_2$ emissions** (measured in $\text{g}/\text{km}$) of a manufacturer's passenger vehicles. Draft **CAFE-III norms (FY27 to FY32)** propose stricter targets, mandating fleet-average emissions down to **$91.7\text{g}/\text{km}$ by 2032** (from $113\text{g}/\text{km}$ under CAFE-II), aimed at accelerating electrification and efficiency.

- **Controversy over 'Super-Credits':** The core dispute is over the inclusion and multiplier factor of **'super-credits'** for Electric Vehicles (EVs) and hybrids. The draft norms propose counting a pure EV three times (or four times in some proposed versions) when calculating a company's fleet average. Global agencies like the **International Road Federation (IRF)** argue that these high artificial benefits should be **eliminated**, as they allow compliance through regulatory shortcuts rather than real fleet-wide emission reduction efforts.



- **Norms Lag Behind Industry's Voluntary Targets:** Analysis by the **International Council on Clean Transportation (ICCT)** suggests that even with the revised CAFE-III norms, the resulting EV share in total car sales would only reach **$10-11\%$ by 2030**. This is significantly below the voluntary public commitments made by major Indian Original Equipment Manufacturers (OEMs), such as Tata Motors and Mahindra & Mahindra, which are targeting an EV penetration of up to **$30\%$ by 2030**.

- **Industry Divide on Concessions:** The auto industry, represented by **SIAM** (Society of Indian Automobile Manufacturers), is divided. While SIAM generally pushed for higher super-credit factors for EVs (to encourage investment), there's a separate division over the weight-based exemption for small petrol cars, which gives an easier target to lightweight small cars. Automakers with a high share of small cars (like Maruti Suzuki) support this, but rivals (like Tata Motors) oppose it, arguing it compromises vehicle safety and is arbitrary.

- **Wider Policy Implications:** The debate highlights the tension between achieving aggressive decarbonization targets (**India's Net Zero 2070 commitment**) and supporting the profitability/sustainability of the auto sector, which is making massive investments in the EV value

chain. Policymakers must balance the need for affordability (protecting small cars) with the imperative of driving real technological advancements toward zero-emission mobility.

## Definitions of Key Terms

- **Corporate Average Fuel-Efficiency (CAFE) Norms:** Regulatory standards that require an automobile manufacturer to ensure the **sales-volume weighted average** $\text{CO}_2$ emissions of their entire fleet of passenger vehicles sold in a fiscal year do not exceed a government-specified target.

- **Super-Credits:** A regulatory mechanism within CAFE norms where vehicles with very low or zero emissions (like EVs and Strong Hybrids) are counted with a **multiplier** (e.g., 3x or 4x) when calculating the fleet average. This artificially reduces a manufacturer's reported average $\text{CO}_2$ emissions, easing compliance with the overall target.

- **Fleet-Wide Average:** The emission or fuel-efficiency figure calculated by taking the weighted average of all passenger vehicle models sold by a manufacturer in a given year, where the weight is the sales volume of each model.

## Constitutional & Legal Provisions

- **Energy Conservation Act, 2001 (ECA):** The CAFE norms are formulated by the **Bureau of Energy Efficiency (BEE)**, a statutory body established under the Ministry of Power by the ECA. The Act and its amendments provide the legal basis for setting and enforcing fuel efficiency and $\text{CO}_2$ emission standards and levying penalties for non-compliance.

- **Article 48A (DPSP):** This Directive Principle of State Policy mandates the State to endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country. CAFE norms directly align with this by mitigating climate change and air pollution from the transport sector.

- **International Commitments:** CAFE norms form a crucial part of India's commitment to reducing the carbon intensity of its economy, aligning with its **Nationally Determined Contributions (NDCs)** under the **Paris Agreement** and the target of achieving **Net Zero emissions by 2070**.

## UPSC Relevance

This topic is highly relevant for the UPSC Civil Services Exam:

- **GS III (Environment, Economy & S&T):** It covers **Climate Change Mitigation** strategies, **Air Pollution Control** (CAFE vs. BS norms distinction is important), **Sustainable Transportation**, and the interface of **Industrial Policy** with environmental regulation. The role of the **BEE** and the **Energy Conservation Act** is a key administrative detail.

- **GS II (Governance & Policy):** The debate reflects the challenge of **policy formulation** involving multiple stakeholders (Government, Global Agencies, Industry-SIAM, and specific OEMs), highlighting issues of **regulatory capture** and the use of market-based mechanisms (super-credits).

## Conclusion

The CAFE-III norms represent India's necessary tightening of emission standards to drive green mobility and fulfill climate goals. The central debate surrounding the 'super-credits' mechanism

underscores a fundamental tension: whether regulatory flexibility should prioritize encouraging investment in EVs or enforce stricter, technology-neutral standards that yield real and observable emission reductions across the entire vehicle fleet. An effective final policy must leverage the industry's own ambitious EV targets by setting compliance standards that are stringent enough to ensure rapid decarbonization without compromising vehicle safety or affordability for the mass market.

## 16. PM Dhan-Dhaanya Krishi Yojana – FPO Sangam

- **PM Dhan-Dhaanya Krishi Yojana (PMDDKY) Overview:** This is a comprehensive new Central Government scheme (launched in Union Budget 2025) focused on transforming Indian agriculture by shifting from a production-centric to an **income-centric model**. It targets **100 low-performing districts** identified by three indicators: **Low Productivity, Moderate Cropping Intensity, and Below-Average Credit Parameters**. The Yojana aims to strengthen productivity, improve irrigation efficiency, enable crop diversification, and modernize post-harvest management.

- **Definition & Role of FPOs (Farmer Producer Organizations):**

  - **Definition:** An FPO is a legal entity formed by a group of farm producers, such as farmers, fishers, or artisans, to leverage collective strength through **economies of scale** in production, procurement of inputs, processing, and marketing.

  - **Role in PMDDKY:** FPOs are highlighted as the **"backbone of this reform,"** central to improving **input access** (seeds, fertilizers), building better **production systems** (Integrated/Natural farming), expanding **market opportunities** (direct linkages with buyers), and ultimately **unlocking higher incomes** for farmers, especially small and marginal ones.

- **FPO Sangam Event Significance:** The event, organized by the **Ministry of Agriculture & Farmers' Welfare**, served as a critical platform to connect **72 FPOs** from 15 states with senior government officials, financial institutions, private sector buyers, and AgTech innovators. The goal is to facilitate **market linkages**, encourage **value addition** (showcased in the FPO Exhibition), and explore **long-term sourcing arrangements** between private players and FPOs.

- **Key Thematic Areas for Sectoral Reform:** The thematic sessions addressed core challenges in agriculture: **integrated and natural farming**, **oilseeds and beekeeping value chains** (aligned with national missions), **protected cultivation**, **micro-irrigation** (water efficiency), **institutional financing**, and **digital agriculture solutions**. These areas reflect the multi-dimensional approach of PMDDKY and the focus on climate-resilience and sustainability.

- **Constitutional and Legal Context:**

  - **Constitutional:** The scheme aligns with the directive principle in **Article 39(a)** (right to an adequate means of livelihood) and the spirit of **Article 48** (organization of agriculture and animal husbandry on modern and scientific lines).

  - **Legal:** The FPO model is primarily registered under the **Companies Act, 2013 (Part IXA, as a Producer Company)** or the Cooperative Societies Act, ensuring a corporate structure with profit-sharing for farmers. The scheme achieves convergence by unifying over 36

existing Central Schemes (like PM-KISAN, PMFBY, PMKSY) for better resource efficiency in the targeted districts.

**Conclusion**

The PM Dhan-Dhaanya Krishi Yojana and the FPO Sangam event represent a strategic push towards **holistic agricultural transformation** by focusing on institutional reform (FPOs) and targeted interventions in underperforming areas.

## 17. PM Fasal Bima Yojana (PMFBY): Strengthening Implementation

- **Scheme Objective and Scope: PM Fasal Bima Yojana (PMFBY)** is the flagship crop insurance scheme of the Government of India, launched in 2016. Its primary objective is to provide **financial support** to farmers suffering crop loss/damage arising out of unforeseen events, stabilize their income, and encourage them to adopt innovative practices. The scheme replaced the earlier National Agricultural Insurance Scheme (NAIS) and Modified NAIS.

- **Key Technological Reforms for Transparency:** The government has introduced robust technology-based mechanisms to streamline implementation and ensure timely, transparent claim settlement:

  - **National Crop Insurance Portal (NCIP):** A single source of data for online enrollment, subsidy payment, monitoring, and electronic claim transfer directly to farmers' bank accounts.

  - **Digiclaim Module (from Kharif 2022):** A dedicated module integrated with NCIP, PFMS (Public Finance Management System), and Insurance Companies' systems for rigorous and transparent monitoring and processing of claims.

- **Leveraging Modern Technology for Assessment:** To improve the accuracy and timeliness of yield assessment and claim disbursal, the scheme utilizes advanced technologies:

  - **CCE-Agri App:** Used for capturing yield data/Crop Cutting Experiments (CCEs) and uploading it directly to the NCIP.

  - **YESTECH (Yield Estimation System Based on Technology):** Utilizes technology (remote sensing, drones, etc.) for yield estimation.

  - **WINDS (Weather Information Network and Data System):** Provides crucial weather data for risk assessment.

  - Integration of State Land Records with NCIP.

- **Scale of Financial Assistance and Outreach:** During the three years (2022-23 to 2024-25), the Central Government released a total of **₹35,395.66 Crore** as its share of premium subsidy, while the total claims paid to farmers amounted to **₹52,869.78 Crore** (as on Oct 31, 2025). The Government has also actively promoted awareness through structured campaigns like **'Fasal Bima Saptah'** and **'Fasal Bima Pathshalas'** and organized the nationwide drive **'Meri Policy Mere Haath'** for doorstep policy distribution.

- **Definition & Concept: Premium Subsidy** refers to the portion of the actuarial premium (actual cost of insurance) paid by the Central and State Governments to reduce the burden on farmers, who pay a nominal uniform premium rate (1.5% for Rabi, 2.0% for Kharif, 5.0% for commercial/horticultural crops). **Risk Sharing** under PMFBY is done by the farmer, Central Government, State Government, and the empaneled Insurance Companies.

**Conclusion**

The continued high utilization of funds and the successful disbursal of a substantial claim amount under PMFBY underscore its critical role as a **social security net** for the agricultural sectorThe key relevance lies in the government's strategy of using **Digital Governance (NCIP, Digiclaim)** and **Geo-spatial technology (YESTECH, WINDS)** to enhance transparency, improve delivery, and reduce moral hazard in financial inclusion schemes. The large volume of claims paid highlights the scheme's role in mitigating the impact of increasing climate variability on farm income.

## 18. Implementation and Economics of Minimum Support Price (MSP)

- **Definition and Determination (CACP): Minimum Support Price (MSP)** is a floor price fixed by the Government of India for **22 mandated crops** (7 Cereals, 5 Pulses, 7 Oilseeds, and 4 Commercial Crops) before the sowing season. The price is determined based on the recommendations of the **Commission for Agricultural Costs & Prices (CACP)**, which considers factors like cost of production, demand/supply, market price trends, and inter-crop parity. The final decision is taken by the Cabinet Committee on Economic Affairs (CCEA).

- **Fixing Formula (1.5 Times Cost):** Since 2018-19, the government has implemented the principle of fixing MSPs at a level of at least **1.5 times the cost of production**.

  - **Cost Definition:** The CACP primarily uses the $A2+FL$ cost concept for calculating this return. $A2+FL$ includes all paid-out costs (A2: cash/kind expenses on seeds, fertilizer, labour, etc.) plus the imputed value of **F**amily **L**abour.

  - **Key Debate:** Farmers' organizations often demand MSP to be fixed at $C2+50\%$, where $C2$ (Comprehensive Cost) includes $A2+FL$ plus the imputed rent on owned land and interest forgone on fixed capital assets, making it a more inclusive cost.



- **Procurement Mechanisms:** Government intervention to realize the MSP objective is done through designated agencies:

  - **FCI and State Agencies:** Primarily procure **cereals and coarse cereals** (like Wheat and Paddy) to ensure food security and Public Distribution System (PDS) requirements.

  - **PM-AASHA Scheme (Pulses, Oilseeds, Copra):** Procurement of these crops is done under the **Price Support Scheme (PSS)** component of the Umbrella Scheme of **Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)** by agencies like **NAFED and NCCF**, usually when market prices fall below MSP.

  - **CCI and JCI:** Procure **Cotton** and **Jute**, respectively, at MSP.

- **Non-Statutory Nature and Farmer Benefit:** MSP currently has **no statutory backing**, meaning a farmer cannot demand it as a matter of right. The government procurement is an *offer*, and farmers are free to sell their produce in the open market if the price is advantageous. The increase in MSPs, coupled with substantial procurement (e.g., 1,223 LMT procured in 2024-25), has injected significant funds (₹3.47 Lakh Crore) into the rural economy, directly benefiting farmers.

- **Constitutional and Legal Provisions:**

  o **Constitutional:** The MSP policy aligns with the **Directive Principle of State Policy (DPSP)** under **Article 39(a)** (right to an adequate means of livelihood) and **Article 48** (organization of agriculture).

  o **Legal:** The MSP regime operates under various executive orders and the framework established by the **CACP** (which functions as an attached office of the Ministry of Agriculture) and schemes like **PM-AASHA**. The ongoing demand is for a central law to provide a **legal guarantee** for MSP.

## Conclusion

The implementation of MSP is a crucial component of India's agricultural policy, designed to stabilize farmer income and ensure food security. The key areas of relevance include the **CACP's methodology ($A2+FL$ vs. $C2$)**, the operational difference between the mandatory procurement of cereals (FCI) and conditional procurement of oilseeds/pulses (PM-AASHA), and the ongoing debate regarding the **legal guarantee of MSP** and its potential fiscal and market distortionary impacts. Understanding the financial scale of procurement and the non-statutory nature of MSP is essential.

# 19. NABARD Survey Indicates Strong Revival in Rural Demand & Income Growth

## Key Points

- NABARD's eighth **Rural Economic Conditions and Sentiments Survey (RECSS)** (Sept2024–Nov2025) shows a **broad-based revival in rural demand**, with 80% of households reporting higher consumption over the past year, driven by rising real purchasing power.

- Rural incomes have strengthened significantly: **42.2% reported income growth**, only **15.7% saw a decline**, and **75.9% expect higher incomes next year**, indicating unprecedented optimism.

- Rural investment has accelerated, with **29.3% of households increasing capital investment**, reflecting renewed asset creation in both farm and non-farm sectors.

- **Formal credit access reached its highest level**, with 58.3% relying solely on formal sources, though informal lending remains at 20%, highlighting the need for deeper financial inclusion.

- Government welfare transfers contribute around **10% of rural monthly income**, stabilising consumption without creating dependency; for some households, transfers exceed 20% of income.

- Inflation perceptions moderated sharply to **3.77%**, improving real income, reducing loan repayment burdens, and strengthening purchasing power; satisfaction with rural infrastructure—roads, electricity, education, drinking water—has also increased.

## Important Definitions

- **RECSS (Rural Economic Conditions and Sentiments Survey):** A high-frequency, bi-monthly nationwide survey by NABARD capturing real-time data on rural consumption, income, inflation perception, credit access, and expectations.

- **Formal Credit:** Loans from regulated institutions such as banks, cooperatives, MFIs; essential for financial inclusion and reduced vulnerability.

- **Capital Investment:** Spending by households on productive assets (farm equipment, livestock, machinery), crucial for long-term income growth and rural diversification.

## Constitutional & Legal Provisions

- **Article38:** Mandates the State to promote economic welfare and reduce inequalities—reflected in improved rural outcomes.

- **Article39(b) & (c):** Ensure equitable distribution of resources and prevent wealth concentration; welfare transfers and access to credit support these goals.

- **Article41:** Directs the State to provide public assistance in cases of unemployment, old age, sickness—relevant to rural welfare schemes.

- **NABARD Act,1981:** Provides statutory backing for credit, rural development strategies, and institutional strengthening.

- **FRBM considerations:** Improved rural demand and moderated inflation have implications for fiscal sustainability and targeted welfare spending.

## Additional Key Points for UPSC

- The survey highlights a **shift towards formalisation** in rural finance and rising household confidence—key indicators of structural transformation.

- Higher consumption share (67.3% of monthly income) reflects strengthening **real purchasing power**, supported by GST rationalisation and moderated inflation.

- Rural optimism indicates potential for **multiplier effects** on agriculture, MSMEs, services, and rural employment.

- Improved infrastructure ratings show the impact of schemes like **PMGSY, Saubhagya, Jal Jeevan Mission, Digital India, PM Kisan**, contributing to long-term resilience.

- Welfare transfers functioning as income stabilisers reinforce the model of **targeted, non-distortionary support**, complementing growth.

## Conclusion

NABARD's RECSS findings point to a sustained revival of rural economic fundamentals driven by higher consumption, income growth, better credit access, and improved infrastructure. The synergy of public investment, welfare transfers, and moderating inflation has strengthened rural confidence and contributed to India's broader economic stability. These trends suggest that rural India is entering a phase of **resilient, inclusive, and growth-oriented transformation**.

# 20. Mega Food Park Projects Under PMKSY

## Key Points

- The **Mega Food Park Scheme (MFPS)** was implemented by the Ministry of Food Processing Industries from 2008 to 31.03.2021 as a component of **Pradhan Mantri Kisan Sampada Yojana (PMKSY)**, aimed at creating modern food processing infrastructure.

- The scheme is now **discontinued from 01.04.2021**, except for meeting committed liabilities; no new Mega Food Parks are being approved.

- Execution, ownership, and management of each **Mega Food Park (MFP)** rest with a **Special Purpose Vehicle (SPV)** or Implementing Agency, ensuring a public–private partnership–oriented framework.

- As per guidelines, each MFP project had a **30-month timeline** for completion from the date of final approval, enabling time-bound creation of integrated value chains.

- The scheme promoted **private investment**, facilitated infrastructure such as cold chains, primary processing centres, and logistics, and generated significant employment in the food processing sector.

- Annexured data (not provided in text) includes project cost, government financial assistance, releases, private investment mobilised, and employment generated across approved MFPs.

## Important Definitions

- **Mega Food Park (MFP):** A cluster-based food processing infrastructure project integrating farm production to the market through collection centres, primary processing units, and central processing facilities.



Mega Food Park Model: An Illustration

- **Special Purpose Vehicle (SPV):** A legally registered corporate entity created specifically to implement and operate a mega infrastructure project; ensures accountability and coordinated investment.

- **PMKSY (Pradhan Mantri Kisan Sampada Yojana):** A central sector scheme aimed at modernising food processing through infrastructure creation, reducing wastage, and enhancing farmers' income.
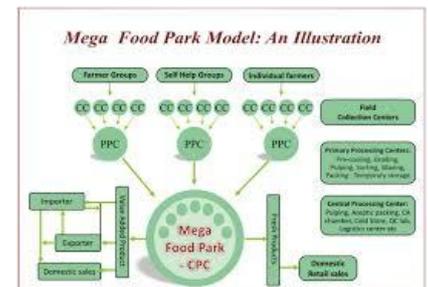
## Constitutional & Legal Provisions

- **Entry52, Union List:** Regulation of industries by the Union—relevant for centrally administered schemes in food processing.

- **Entry33, Concurrent List:** Trade, commerce, production, and supply of foodstuffs—enabling joint Centre–State responsibility in food processing infrastructure.

- **Article38 & Article39(b):** Mandate equitable distribution of resources and welfare-led economic growth, supported by value-chain development initiatives.

- **Food Safety and Standards Act,2006:** Provides the regulatory framework for quality and safety aspects in processed food, relevant to MFP operations.

## Additional Key Points for UPSC

- MFPs support **Doubling Farmers' Income** through value addition, reduced post-harvest losses, and improved market linkages.

- They enable **cluster-based development** similar to industrial corridors, promoting rural entrepreneurship and Agri-MSMEs.

- The discontinuation of MFPS reflects a policy shift toward **more targeted and flexible infrastructure schemes under PMKSY**, such as food processing clusters, cold chain development, and operation green initiatives.

- Mega Food Parks demonstrate Centre–State–private collaboration, an important example of **cooperative and competitive federalism**.

**Conclusion**

The Mega Food Park Scheme under PMKSY played a pivotal role in accelerating India's food processing ecosystem by creating integrated infrastructure, mobilising private investment, and generating employment. Although discontinued in 2021, its legacy continues through ongoing committed projects and newer schemes targeting efficiency, value addition, and farmer-centric growth.

## 21. NITI Aayog Report On "DEEPENING THE CORPORATE BOND MARKET IN INDIA"

**Key Points**

- NITI Aayog released a comprehensive report on **11Dec2025** outlining a reform roadmap to deepen India's corporate bond market, essential for mobilising **long-term, low-cost capital** needed for India's Viksit Bharat vision.

- The report stresses that a robust bond market is critical for **diversifying funding sources beyond banks**, improving liquidity, enabling better risk-sharing, and supporting infrastructure, MSMEs, green finance, and emerging sectors.

- Despite growth over the past decade, the corporate bond market remains constrained by **shallow depth, concentrated investor base, low secondary-market activity**, and limited access for mid-sized firms.

- The report recommends reforms across **legal and regulatory frameworks**, improved market infrastructure, higher transparency, broader investor participation (insurance, pension, retail), and expanded product offerings such as **credit-enhanced bonds, long-tenor instruments, sustainability-linked bonds**, and repo facilities for better liquidity.

- It highlights the potential of **digital innovations**—tokenised bonds, integrated data systems, and digital platforms—to modernise issuance, trading, and settlement.

- NITI Aayog emphasised that a deeper corporate bond market will reduce over-reliance on bank credit, ensure **efficient capital allocation**, and enable India to mobilise private finance for long-term development priorities.

**Important Definitions**

- **Corporate Bond Market:** A segment of the financial market where companies raise debt by issuing bonds to investors, providing long-term capital at market-based interest rates.

- **Market Depth:** The ability of a market to absorb large buy/sell orders without significant price changes; an indicator of liquidity and efficiency.

- **Credit Enhancement:** Measures that improve a bond's credit profile (e.g., guarantees, partial risk coverage) enabling lower-rated issuers to access markets.



**Constitutional & Legal Provisions**

- **Article301–307 (Freedom of Trade & Commerce):** Facilitate free movement of financial capital across India.

- **Securities Contracts (Regulation) Act,1956 & SEBI Act,1992:** Provide regulatory oversight for bond issuance, trading, and investor protection.

- **RBI's regulatory powers** over NBFIs and corporate debt markets ensure stability and systemic risk management.

- **FRBM Framework:** Encourages disciplined fiscal management, increasing the need for private capital mobilisation through bond markets.

**Additional UPSC-Relevant Points**

- Strengthening the bond market is essential for financing India's estimated multi-trillion-dollar infrastructure needs and transition to a **green economy**.

- Deep corporate bond markets enable pension funds and insurance companies to deploy long-term savings efficiently.

- Improving secondary-market liquidity is crucial—repo markets, market-making norms, and transparent trading platforms are major enablers.

- International comparisons (US, Japan, EU) illustrate India's relative underperformance and scope for institutional reforms.

**Conclusion**

The NITI Aayog report provides a forward-looking blueprint to transform India's corporate bond market into a resilient, inclusive, and globally competitive segment of the financial system. Deepening this market is vital for meeting India's long-term development financing needs, strengthening financial stability, and supporting structural transformation across sectors—crucial pillars of the Viksit Bharat @2047 agenda.

## 22. Cabinet Approves CoalSETU Window for Auction of Coal Linkages

**Key Highlights**

- The Union Cabinet has approved the **CoalSETU (Seamless, Efficient & Transparent Utilisation) Window** under the 2016 NRS Linkage Policy to auction coal linkages for **any industrial use and exports**, marking a major coal sector reform.

- The new window allows **long-term coal linkage allocation on auction basis** without end-use restrictions for domestic buyers; however, **coking coal is excluded** and **traders cannot participate**.

- The policy shifts from the earlier system where coal linkages in the **Non-Regulated Sector (NRS)** were available only to specified end-users such as cement, steel, sponge iron, aluminium, and CPPs.

- Coal obtained under CoalSETU can be used for **own consumption, coal washing, exports (up to 50% of linkage quantity)**, and flexible use within group companies; **resale within India is prohibited**.

- The reform aims to **accelerate utilisation of domestic coal reserves**, reduce dependence on imports, improve ease of doing business, and align coal allocation policy with **commercial mining reforms**.

- The window is expected to increase availability of **washed coal**, reduce imports, and create export opportunities for washed coal in international markets.

## Definitions & Key Concepts

- **Coal Linkage:** A long-term supply assurance from coal companies to consumers, ensuring steady availability of coal at notified prices.

- **NRS (Non-Regulated Sector):** Industries not governed by electricity tariff regulations—e.g., cement, sponge iron, aluminium, steel (non-power), etc.

- **Washed Coal:** Coal processed to remove impurities, improving calorific value and reducing emissions; crucial for energy efficiency and meeting environmental norms.

- **Commercial Mining:** Policy reform allowing private players to mine and sell coal without end-use restrictions, increasing competition and efficiency.

## Constitutional & Legal Provisions

- **Coal Mines (Special Provisions) Act,2015:** Enables transparent auction of coal blocks and commercial mining by private companies.

- **Mines and Minerals (Development and Regulation) Act,1957:** Governs mining activities, allocation, and licensing, and forms the legal basis for coal sector reforms.

- **Article 39(b):** Directive Principle mandating distribution of material resources (like coal) to best serve the common good—supports reforms improving efficient resource utilisation.

- **Environmental Regulations:** Washed coal usage aligns with **Air (Prevention and Control of Pollution) Act,1981** and climate commitments to reduce emissions intensity.

## Additional Analytical Points

- Introducing a separate CoalSETU window improves **market-driven allocation** and reduces bureaucratic bottlenecks in coal distribution.

- Allowing exports (up to 50% of linkage coal) enhances India's participation in the **global coal value chain**, especially for washed coal.

- Restricting traders ensures that linkages are used for **genuine industrial needs**, preventing hoarding or speculative resale.

- Flexibility for group companies promotes **operational efficiency** and optimal use of coal resources.

- The move supports India's objective of **reducing coal imports**, currently significant for non-coking and washed coal segments.

**Conclusion**

The CoalSETU Window represents a major step toward a transparent, market-oriented coal allocation system. By allowing coal linkages for diverse industrial uses and exports without end-use restrictions, the policy strengthens energy security, supports industrial growth, and enhances utilisation of domestic coal resources. It also aligns coal linkage policy with broader reforms in commercial mining and resource governance.

## 23. India's Leadership Role in Shaping a Blue Ocean Strategy

**Key Highlights**

- India historically championed ocean equity, supporting the **"common heritage of mankind"** principle during UNCLOS negotiations; today, it faces new oceanic challenges such as climate change, acidification, sea-level rise, and IUU fishing, especially in the climate-vulnerable Indian Ocean basin.

- A Blue Ocean Strategy for India rests on **three pillars—stewardship, resilience, and inclusive growth**—emphasizing ecosystem protection, climate adaptation, and sustainable blue economy opportunities (green shipping, offshore renewables, aquaculture, marine biotechnology).

- Global ocean finance is rising sharply, with initiatives like **BEFF (€25 billion pipeline, €8.7 billion new commitments), Finance in Common Ocean Coalition ($7.5 billion annually), and COP30's One Ocean Partnership ($20 billion by 2030)** providing opportunities for India to mobilise regional funding.

- India can institutionalize regional leadership through mechanisms such as a proposed **Indian Ocean Blue Fund**, a **Regional Resilience and Ocean Innovation Hub**, and enhanced maritime domain awareness under India's SAGAR vision.

- Security in the Indian Ocean increasingly depends on **sustainability rather than military rivalry**, with threats like IUU fishing, coral degradation, and extreme weather undermining livelihoods and regional stability.

- India's readiness to ratify the **BBNJ Agreement**, leadership in UNOC3 outcomes, and potential agenda-setting through **IORA chairmanship** position it to champion global ocean governance rooted in cooperation and equity.

**Definitions & Key Concepts**

- **UNCLOS (United Nations Convention on the Law of the Sea):** International treaty governing maritime rights, jurisdiction, and ocean resource management; adopted 1982.

- **Common Heritage of Mankind:** Principle that resources of areas beyond national jurisdiction belong to all humanity and must be used for collective benefit.

- **Blue Economy:** Sustainable use of ocean resources for economic growth, improved livelihoods, and environmental health.

- **IUU Fishing:** Illegal, unreported, and unregulated fishing that undermines marine biodiversity and economic security.

- **BBNJ Agreement:** Treaty on Biodiversity Beyond National Jurisdiction addressing conservation, sustainable use, and equitable benefit-sharing of high-seas biodiversity.

## Constitutional & Legal Provisions

- **Article 51(c):** Encourages India to promote international peace, security, and respect for international law—supports India's ocean governance leadership.

- **Environment (Protection) Act,1986:** Legal basis for protecting marine ecosystems and regulating coastal activities.

- **Maritime Zones Act,1976:** Defines India's territorial waters, EEZ, and continental shelf consistent with UNCLOS principles.

- **Coastal Regulation Zone (CRZ) Notifications:** Govern sustainable coastal development and conservation.

- **India's National Maritime Security Strategy & SAGAR Doctrine:** Basis for linking maritime security with regional cooperation and sustainable development.

## Additional Analytical Points

- India's maritime vision aligns with the evolving shift **from geopolitics to ocean sustainability**, recognizing that ecological collapse poses as much security risk as naval confrontation.

- Establishing **green shipping corridors** and **blue bonds** can attract global investment while reducing emissions.

- Supporting SIDS and African littorals through technology transfer and resilience-building enhances India's soft power and strategic credibility.

- The rise of ocean finance indicates a global acknowledgement that the **ocean is central to climate stability**, giving India leverage to shape the policy landscape.

- India's historic consistency—from Nehru to Indira Gandhi to present leaders—demonstrates its longstanding commitment to environmental justice and ocean stewardship.

## Conclusion

India stands at a decisive moment: the Indian Ocean, long central to its identity, now demands leadership that blends sustainability, innovation, regional cooperation, and equitable development. With global finance mobilising for ocean action and new governance instruments such as the BBNJ Agreement emerging, India has the opportunity to shape a resilient, inclusive, and sustainable ocean future. By operationalising its vision—from SAGAR to Blue Economy frameworks—India can ensure that the Indian Ocean becomes not a zone of rivalry, but a model of global cooperation.

## 24. IMF's 'C' Grade for India's National Accounts Statistics

### Key Highlights

- The IMF recently gave India's national accounts statistics — including GDP and GVA estimation methodologies — a **'C' grade**, the second-lowest rating, raising concerns about data reliability even as Q2 recorded **8.2% growth**.

- IMF's concern primarily stems from India's practice of using **organised (formal) sector data as a proxy** to estimate growth in the large **unorganised (informal) sector**, which still accounts for nearly **30% of GDP** (excluding agriculture).

- Experts like **Pronab Sen** and **Arun Kumar** argue this proxy method becomes unreliable during periods of disruption (demonetisation, GST rollout, COVID-19), when the organised and unorganised sectors **move in opposite directions**.

- Over recent years, the organised sector expanded while the unorganised sector contracted, leading to **overestimation of actual GDP growth** when the proxy method is used.

- Quarterly GDP estimates are based on **assumptions and trend extrapolations** due to lack of real-time, disaggregated quarterly data — further weakening accuracy.

- Despite ongoing efforts to update the GDP base year and methodology, experts believe India **may not be able to fully address the IMF's concerns**, especially regarding unorganised-sector estimation.

## Definitions & Key Concepts

- **GDP (Gross Domestic Product):** Total monetary value of all final goods and services produced within a country in a given period.

- **GVA (Gross Value Added):** Measures value of output minus intermediate consumption; GDP = ΣGVA + taxes – subsidies.

- **Organised Sector:** Enterprises registered under formal regulations with systematic data reporting.

- **Unorganised Sector:** Small-scale, informal, unregistered enterprises with limited or no formal data reporting mechanisms.

- **Base Year Revision:** Updating the year used for GDP calculations to reflect structural economic changes and improve accuracy.

- **Proxy Estimation:** Using available data from one sector to estimate the performance of another sector lacking direct data.

## Constitutional & Legal Provisions

- **Collection of Statistics Act,2008:** Empowers government agencies to collect economic data essential for national accounts.

- **MOSPI Mandate:** Ministry of Statistics and Programme Implementation is constitutionally responsible for producing reliable national statistical data.

- **Article 51(a)(h):** Promotes scientific temper — indirectly relevant to ensuring accuracy and integrity in statistical systems.

- **Planning and Statistical Governance:** Though not explicitly constitutional, national statistics form the backbone of economic policy, budget allocations, and parliamentary oversight.

## Additional Analytical Points

- Accurate GDP estimation is crucial because it influences **monetary policy, fiscal decisions, welfare spending, foreign investment confidence**, and India's global credibility.

- The **informal sector's invisibility** in national accounts can distort assessments of poverty, inequality, employment, and MSME health — leading to suboptimal policy design.

- Media underreporting of IMF's concerns reveals **gaps in economic journalism**, limiting informed public debate on data quality.

- Strengthening India's statistical system requires **more frequent enterprise surveys, digitalisation of informal sector records, GST data integration**, and improved coordination between Centre and States.

- India's aim to become a **$5 trillion economy** requires globally credible statistical foundations.

**Conclusion**

The IMF's 'C' grade highlights structural weaknesses in India's GDP estimation, particularly concerning the unorganised sector. While headline growth numbers appear strong, underlying methodological issues raise questions about accuracy and transparency. Improving statistical systems will require institutional reforms, robust data collection mechanisms, and a stronger focus on informal sector dynamics. Credible national accounts are essential not only for policymaking but also for India's economic reputation.

# GEOGRAPHY & ENVIRONMENT

## 1. AI Initiatives for Climate Resilience and Agricultural Productivity

- **Pioneering AI-Based Weather Forecasting (Definition):** A pilot project was conducted using an **open-source blended model** that combined **NeuralGCM** (a specialized AI weather model), **ECMWF's AIFS** (Artificial Intelligence Forecasting System), and 125 years of IMD historical rainfall data. The purpose was to generate highly granular, **probabilistic local monsoon onset forecasts**, crucial for determining the correct date of sowing.

- **Targeted Dissemination & Impact:** The local onset forecasts were disseminated to over 38 million farmers across 13 states through the **M-Kisan portal** via SMS in five regional languages. Feedback surveys indicated a significant impact, with **31–52% of farmers adjusting their planting decisions** (land preparation, sowing timing, crop/input choice), demonstrating the direct utility of precise, local weather data.

- **Farmer Support through AI Chatbot:** The **"Kisan e-Mitra"** is a crucial voice-based, AI-powered chatbot that supports farmers in **11 regional languages**. It assists with queries concerning major government schemes like **PM Kisan Samman Nidhi, PM Fasal Bhima Yojna, and Kisan Credit Card**, handling thousands of queries daily and serving as a key digital extension service.



- **Pest Surveillance and Crop Health:** The **National Pest Surveillance System** leverages **AI and Machine Learning** to detect pest infestation through field photographs. This enables timely intervention, helping farmers mitigate pest attacks and reduce significant crop losses, with support for 66 crops and over 432 pests, contributing directly to **sustainable agriculture**.

- **Constitutional & Legal Frameworks:** The initiatives align with the principles of **Article 48 (DPSP)**, which directs the State to organize agriculture on modern and scientific lines, and **Article 38(2)**, promoting social and economic justice by minimizing inequalities in facilities and opportunities. The programs operate under the purview of key Acts such as the **Information Technology Act, 2000** (for digital service delivery) and the **National Policy on Farmers, 2007** (aiming for holistic farmer welfare).

Conclusion

The targeted deployment of AI and ML across weather forecasting, digital advisory (Kisan e-Mitra), and pest surveillance marks a transformative shift towards integrating modern technology into Indian agriculture. These initiatives are essential for enhancing climate resilience, improving crop productivity, and ultimately boosting farmer livelihoods by providing timely, localized, and actionable information.

## 2. UNEA Adopts India's Proposal on Global Wildfire Management

**Key Highlights**

- The United Nations Environment Assembly (UNEA-7) formally adopted India's resolution titled **"Strengthening the Global Management of Wildfires"**, marking a major step in global environmental governance.

- India's proposal urges a shift from **reactive firefighting to proactive prevention**, highlighting climate-induced factors such as rising temperatures, erratic rainfall, and land-use change that increase wildfire risks.

- The resolution calls for **enhanced early-warning systems, improved risk assessments, and strengthened national and regional preparedness**, especially for climate-vulnerable countries.

- India underscored the **cascading ecological, economic, and social impacts** of extreme fires—ranging from forest degradation and biodiversity loss to public health crises and economic disruptions.

- Adoption at UNEA-7 strengthens global cooperation, enabling countries to develop **data-driven fire management frameworks**, build capacity, and promote technology transfer.

- The initiative aligns with India's expanding climate leadership and supports commitments under the **Paris Agreement, SDG 13 (Climate Action)**, and **SDG 15 (Life on Land)**.

**Definitions & Key Concepts**

- **Wildfire:** Uncontrolled fire occurring in forests, grasslands, or other natural landscapes, often intensified by climatic and anthropogenic factors.

- **Early-Warning System:** A coordinated mechanism that forecasts fire risks using satellite data, weather models, vegetation indices, and disseminates rapid alerts to authorities and communities.

- **Risk Assessment:** Systematic evaluation of environmental, climatic, and socio-economic factors to determine the likelihood and impact of wildfire events.

- **UNEA (United Nations Environment Assembly):** The world's highest environmental decision-making body, responsible for setting global environmental policies.

## Constitutional & Legal Provisions (India)

- **Article 48A (DPSP):** Directs the State to protect and improve the environment and safeguard forests and wildlife.

- **Article 51A(g):** Fundamental duty of citizens to protect the natural environment, including forests.

- **Forest Conservation Act,1980 & Wildlife Protection Act,1972:** Provide regulatory frameworks for forest management, biodiversity conservation, and prevention of ecological degradation.

- **National Action Plan on Climate Change (NAPCC):** Includes measures relevant to fire risk management—particularly under the Green India Mission.

## Additional Analytical Points

- Wildfires increasingly contribute to **carbon emissions, haze pollution, loss of livelihoods**, and displacement of tribal and forest-dependent communities.

- Climate change is altering fire regimes globally, making traditional firefighting approaches insufficient; hence the stress on **prevention, resilience, and ecosystem restoration**.

- India's resolution strengthens South-South cooperation, especially benefiting **developing and forest-rich countries** in Africa, Asia, and Latin America.

- The move supports India's expanding soft power in global environmental diplomacy and complements domestic wildfire initiatives using **ISRO satellite data and Forest Survey tools**.

- International collaboration can facilitate **capacity building, knowledge exchange, and financial mobilisation** for fire management.

## Conclusion

India's wildfire management resolution at UNEA-7 marks a significant global endorsement of proactive climate resilience strategies. By emphasising early-warning mechanisms, risk assessments, and preventive action, the resolution recognises wildfires as a transboundary threat demanding coordinated international response. The decision strengthens India's global environmental leadership and contributes to long-term ecological sustainability.

# 3. Secrets of Himalayan Air Movements and Their Influence on Monsoons

## Context

- Indian scientists from **ARIES (DST)** and **ISRO's Space Physics Laboratory** have conducted the **first-ever direct, high-resolution, long-term measurements** of vertical air motion over the central Himalayas during the Asian Summer Monsoon (ASM).

- Using India's indigenously developed **Stratosphere–Troposphere (ST) Radar** at Nainital, scientists measured vertical air velocities as low as $5 \text{ cm s}^{-1}$, filling a major data gap previously dependent on indirect balloon or satellite-based observations.

- The study identified a **persistent downward-moving air mass between 10–11 km altitude** and confirmed a **steady upward flow above 12 km**, revealing a more complex vertical circulation inside the **Asian Summer Monsoon Anticyclone (ASMA)** than previously understood.

- Findings show a "**two-step**" vertical transport process from the lower troposphere to the stratosphere, improving understanding of monsoon dynamics, pollutant movement, and greenhouse gas transport.

- These insights can significantly enhance **monsoon prediction models**, early warning systems for weather-related disasters, and regional water and agricultural planning.

- The study, published in *Earth and Space Science (AGU)*, has major implications for **air quality assessment**, climate resilience, and long-term monsoon forecasting for South Asia.

## Definitions & Key Concepts

- **Vertical Air Motion:** Upward or downward movement of air within the atmosphere, critical for cloud formation, rainfall, and pollutant transport.

- **Asian Summer Monsoon Anticyclone (ASMA):** A large, upper-level atmospheric circulation system forming during the monsoon months; influences monsoon rainfall, climate patterns, and stratospheric transport.

- **Stratosphere–Troposphere Radar (ST Radar):** Ground-based radar used for high-precision monitoring of atmospheric winds and vertical air movement.

- **Troposphere/Stratosphere:** The lowest two layers of the atmosphere; vertical motion across these layers affects monsoon strength, rainfall distribution, and climatic processes.

## Constitutional & Legal Provisions

- **Article 51A(g):** Fundamental duty to protect and improve the natural environment, supporting scientific research for climate and ecological protection.

- **Environment (Protection) Act,1986:** Enables the government to develop climate and air quality monitoring mechanisms.

- **Disaster Management Act,2005:** Requires scientific forecasting systems, including monsoon prediction and early warning tools, for disaster preparedness and mitigation.

- **National Action Plan on Climate Change (NAPCC):** Promotes climate modelling and research, feeding into missions such as the National Water Mission and National Mission on Sustainable Agriculture.

## Additional Analytical Points

- Improved monsoon prediction assists in **agricultural planning**, reducing crop losses and strengthening food security across South Asia.

- Enhanced understanding of vertical motion enables better modelling of **pollutant dispersion**, helping refine India's air quality management strategies under NCAP.

- The study supports India's move towards **self-reliance in atmospheric research**, leveraging indigenous technology and long-term scientific infrastructure.

- Findings are crucial for predicting **extreme weather events**, which are increasing due to climate change, improving resilience for millions dependent on monsoon patterns.

- Insights into vertical circulation strengthen global climate models, enabling India to contribute meaningfully to international climate science.

## Conclusion

The breakthrough measurements of vertical air movement over the Himalayas mark a significant advancement in monsoon science. By decoding complex airflow patterns within the ASMA, Indian scientists have opened pathways for more accurate monsoon forecasts, improved disaster

preparedness, enhanced air quality assessments, and stronger climate models. This research elevates India's scientific leadership in understanding one of the world's most influential climate systems.

## 4. Micro forest Initiative at PM SHRI Navodaya Vidyalaya

**Summary & Key Highlights**

- **Micro forest and Ecological Learning Space:** Secretary Shri Sanjay Kumar inaugurated a micro forest (Fruit Orchard and Pollinator Park) developed under Special Campaign 5.0 at PM SHRI Navodaya Vidyalaya, Gautam Buddh Nagar. The project transformed over 3,200 sq. metres of barren land into a vibrant ecological learning space, housing over 500 fruit-bearing trees and 350+ pollinator-friendly plants, thereby enhancing biodiversity and microclimate.

- **Mission LiFE and Eco Clubs:** The initiative is a model for 'Eco Clubs for Mission LiFE,' which are operational in over 9.23 lakh schools. These clubs promote hands-on, experiential learning aligned with the seven themes of Mission LiFE (Lifestyle for Environment) as part of environmental sensitisation.

- **Alignment with National Education Policy (NEP) 2020:** The microforest and associated activities embody the NEP 2020's vision of extending learning beyond textbooks to real-world experiences, fostering joyful, nature-connected learning, human values, and holistic development.



- **Swachhata and E-waste Management:** The Department of School Education & Literacy (DoSEL) focused on 'Swachhata efficiency' and 'environmental stewardship' under Special Campaign 5.0, conducting over 6.16 lakh swachhata campaigns and an E-waste Collection Drive (collecting over 4,000 kg of e-waste).

- **Sustainable Development Goals (SDGs) Linkage:** The project aligns with SDG 4 (Quality Education) by promoting green learning environments and experiential nature-based learning, and SDG 13 (Climate Action) by promoting climate action and enhancing biodiversity.

- **Scaling Up:** The initiative is planned to be scaled up across other Navodaya Vidyalayas, Kendriya Vidyalayas, and schools nationwide, underscoring DoSEL's commitment to advancing environmental awareness and sustainable practices.

**Definitions of Key Terms**

- **Micro forest:** A small, dense, native forest created using specific afforestation techniques (like the Miyawaki method, though not explicitly mentioned here) to maximise growth in a limited area.

- **Mission LiFE (Lifestyle for Environment):** A global mass movement led by India to nudge individual and collective action towards adopting and promoting environment-friendly behaviours and sustainable lifestyles.

**Constitutional & Legal Provisions**

- **Article 48A: Directive Principle of State Policy (DPSP)** states that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.

- **Article 51A(g): Fundamental Duty** states that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers, and wildlife, and to have compassion for living creatures.

- **The Environment (Protection) Act, 1986:** Provides a framework for the central government to protect and improve the quality of the environment, and prevent, control, and abate environmental pollution.

**Conclusion**

This initiative is a pragmatic example of integrating environmental stewardship and experiential learning within the school curriculum, directly addressing the goals of **Mission LiFE** and the **NEP 2020**. For the UPSC CSE, it serves as an excellent case study for:

1. **GSIII (Environment & Ecology):** Practical implementation of sustainable development, biodiversity enhancement, and green initiatives (Microforests, E-waste management).

2. **GSII (Governance/Social Justice):** Role of education (NEP 2020) and government campaigns (Special Campaign 5.0) in promoting environmental awareness, citizenship, and achieving SDGs.

# 5. Karnataka's Roadmap for Disaster Loss Mitigation by 2030

**Summary & Key Highlights**

- **Ambitious Reduction Target:** Karnataka has set an aggressive goal to cut cumulative losses from natural disasters by **75% by 2030**, establishing a clear time-bound target for disaster risk reduction (DRR). The baseline for this target is the significant loss of over ₹1.22lakh crore incurred between 2015 and 2021, with agriculture bearing the brunt (₹1.02 lakh crore loss).

- **KSDRR Roadmap 2025-30:** The roadmap, prepared by the Karnataka State Disaster Management Authority (KSDMA), aims for a "disaster-resilient Karnataka" by focusing on reducing mortalities, economic loss, and casualties. It represents a paradigm shift from a reactive, relief-centric approach to a proactive, mitigation-focused one.

- **Alignment with Sendai Framework:** This State-level action is a tangible step toward achieving the goals of the global **Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030**, particularly its core target of substantially reducing disaster damage to critical infrastructure and economic losses.

- **Vulnerability Profile and Multi-Hazard Approach:** The roadmap preparation involved drawing up a comprehensive vulnerability profile: 80% of the state's area is prone to drought, 22% to moderate earthquake risk, and 24% to cyclones/heavy winds. The strategy covers a range of hazards, including human-induced disasters like road and industrial accidents.



- **Integrated and Department-Wise Action Plan:** The plan prescribes short-term (2025-26), medium-term (2025-28), and long-term (2025-30) priorities. It mandates all departments, districts, and gram panchayats to prepare **Disaster Management Plans** with baseline data by 2026. A key financial recommendation is the potential imposition of a **'green tax'** to fund resilience measures.

- **Focus on Financial Protection:** The roadmap includes developing policies for **insuring public and private properties** against extreme weather events, which is crucial for reducing direct economic loss and promoting resilient recovery (a key element of the Sendai Framework).

## Definitions of Key Terms

- **Disaster Risk Reduction (DRR):** The concept and practice of systematically analyzing and managing the causal factors of disasters, including reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

- **Sendai Framework for DRR (2015–2030):** A non-binding agreement adopted by UN member states, including India, which sets four priority action areas and seven global targets for preventing new and reducing existing disaster risks.

## Constitutional & Legal Provisions

- **Disaster Management Act, 2005 (Central Law):** Provides the statutory and institutional framework for disaster management in India. It mandates the creation of the **State Disaster Management Authority (SDMA)** (the KSDMA in this case), the State Executive Committee (SEC), and District Disaster Management Authorities (DDMAs) to adopt a holistic and integrated approach to disaster management.

- **Concurrent List (Entry 23):** Though not directly mentioned, the subject of social security and social insurance is in the Concurrent List, making both the Union and State governments responsible for disaster-related rehabilitation and financial protection measures.

## Conclusion

Karnataka's Disaster Risk Reduction Roadmap is a leading State-level initiative that demonstrates the mainstreaming of DRR into development planning, moving beyond a post-disaster response.

# 6. Satellite Monitoring of Landfill Methane: A Climate Smart Solution

## Summary & Key Highlights

- **Methane as a Climate Hotspot:** Methane ($\text{CH}_4$), generated by decomposing organic waste in landfills, is a potent Short-Lived Climate Pollutant (SLCP), with a Global Warming Potential (GWP) that is approximately **84 times** more potent than carbon dioxide ($\text{CO}_2$) over a 20-year period. The waste sector contributes about **15% to 20%** of India's total methane emissions, offering the fastest path to immediate climate gains.

- **Shift from Modeling to Satellite Observation:** Historically, India relied on imprecise, aggregated models for emissions estimates. Now, advancements in satellite technology (e.g., ISRO's studies, CarbonMapper's Tanager) provide **fine-resolution detection** (down to a few square meters), allowing the identification of specific, high-emitting hotspots like Pirana (Ahmedabad), Deonar (Mumbai), and Ghazipur (Delhi).

- **Significant Data Discrepancy:** Satellite observations reveal a massive data gap: actual landfill emissions can significantly exceed model-based predictions. For example, satellite data show emissions from just two Delhi dumpsites (Ghazipur and Bhalswa) almost equal the entire solid waste sector's theoretical footprint in the 2018 inventory.

- **Judicial and Policy Action:** The **National Green Tribunal (NGT)** has taken *suo motu* cognizance of the satellite findings, establishing committees to conduct ground-level investigations at flagged

dumpsites and imposing significant penalties on states for non-compliance with Solid Waste Management Rules.

- **Integrated Feedback Loop (Space-to-Ground):** The core strategy involves creating a robust feedback loop: **Satellite Detection** identifies hotspots/leaks, **Ground Teams** conduct immediate investigation and targeted mitigation (e.g., repairing gas collection failures or illegal dumping), and **Standardised Data Sharing** integrates insights into planning.

- **Co-benefits and Policy Alignment:** Methane management offers dual benefits: reducing a potent greenhouse gas and providing a valuable fuel source. Schemes like **GOBAR-Dhan** already promote the conversion of bio-waste into Bio-CNG (Compressed Natural Gas), demonstrating the economic viability of integrated waste management.

## Definitions of Key Terms
- **Methane ($\text{CH}_4$):** An invisible, potent greenhouse gas produced during the anaerobic decomposition of organic waste in landfills; a primary target for climate change mitigation due to its high GWP in the short term.

- **Short-Lived Climate Pollutant (SLCP):** Climate forcing agents ($\text{CH}_{\text{Black Carbon}}$, Tropospheric Ozone) that remain in the atmosphere for a shorter time than $\text{CO}_2$ but have a disproportionately large warming effect.

## Constitutional & Legal Provisions
- **National Green Tribunal Act, 2010:** Established the NGT with jurisdiction over environmental issues, providing a statutory body with *suo motu* powers to ensure effective and expeditious disposal of cases relating to environmental protection, including the enforcement of the **Solid Waste Management Rules, 2016**.

- **Solid Waste Management Rules, 2016:** Mandate the segregation of waste at the source (wet, dry, and domestic hazardous waste) and provide for the proper management and disposal of municipal solid waste, including the collection of landfill gas (methane) and its use for energy generation.

## Conclusion and UPSC Relevance

The convergence of satellite-based remote sensing with environmental enforcement (NGT) and national clean-up missions (Swachh Bharat Mission, GOBAR-Dhan) presents a transformative model for climate action and urban governance.

# INTERNATIONAL RELATIONS

## 1. India's Accelerated Push for Free Trade Agreements (FTAs)

**Key Developments in FTA Negotiations**

- **Near-Term Conclusions:** India is aggressively pursuing the conclusion of Free Trade Agreements (FTAs) and is expected to finalize at least two deals by the end of the year: one with **Oman** and another with **New Zealand**.

- **Targeted Finalization:** The FTA with **Oman** is reportedly close to conclusion, with an announcement anticipated by mid-December, marking a quick turnaround in securing a preferential trade deal in the Gulf region.

- **New Zealand FTA:** Officials are actively engaged in wrapping up the remaining issues with **New Zealand**, aiming to conclude the deal this month and strengthen economic ties in the Asia-Pacific region.

- **Intense Engagement with Major Partners:** High-level bilateral engagements are underway with major economies, including the **European Union (EU)** and the **United States (US)**, indicating a broad-based trade diplomacy push.

- **India-EU FTA Pace:** Negotiations for the **India-EU FTA** are ongoing with face-to-face meetings scheduled, though a final conclusion might stretch into early 2026, potentially coinciding with the India-EU Leadership Summit.

- **Canada CEPA:** India and **Canada** are also engaged in finalizing the Terms of Reference (ToR) for a **Comprehensive Economic Partnership Agreement (CEPA)**, which aims to **double bilateral trade to $70 billion by 2030**.



**Important Keypoints & Definitions**

- **Free Trade Agreement (FTA):** A pact between two or more countries to reduce or eliminate barriers to trade, such as tariffs, quotas, and preferences, for goods and services. India's goal is to sign **"fair, equitable, and mutually beneficial"** agreements.

- **Comprehensive Economic Partnership Agreement (CEPA):** An agreement that is broader and deeper than an FTA, typically covering trade in goods, services, investment, competition, intellectual property rights, and economic cooperation. The ongoing talks with Canada are for a CEPA.

- **Localization and Global Value Chains (GVCs):** FTAs are crucial for integrating India into GVCs by providing predictable market access and reducing input costs, which supports the 'Make in India' initiative and export competitiveness.

- **Rules of Origin (RoO):** A key, often contentious, element of any FTA that specifies the criteria used to determine the national source of a product. RoO are necessary to prevent third-party countries from channeling goods through the FTA partner to avoid tariffs.

- **Trade Deficit:** The difference between the value of a country's imports and exports. India seeks **balanced** FTAs that address its trade deficits with partners by securing market access for its services and goods.

**Constitutional & Legal Provisions**

- **Article 253 (Legislation for giving effect to international agreements):** This Article of the Constitution empowers Parliament to make any law for the whole or any part of the territory of India for **implementing any treaty, agreement or convention** with any other country or countries or any decision made at any international conference, association or other body. FTAs are implemented domestically through legislation under this power.

- **Union List (Entry 14):** The Seventh Schedule, under the Union List, assigns the subject of "Entering into treaties and agreements with foreign countries and implementing of treaties, agreements and conventions with foreign countries" to the Central Government (Union List, Entry 14). The **Ministry of Commerce and Industry** is the nodal ministry for FTA negotiations.

**Conclusion and UPSC Relevance**

India's decisive push for concluding multiple FTAs simultaneously with diverse partners (Gulf, Asia-Pacific, North America, and EU) signals a major shift in its trade policy from a historically cautious approach to an **aggressive strategy of integration** into the global economy. These agreements are vital for securing sustained export growth, attracting Foreign Direct Investment (FDI), and achieving the national target of becoming a **developed economy (Viksit Bharat)**. The focus on **mutually beneficial** and **balanced** deals suggests a strategic attempt to use trade policy as a tool for economic diplomacy and diversification of market access.

## 2. New Chapter in the Dragon-Elephant Tango: China's 15th Five-Year Plan

- **China's 15th Five-Year Plan (2026-2030) Focus:** The proposal for the 15th FYP, approved by the **CPC's 20th Central Committee**, signals China's commitment to continuous **high-quality development** and **high-level opening up**. This echoes the shift from rapid growth to a more **sustainable, balanced, and innovation-driven economy** (e.g., strengthening high-tech industries, self-reliance in science and technology, and green development). The FYP system provides **policy stability and continuity**—the fundamental reason for China's sustained success.

- **Shared Development Vision:** Both China and India are at critical stages of national development, with a shared priority on growth. China is pursuing the **"great rejuvenation of the nation through Chinese modernization,"** while India strives toward its **'Viksit Bharat 2047' vision** (transforming India into a developed nation by 2047, based on pillars like Youth, Poor, Women, and Farmers). This parallel national focus creates broad scope for cooperation.

- **Deepening Economic and Industrial Synergy:** Economic cooperation is robust, with China being one of India's most important trading partners, where bilateral trade reached **$138.46 billion in 2024**. Future collaboration is poised for industrial synergy: leveraging China's complete industrial system and strength in electronics/new energy/AI, and India's expertise in **IT, software development, and biopharma**, aiming to enhance both countries' positions in global value chains.

- **Multilateral Coordination on Global Governance:** As significant members of multilateral platforms like **BRICS, SCO, and G20**, both nations share a common interest in reforming the global governance system. They should enhance coordination to tackle global challenges such as **climate**

**change, food security, and public health**, and jointly work towards a more **equal and orderly multipolar world** and a universally beneficial economic globalization.

- **People-to-People Ties as a Foundation:** Close contact between the people is recognized as key to sound bilateral relations, celebrating a history of thousands of years of friendly exchanges. Recent positive steps include the **resumption of Indian pilgrimages** to Xizang (Tibet) and the **reinstatement of tourist visas** for Chinese citizens, which will boost two-way visits by tourists, artists, and scholars.

## Definitions of Key Terms

- **Five-Year Plan (FYP):** A series of social and economic development initiatives in the People's Republic of China. Since the 1st FYP (1953–1957), these plans have been a central mechanism for the state to manage and direct the national economy.

- **Chinese Modernization:** China's overarching development strategy to achieve the "great rejuvenation of the nation," characterized by a focus on high-quality development, technological self-reliance, common prosperity, and harmonious coexistence between humanity and nature.

- **Viksit Bharat 2047:** The Government of India's vision to transform the country into a **developed nation** by 2047, the centenary of its independence. It aims for a **$30 trillion economy** built on inclusive growth, infrastructure, technology, and good governance.

## Constitutional & Legal Provisions

- **Constitution of India (DPSP, Article 51):** Encourages the State to promote international peace and security and foster respect for international law and treaty obligations, which underpins the necessity of engaging constructively with major neighbors like China despite differences.

- **Panchsheel Principles:** The Five Principles of Peaceful Coexistence (Mutual respect for territorial integrity and sovereignty, Mutual non-aggression, Mutual non-interference, Equality and mutual benefit, and Peaceful coexistence) were formally articulated in the 1954 India-China Agreement on Tibet and continue to be cited as the ideal framework for diplomatic conduct.

- **Bilateral Trade Framework:** Trade is governed by the **Most Favoured Nation (MFN)** status under the **WTO**, along with various bilateral agreements on trade and investment, despite the persisting challenge of India's large **trade deficit** with China.

## Conclusion

The approval of China's 15th Five-Year Plan and the positive emphasis on India-China cooperation, despite existing geopolitical frictions, underscore the shared developmental urgency of both Asian giants. By focusing on convergence in areas like trade, technology, and multilateral governance, and enhancing people-to-people exchanges, both nations can leverage their complementary strengths. The ability of India and China to manage their strategic competition while maximizing mutual economic benefits will not only be crucial for achieving 'Viksit Bharat' and 'Chinese Modernization' but will also serve as a pivotal anchor for global stability and inclusive economic growth.

## 3. China's Economic Slowdown: Drivers and Global Implications

**Context**

China is undergoing a **structural economic slowdown**, reflecting deep stress in its traditional growth engines and a difficult transition towards a new development model. Given China's central role in global trade and supply chains, this slowdown has wide-ranging implications for the world economy and for India.

**Contraction in Core Growth Drivers**

- China's slowdown is rooted in persistent weakness across its **traditional growth pillars**—manufacturing, infrastructure, and real estate.

- **Manufacturing:**

    o Manufacturing activity has remained in **contraction for eight consecutive months**, with the **Purchasing Managers' Index (PMI)** at **49.2**.

    o Overcapacity has led to intense internal competition or **"involution"**, triggering price wars and profit erosion.

    o **Industrial profits declined by 5.5%**, reflecting falling margins.

- **Investment and Real Estate:**

    o **Fixed Asset Investment** recorded its **steepest decline since 2020**, driven mainly by a prolonged property sector crisis.

    o Property investment fell by **14.7%**, while home prices declined by **around 8%**, eroding household wealth and investor confidence.

**Weak Domestic Demand and Deflationary Mindset**

- Domestic consumption remains subdued due to declining confidence.

- **Retail sales growth** slowed to **2.9% in October**, marking the **fifth consecutive month of deceleration**.

- Households are displaying a **deflationary mindset**—postponing major purchases in anticipation of lower future prices.

- Savings have surged, with **bank deposits touching nearly 120% of GDP**, reflecting uncertainty caused by:

    o Wealth losses from the property crisis

    o A soft labour market and job insecurity

**External Sector Volatility and Re-direction of Trade**

- China's **external sector** shows growing volatility.

- **Exports** contracted by **1.1% in October**, following earlier **front-loading** of shipments to pre-empt possible U.S. tariff actions.

- Chinese manufacturers have aggressively **re-directed exports**:

    o **Double-digit growth** in shipments to **Southeast Asia and Africa**

- As a result, China's **annual trade surplus** is still projected to exceed a **record USD 1 trillion**.

- **Imports**, however, grew by only **1%**, underscoring weak domestic demand for global commodities.

**Shift to 'New Productive Forces' and Transition Costs**

- Beijing is deliberately shifting away from the **debt-driven property and infrastructure model**.

- The new strategy emphasises **"new productive forces"**, including:

  o High-tech manufacturing

  o Artificial Intelligence

  o Green technologies such as **electric vehicles and solar energy**

- An **"anti-involution" policy** aims to curb wasteful competition and excess capacity.

- While strategically necessary, this transition has imposed **short-term economic costs**, intensifying the slowdown in legacy sectors.

## Future Outlook and Geopolitical Implications

- According to the **International Monetary Fund**, China's GDP growth is projected to:

  o Fall to **4.2% by 2026**

  o Decline further to **3.4% by 2030**

- Despite slower growth, China retains strategic strengths:

  o Leadership in **high-tech manufacturing**

  o Dominance in **rare-earth minerals**, a critical input for global industries

- China has leveraged rare-earth controls as a trade instrument, helping secure a **trade truce with the United States**, including pausing export restrictions and resuming U.S. soybean purchases.

## Key Concepts Explained

- **Involution:** Excessive internal competition due to overcapacity, leading to falling prices, shrinking profits, and stagnation (seen in EVs, solar, and manufacturing).

- **Deflationary Mindset:** Consumer behaviour driven by expectations of falling prices, resulting in delayed spending and higher savings.

- **Front-loading:** Accelerating exports in anticipation of adverse policy changes such as tariffs.

- **Purchasing Managers' Index (PMI):** An indicator of economic activity; **above 50 = expansion**, **below 50 = contraction**.

## Institutional and Policy Framework

- **Centralised Economic Planning:**

  o The **Communist Party of China** exercises tight control over economic direction through **Five-Year Plans**, guiding investment, industrial policy, and structural reforms.

- **Trade Policy Instruments:**

  o Strategic sectors such as **rare-earth minerals** are subject to state control through export licences and non-tariff barriers, aligning trade policy with national security and industrial goals.

**Conclusion**

China is navigating a **deep, structural economic slowdown** marked by industrial contraction, a prolonged property crisis, and weak consumer confidence. While the strategic pivot towards high-tech **"new productive forces"** is essential for long-term sustainability, it has intensified short-term economic stress. The success or failure of this transition will shape not only China's ability to avoid the **middle-income trap**, but also global demand, supply chain stability, and India's own economic and strategic planning.

## 4. Sudan Civil War: World's Largest Displacement and a Deepening Humanitarian Catastrophe

**Context:** Sudan has been engulfed in a devastating civil war since **April 2023**, culminating in the **largest displacement crisis globally** and a severe breakdown of state, economy, and society. The conflict reflects a failed democratic transition, militarisation of politics, and unresolved ethnic fault lines.

**Root Cause: Power Struggle and Military Integration**

- The war is fundamentally a **power struggle between two rival security elites**:

    o The **Sudanese Armed Forces (SAF)** led by **Abdel Fattah al-Burhan**

    o The **Rapid Support Forces (RSF)** led by **Mohamed Hamdan Dagalo** (Hemedti)

- The immediate trigger was disagreement over the **integration of the RSF into the national army**, a key step in the planned democratic transition.

- Both leaders, who jointly overthrew the civilian government in the **2021 coup**, were unwilling to relinquish political power and economic influence.

**Geopolitical Fragmentation and Territorial Control**

- Sudan is increasingly divided into **zones of control**:

    o **SAF:** Eastern and central Sudan, including parts of Khartoum and **Port Sudan** (de facto administrative capital).

    o **RSF:** Large parts of **Darfur and Kordofan**, including the capture of **El Fasher**, the last major SAF stronghold in Darfur.

- This fragmentation raises the risk of a **de facto partition** and has intensified fighting in **resource-rich Kordofan**, further prolonging the conflict.

**Humanitarian Catastrophe and Mass Displacement**

- The war has produced the **largest and fastest-growing displacement crisis in the world**:

    o **~10 million people displaced** (internally and across borders) by late 2025.

    o **Over 50,000 reported deaths**.

- Essential services have collapsed:

    o Healthcare systems destroyed

    o Widespread lack of water, sanitation, and electricity

- There are extensive reports of **war crimes and ethnically targeted violence**, including:

    o Drone strikes on civilians

    o Mass sexual violence, particularly attributed to RSF-linked militias

    o Atrocities in Darfur against communities such as the **Masalit**

## Economic Collapse and Famine Conditions

- Sudan's economy has imploded:

    o **GDP contracted by ~29% (2023–24)**.

    o Severe damage to infrastructure, especially in **Khartoum**, the economic hub.

- Supply chain disruptions and currency collapse have triggered:

    o Hyperinflation

    o Acute food shortages

- By **September 2025**, parts of Sudan entered **Famine (IPC Phase 5)**:

    o Over **31% of the population** faces crisis-level food insecurity.

    o Food prices have skyrocketed, pushing millions to starvation.

## Regional Security and External Involvement

- The conflict threatens stability across the **Horn of Africa**:

    o Millions of refugees have fled to **Chad, South Sudan, and Ethiopia**, straining fragile host states.

- External actors have been accused of **indirect involvement**, including:

    o Arms transfers

    o Diplomatic backing to rival factions

- Such involvement has **undermined international mediation** and prolonged the war.

## Key Concepts Explained

- **Rapid Support Forces (RSF):**
  A powerful paramilitary force evolving from the **Janjaweed militias**, implicated in the Darfur genocide of the 2000s, reinforcing deep ethnic cleavages.

- **Famine (IPC Phase 5):**
  Declared when:

    o ≥20% households face extreme food shortages

    o ≥30% children are acutely malnourished

    o ≥2 deaths per 10,000 people per day due to starvation-related causes

**International Legal and Normative Dimensions**

- **International Humanitarian Law (IHL):**
  - Prohibits attacks on civilians and civilian infrastructure (hospitals, schools).
  - Reported actions in Sudan amount to **potential war crimes**.

- **Genocide, War Crimes, Crimes Against Humanity:**
  - Atrocities in Darfur have prompted calls for investigation by the **International Criminal Court**.

- **1951 Refugee Convention:**
  - Governs the protection of Sudanese refugees and obligations of host countries.

**Conclusion**

The Sudan civil war is the outcome of a **collapsed democratic transition, militarised politics, and unresolved ethnic tensions**, producing an unprecedented humanitarian and economic catastrophe. Continued fighting, territorial consolidation by armed factions, and external interference pose a grave challenge to **international humanitarian law, regional stability, and global conscience**. A durable resolution requires **coordinated international pressure, accountability for atrocities, and an enforceable political settlement**, without which Sudan risks long-term state failure.

# SOCIAL

## 1. Rethinking Urban Metrics: Resilience, Climate Extremes, and Liveability

- **Flaws in Current Urban Indices:** Traditional indices like the **Global Liveability Index** or **City Prosperity Index** (UN-Habitat) focus heavily on productivity, 'grey' infrastructure (e.g., airports, metro lines), healthcare, and culture. They fail to adequately measure a city's ability to withstand and recover from **extreme climate shocks** (cyclones, cloudbursts), a dimension addressed by the **City Resilience Index (CRI)**. This often leads to a misleading assessment of **"developed" urban life** that doesn't account for 21st-century climate realities.

- **Exclusion of High-Risk Areas:** Major global indices typically focus only on **capital regions and global hubs** (e.g., Delhi, Mumbai), overlooking **secondary cities** (like Hat Yai, Cebu) and peri-urban settlements. These overlooked areas, which absorb much of the real risk of rapid urbanization and climate change impacts (e.g., landslides on unstable slopes, floodplains), are excluded from the systems by which **"modern" urban life** is assessed.

- **Resilience vs. Amenities:** Floods in Asia (Sri Lanka, Indonesia, Thailand, Philippines) revealed that infrastructure, often designed for weaker storms, was quickly overwhelmed by heavy rainfall (e.g., >300 mm in 24 hours). Liveability scores record the **presence of amenities** (hospitals, parks) but are largely **silent on the robustness of critical systems** like drainage networks, hillside stability, and safe, climate-resilient alternatives to informal housing.

- **The Inequity of Averages and Investment Bias:** Using **city-wide averages** in indices misprices risk and shifts the burden to the most vulnerable. While rising land values in flood-prone areas may boost a city's prosperity score, the **peri-urban settlers** and residents in informal housing are the first to suffer when extreme weather hits. This high score attracts further investment to prioritize visible projects (e.g., promenades) over less visible but crucial work like **desilting canals and enforcing building codes**, thereby deepening risk exposure.

- **Constitutional and Legal Context (India):** The constitutional backing for urban governance in India is the **74th Constitutional Amendment Act, 1992**, which added **Part IX A** and the **Twelfth Schedule**. It mandates the establishment of **Urban Local Bodies (ULBs)** to perform functions like urban planning (including town planning), regulation of land use, and provision of public health/water supply—all vital for climate resilience. However, the true spirit of **decentralization** is hindered by a lack of financial, administrative, and technical autonomy of ULBs, complicating the implementation of climate-resilient planning.

### Conclusion & UPSC Relevance

The divergence between high "liveability" rankings and low on-ground **climate resilience** reveals a structural flaw in global and national urban planning paradigms. The focus on economic metrics and superficial modernity (e.g., 'grey' infrastructure) often overshadows the critical need for **robust environmental infrastructure** and **equitable risk management**.

## 2. Streamlining Public Communication: Reforming the Government's Information Network

- **Objective and Scope (Definition):** The Union government is undertaking a comprehensive **revamp of its public communications framework** with the core aim of ensuring **real-time media response mechanisms** and executing **data-driven campaign planning**. This effort constitutes a major shift towards a **streamlined public communications framework**, ensuring the flow of timely and accurate government information to the public and media.

- **Organizational and Human Resource Reform:** A critical component of the revamp involves the **reorganisation of human resources** and the restructuring of the **Indian Information Service (IIS) cadre**. This advanced proposal includes altering the number of posts, creating new roles, modifying responsibilities, and improving promotion avenues, signifying a commitment to strengthen the professional capacity of official communicators.

- **Strengthening Technological Infrastructure:** The revamp extends beyond personnel to the **strengthening of**

**technological infrastructure**. This focus ensures that the communications system is unified and capable of handling modern media environments, supporting real-time data analysis and rapid dissemination of information across various digital and traditional platforms.

- **Need for Increased Manpower:** Officials anticipate a **significant rise in the intake of Indian Information Service (IIS) officials** due to the growing number of government departments and functions that require integration into the unified communications system. This expansion is essential to meet the demands of increased governmental outreach and complex, multi-platform communication.

- **Legal & Constitutional Basis for Communication:** The government's communication efforts are implicitly linked to the fundamental right of citizens to be informed, derived from the Supreme Court's interpretation of **Article 19(1)(a) (Freedom of Speech and Expression)**, which includes the **Right to Know**. Legally, the structure and function of the IIS are governed by specific service rules laid out under the **All India Services Act, 1951**, although the IIS itself is a Central Service.

**Conclusion**

The ongoing, comprehensive reform of the public communications framework, encompassing both organizational restructuring of the IIS and technological upgrades, is crucial for improving government accountability and efficacy. By prioritizing real-time, data-driven communication, the government aims to enhance transparency and ensure that its policies and initiatives are accurately and uniformly conveyed to the public.

# 3. Reimagining Mental Health: Dignity, Justice, and Social Context

- **Critique of Dominant 'Deficits Lens':** Current dominant mental health approaches are criticized for viewing experiences through a **"deficits lens"**, focusing narrowly on clinical pathology and mere **"integration"** into communities that enforce reductive and stereotypical ideas of "the normal" and "productive living." This approach fails to unpack the complex, lived narratives of suffering that numerical data (like NCRB suicide statistics) often simplify.

- **Radical Reimagination: Dignity and Disability Justice:** The article advocates for a **radical reimagining** of mental health care. Care must be centered as the primary pursuit of **Dignity** and **Disability Justice**, emphasizing **equity, inclusion, and diversity**. This approach shifts the focus from merely "fixing" the person to addressing the **relational, material, and structural suffering** created by an unequal and unquestioned social order.

- **The Intersectional and Multi-dimensional Nature of Distress:** Mental distress is not singular but arises from the complex, overlapping intersection of multiple factors: **biological** (neurotransmitter changes), **psychological** (learned patterns), **social** (isolation, precarity), **cultural, political** (oppressive structures), and **historical** (intergenerational trauma). These explanations intersect with identities like caste, class, gender, and queer status, shaping both the experience of suffering and access to care.

- **Addressing Systemic and Relational Gaps (NCRB Data):** The article highlights that gaps in mental health access remain vast (70-90% globally). The analysis of **NCRB suicide data** indicates that a significant portion of suicides is due to **family problems and relational ruptures**, often rooted in feelings of shame, alienation, and abandonment. Effective care must engage with these existential,
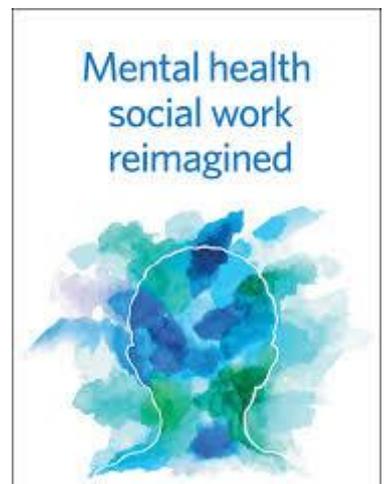
relational disruptions rather than placing the entire onus for "maladaptive patterns" solely on the individual.

- **Re-centering Care Practice as Relational Justice:** Care should be a practice of **Relational Justice**, recognizing that "what we owe to one another" is central to healing. This requires moving beyond just distributing resources (like fair housing or medication) to incorporating **relational work** that explores existential questions around vulnerability, purpose, and incoherence within a person's socio-ecological context. The focus shifts from "treatment" to "What does this person need to live the life they want?"

- **Policy and Systemic Reforms Needed:** Transforming the sector requires: 1) **Reorienting research** to capture granular aspects of care (implementation science). 2) **Reimagining education** to prepare practitioners for discomfort and complexity. 3) Critically, **recognizing and compensating those with lived experience** and non-specialist community wisdom as valuable practitioners, affording them the same systemic support given to professional credentials.

## Conclusion

Key takeaways include the necessity of integrating the **social determinants of health** into mental healthcare policy, understanding the intersectional nature of suffering, and recognizing the need for systemic changes in the **Mental Healthcare Act, 2017**, to truly prioritize **dignity, non-discrimination, and community-based support** over institutionalization and a purely biological model. The focus on relational justice and lived experience is a modern public health imperative.

## 4. Deepavali: Inscription on UNESCO's Intangible Cultural Heritage List

**Context**

- **Historic Inscription:** Deepavali was inscribed on the **Representative List of the Intangible Cultural Heritage of Humanity** during the 20th Session of the UNESCO Intergovernmental Committee in New Delhi (Dec 10, 2025). The inscription affirms the festival's status as one of India's most widely celebrated living traditions.

- **Universal Significance ('Tamso Ma Jyotirgamaya'):** The festival embodies the ancient message of "**Tamso Ma Jyotirgamaya**" (from darkness to light), symbolizing the universal values of **hope, renewal, and harmony**. It is recognized for promoting social cohesion, unity, and intergenerational transmission of knowledge.

- **Living, People-Centric Heritage and Livelihoods:**
  Deepavali thrives as a vibrant, community-led festival that sustains a crucial **ecosystem of livelihoods** for millions, including potters (crafting *diyas*), artisans, sweet-makers, and farmers. This economic dimension highlights its role beyond just ritual.


Deepavali: India's Intangible Heritage

- **Inclusivity and Global Reach:** The nomination process was highly consultative, engaging diverse groups like the Indian diaspora, individuals with special needs, and **transgender communities**, underscoring its deeply **inclusive character**. Its global celebration strengthens cultural bridges worldwide.

- **Contribution to SDGs:** UNESCO acknowledged the festival's role as a living heritage that significantly contributes to several **Sustainable Development Goals (SDGs)**, particularly in areas of livelihood enhancement, gender equality, cultural education, and overall community welfare.

**Key Definitions and Concepts**

- **Intangible Cultural Heritage (ICH):** Refers to practices, representations, expressions, knowledge, and skills that communities recognize as part of their cultural heritage, which are constantly being recreated (as per UNESCO's 2003 Convention).

- **'Tamso Ma Jyotirgamaya':** A famous mantra from the *Bṛhadāraṇyaka Upaniṣad*, translating to 'Lead me from darkness to light,' representing the festival's core spiritual and philosophical principle.

**Constitutional & Legal Provisions (Related to Cultural Heritage)**

- **Article 51A (f) (Fundamental Duty):** Obligates every citizen of India "to value and preserve the rich heritage of our composite culture."

- **Article 49 (Directive Principle of State Policy - DPSP):** Places an obligation on the State to protect every monument or place or object of artistic or historic interest, declared to be of national importance, from spoliation, disfigurement, destruction, removal, disposal or export.

- **Nodal Agency:** The nomination was prepared by the Ministry of Culture through the **Sangeet Natak Akademi**.

**Conclusion**

The UNESCO inscription of Deepavali provides global affirmation of India's inclusive, living cultural traditions, reinforcing the nation's responsibility to safeguard and promote community-based heritage. This recognition is a tribute to the collective cultural labour that sustains the festival's vitality.

# 5. Indian Navy Commissions Second MH-60R Helicopter Squadron (INAS 335)

**Context**

- **Commissioning of INAS 335 (Ospreys):** The Indian Navy is commissioning its second squadron of the advanced Multi-Role Helicopter (MRH), **MH-60R Seahawk**, designated as **INAS 335 (Ospreys)**, at **INS Hansa, Goa**. This follows the commissioning of the first squadron (INAS 334) at Kochi, marking a rapid and crucial phase of naval aviation modernization.

- **Versatile Multi-Mission Platform:** The MH-60R is considered the world's most advanced maritime helicopter. It is a highly versatile platform equipped with advanced sensors (e.g., active sonar, multi-mode radar, FLIR) and weapons (Mark 54 torpedoes, Hellfire missiles), making it effective for **Anti-Submarine Warfare (ASW)** and **Anti-Surface Warfare (ASuW)**, along with Search and Rescue (SAR) and surveillance.



- **Enhancing Blue-Water Capabilities:** The induction of the MH-60R helicopters is crucial for strengthening India's **blue-water capabilities**—the ability to project power far from its coast. These platforms extend the Navy's operational reach and are designed to operate from frontline ships (frigates, destroyers) and aircraft carriers, significantly boosting operational readiness and fleet support.

- **Reinforcing Maritime Presence in IOR:** The deployment of these "submarine-hunting" Seahawks in the **Indian Ocean Region (IOR)** will reinforce the Indian Navy's maritime presence, deter potential threats (like increased Chinese submarine activity), and contribute to maintaining a secure and stable environment in this strategically vital region.

- **Acquisition via FMS and Strategic Partnership:** The MH-60R helicopters are being acquired from the **United States (US)** under a government-to-government **Foreign Military Sales (FMS)** agreement (24 helicopters in total), highlighting the deepening **Indo-US strategic defence partnership** and India's commitment to accessing advanced military technology.

- **Addressing Security Gaps:** The MH-60R replaces aging Sea King 42/42A helicopters, filling a critical operational void in the Navy's ASW capability that is essential for countering both conventional and asymmetric threats in the maritime domain.

## Definitions of Key Terms

- **MH-60R Seahawk:** A modern, multi-mission naval helicopter manufactured by Lockheed Martin/Sikorsky (US), vital for ASW and ASuW roles.

- **Blue-Water Navy:** A naval force capable of sustained operations globally, across the deep waters of open oceans, and projecting force away from the country's own coastline.

## Constitutional & Legal Provisions

- **Entry 2 of the Union List (Schedule VII):** Pertains to **Naval, military and air forces**, placing the ultimate responsibility for the defence and security of the nation, including the modernization of the Indian Navy, with the Union government.

- **The Indian Navy Act, 1957:** Provides the legislative framework for the constitution, governance, command, and discipline of the Indian Navy, under which all such naval assets and operational units (squadrons) are commissioned and deployed.

## Conclusion and UPSC Relevance

The commissioning of INAS 335 is a pivotal moment that signifies India's commitment to becoming a dominant maritime power, emphasizing high-technology integration for enhanced operational reach and deterrence in the IOR.

# 6. Illicit Cannabis Cultivation in Kandhamal (Odisha): Scale, Challenges and Policy Dilemmas

**Context: Kandhamal district** has emerged as one of India's major centres of **illicit cannabis (ganja) cultivation**. Its **remote, hilly, forested, and poorly accessible terrain**, coupled with a favourable climate, has enabled the growth of large-scale illegal plantations, posing serious challenges to law enforcement, governance, and rural development.

## Scale of Illicit Cultivation

- Kandhamal is among the **largest contributors to illegal cannabis production in India**.
- In **2025 alone**:
  - Over **4,000 acres** of cannabis plantations were destroyed by district police.
  - **59,068 kg of ganja** was seized—the **highest seizure nationally**.
- These figures highlight both the **magnitude of cultivation** and the intensity of enforcement operations.

## Profitability and Local Economic Drivers

- Cannabis cultivation yields **far higher returns** than legal cash crops:
  - Approximate market value: **₹2,000–₹3,000 per kg**.
- This profitability incentivises villagers to cultivate cannabis, often on **forest land**, despite its illegality.



OPERATION GREEN

- The trade is deeply entrenched, with allegations of:
    - **Corrupt official patronage**, and
    - Support from the outlawed **Communist Party of India (Maoist)**, indicating a **narco-extremism nexus**.

## Enforcement Challenges

- **Geographical constraints:**
    - Plantations are often located **10–15 km inside dense forests**, requiring long treks and sustained manpower deployment.
- **Evasion tactics by cultivators:**
    - Small, scattered plots (often fewer than 150 plants)
    - Dense tree cover to evade **drones and satellite imagery**
- These tactics significantly reduce the effectiveness of **technology-driven surveillance**.

## Difficulty in Targeting Financiers and Networks

- Enforcement efforts largely capture **villagers as cultivators**, while:
    - **Financiers, transporters, and organisers** remain insulated.
- Villagers are frequently used as **labour or fronts**, shielding higher-level actors.
- Investigators often lack **specialised financial investigation capacity** to:
    - Trace money flows
    - Establish conspiracy and financing
    - Prosecute organised criminal networks linked to the trade

## Proposed Counter-Strategy: Alternative Livelihoods

- Authorities are considering a **livelihood-centric approach** to address root causes.
- Focus areas include engaging villagers during **sowing and harvesting seasons** of cannabis.
- Proposed alternatives:
    - Fruit and spice cultivation
    - High-value vegetables
    - Beekeeping
    - Agroforestry
- These are to be supported through government schemes such as the **rural employment guarantee programme**, reducing economic dependence on illegal crops.

## Socio-Cultural and Governance Dilemma

- Cannabis cultivation often involves **collective participation of entire villages**, complicating strict enforcement.
- Excessive policing risks:
    - Alienating communities
    - Undermining trust in the state
- The dilemma is stark, given that Kandhamal is globally known for **Kandhamal Turmeric**, a **Geographical Indication (GI)-tagged crop**, highlighting the contrast between:
    - Sustainable, legal livelihoods
    - High-profit illegal cultivation

## Key Concepts Explained

- **Cannabis (Ganja):** A controlled plant; recreational cultivation and possession are illegal in India.
- **Illicit Cultivation:** Illegal growing of controlled substances, usually on forest or government land.
- **Geographical Indication (GI) Tag:** Certification for products with unique geographical origin and reputation.

## Legal and Constitutional Framework

- **Narcotic Drugs and Psychotropic Substances Act, 1985:**

- o Prohibits cultivation, possession, transport, and sale of cannabis.
- **Indian Penal Code & Code of Criminal Procedure:**
  - o Applied in cases of conspiracy, financing, transport, and organised crime.
- **Forest Conservation Act, 1980:**
  - o Relevant due to forest encroachment and environmental degradation.

**Additional Strategic Concerns**

- **Narco-extremism:** Alleged Maoist patronage links drug trade with internal security threats.
- **Inter-State Networks:** Cannabis from Kandhamal supplies distant metropolitan markets, necessitating **inter-state coordination**.
- **Financial Intelligence:** Involvement of agencies like the **Income Tax Department** highlights the need for **multi-agency, money-trail-based enforcement**.

**Conclusion**

Illicit cannabis cultivation in Kandhamal represents a **multidimensional governance challenge**, intertwining **poverty, organised crime, internal security, environmental degradation, and regulatory gaps**. A sustainable solution requires moving beyond reactive crop destruction towards a **holistic strategy**—combining **financial disruption of networks, alternative livelihoods, promotion of GI-tagged legal crops, technology-enabled surveillance, and community trust-building**.

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# SECURITY & DEFENCE

## 1. India's Tepid Response to Russian Offers: Key Strategic and Defence Dimensions

**Context**

**Lukewarm Response to Russian Defence Platforms:** Despite Russia's strong push before President Putin's visit, India showed limited interest in acquiring the Su-57 fifth-generation stealth fighter, Geran kamikaze drones, long-range UAVs, or submarines. Moscow expected major movement, but New Delhi remained non-committal.

- **Strategic Shift Toward Self-Reliance (Atmanirbhar Bharat):** India's reluctance is linked to its aggressive pursuit of indigenous defence manufacturing. Defence production has risen from ₹46000 crore (2014) to **₹1.51 lakh crore**, and exports from under ₹1000 crore to **₹24000 crore**, reflecting a structural transformation.



- **No Major Defence Announcements During Putin's Visit:** Although 19 agreements were signed on trade and economic cooperation, there was no breakthrough on Su-57, Su-75, S-500, or submarine collaboration — indicating India's cautious approach to high-value foreign defence platforms.

- **Limited Interest in Geran/Shahed-136 Kamikaze Drones:** India did not show enthusiasm for the Geran series, despite their demonstrated battlefield utility in Ukraine. This stems from India's preference for indigenous loitering munitions and collaborations under Make-in-India.

- **India–Russia Defence Cooperation Continues, but Through R&D and Tri-Service Projects:** The 23rd Working Group Meeting of the Inter-Governmental Commission on Military-Technical

Cooperation (IGC-MTC) focused on R&D, co-production, and tri-service collaboration. A protocol was signed, but **big-ticket deals remain absent**, signalling a shift toward technology sharing rather than platform acquisition.

- **Balancing Geopolitics and Defence Diversification:** India is balancing its long-standing defence ties with Russia with diversification toward Western partners, while ensuring its defence supply chain remains resilient amid global geopolitical uncertainties (Ukraine war, sanctions, CAATSA concerns).

## Additional Key Points
- India's declining appetite for major Russian platforms also aligns with concerns over **technology depth**, **combat-proven performance**, **after-sales reliability**, and **spare supply vulnerabilities** exposed during the Ukraine conflict.

- India's defence modernisation is increasingly oriented toward **next-gen indigenous platforms** (AMCA, Tejas Mk-2, DRDO long-range UAVs, submarine programmes, and space-based ISR systems).

## Key Definitions
- **Su-57 Fighter:** Russia's fifth-generation stealth multirole combat aircraft aimed at competing with the F-35 and J-20; criticised for limited stealth features and production delays.

- **Geran (Shahed-136) Drones:** Low-cost "kamikaze" loitering munitions used for mass saturation attacks; significant in Russia's Ukraine strategy.

- **S-500 Air Defence System:** Russia's next-generation anti-ballistic missile and hypersonic defence system with a reported range of **600 km**.

- **Atmanirbhar Bharat (Defence):** India's national mission to reduce import dependence and build a self-sustaining defence industrial ecosystem.

## Constitutional & Legal Provisions (Relevant to the Topic)
- **Article 73 & 246:** Empower the Union government to legislate and execute decisions on national defence.

- **Seventh Schedule – Union List:** Defence of India, armed forces, deployment, and defence production fall exclusively under Union jurisdiction.

- **Defence Acquisition Procedure (DAP) 2020:** Provides the legal framework prioritising "Buy Indian" and "Buy & Make (Indian)" categories over foreign procurement.

- **Offset Policy:** Mandates technology transfer and domestic manufacturing obligations for foreign vendors.

- **Strategic Partnership Model:** Enables joint development with foreign OEMs but emphasises India-led production and technology absorption.

## Conclusion
India's muted response to Russia's proposals marks a **strategic inflection point** in bilateral defence ties. While the India–Russia partnership remains important, especially in co-production and military-technical cooperation, New Delhi is signalling that the era of large-scale reliance on imported Russian platforms is fading. India's focus is now on **indigenisation, technological sovereignty, and diversified partnerships**, aligning defence procurement with long-term national security and industrial goals.

## 2. Indian Navy to Commission First Indigenous Diving Support Craft – DSC A20

**Key Points**

- The Indian Navy will commission **DSC A20**, the first **indigenously designed and constructed Diving Support Craft**, on **16Dec2025** at Kochi under the Southern Naval Command, marking a major enhancement in underwater and diving operational capabilities.

- DSC A20 is the **lead vessel in a series of 5 Diving Support Craft** being built by **Titagarh Rail Systems Limited (TRSL), Kolkata**, showcasing industrial participation in defence indigenisation.



- Purpose-built for coastal underwater missions, the craft is equipped with **advanced state-of-the-art diving systems**, enabling efficient underwater inspection, salvage operations, and support tasks.

- The vessel features a **catamaran hull**, providing superior stability, increased deck space, and better seakeeping; it displaces **approximately 390tons** and is built as per **Naval Rules & Regulations of the Indian Register of Shipping (IRS)**.

- Its design underwent **extensive hydrodynamic analysis and model testing** at NSTL **Visakhapatnam**, ensuring reliability and optimal performance of the platform.

- The commissioning strengthens India's maritime self-reliance under **Aatmanirbhar Bharat** and 'Make in India', representing coordinated efforts between the Navy, indigenous shipbuilders, and research institutions.

**Important Definitions**

- **Diving Support Craft (DSC):** A naval auxiliary vessel designed to support diving operations, underwater inspections, repair tasks, and salvage assistance.

- **Catamaran Hull:** A twin-hulled vessel design that offers higher stability, reduced drag, and improved operational efficiency in coastal waters.

- **Aatmanirbharta in Defence:** India's policy focus on self-reliance in defence production by promoting indigenous design, development, and manufacturing.

**Constitutional & Legal Provisions**

- **Article246 & Seventh Schedule (Union List Entry2):** Defence and naval forces fall exclusively under the Union Government's legislative domain.

- **Article51A(d):** Fundamental duty to defend the country and render national service, indirectly supporting national security imperatives.

- **Defence Acquisition Procedure (DAP2020):** Governs indigenous procurement through categories like 'Buy Indian (IDDM)' and 'Make' projects, aligning with platforms such as DSC A20.

- **Naval Act & Naval Regulations:** Provide operational and administrative frameworks for induction and deployment of naval vessels.

**Additional UPSC-Relevant Points**

- The DSC A20 enhances India's ability in **critical underwater tasks**, vital for harbour security, ship maintenance, underwater search, and submarine support.

- Strengthens **coastal defence architecture**, especially under the Southern Naval Command, which oversees key maritime zones including shipping lanes and naval infrastructure.

- Reflects India's increasing emphasis on **indigenisation of niche naval technologies**, traditionally imported, such as integrated diving suites and high-precision underwater tools.

- Demonstrates collaboration between military, industry (TRSL), and R&D institutions (NSTL–DRDO), a model of **defence ecosystem integration**.

**Conclusion**
The commissioning of DSC A20 represents a significant step toward strengthening India's underwater operational capabilities and advancing defence indigenisation. It underscores the Navy's commitment to modernising auxiliary platforms essential for maritime security, coastal operations, and underwater mission readiness. The vessel stands as evidence of the maturing indigenous shipbuilding ecosystem and India's strategic push for technological self-reliance.

# 3. U.S. National Security Strategy 2025: Implications for the Transatlantic Alliance

- **Strategic Pivot:** The Trump Administration's National Security Strategy (NSS) 2025 signals a move away from the post-1945 liberal international order toward a mercantilist, "America First" posture that prioritizes U.S. domestic interests over traditional European alliances.

- **Critique of Europe:** The 33-page document describes Europe as facing "civilizational erasure" due to liberal migration policies and a loss of national identity, suggesting that the U.S. will pivot support toward "patriotic European parties" rather than the European Union (EU).

- **Security Decoupling:** The NSS explicitly demands that Europe assume "primary responsibility for its own defense," signaling a conditional approach to NATO and a desire for "strategic stability with Russia" rather than active confrontation.

- **The Hague Investment Plan:** Reflecting U.S. pressure, NATO member states (at the June 2025 Hague Summit) agreed to a massive hike in defense spending—targeting **5% of GDP** by 2035—representing a doubling of the previous 2% baseline.

- **Erosion of Rules-Based Order:** The strategy targets transnational institutions and multilateral trading systems, viewing them as undermining national sovereignty and paving the way for a world where great powers define regional spheres of influence.

- **European Dilemma:** Europe faces a choice between attempting to appease the U.S. through increased defense purchases (as seen with Germany's recent military orders) or developing a truly independent European defense architecture that does not rely on American intelligence and hardware.
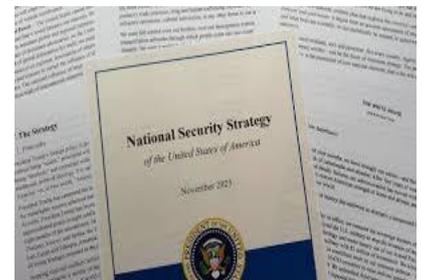
**Key Definitions**

- **National Security Strategy (NSS):** A Congress-mandated document in the U.S. that outlines an administration's major security concerns and how it plans to address them using national power.

- **Mercantilism:** An economic policy designed to maximize exports and minimize imports through protectionist measures like tariffs and subsidies to increase national wealth.

- **Strategic Autonomy:** The ability of a state or group of states (like the EU) to pursue its own foreign policy and security goals without being overly dependent on other foreign powers.

**Constitutional and Legal Provisions**

- **Article 5 (NATO Treaty):** The principle of collective defense, where an attack against one member is considered an attack against all. The 2025 NSS suggests this bond is now increasingly transactional.

- **Goldwater-Nichols Act (1986):** The U.S. federal law that mandates the President to regularly submit a National Security Strategy to Congress.

- **Article 2 (UN Charter):** Enshrines the principle of sovereign equality of all its members. The NSS's focus on "civilizational erasure" and support for specific political factions is viewed by some as a violation of the non-interference principle.

**Conclusion**

The 2025 National Security Strategy marks a definitive end to the era of "unconditional" American security for Europe. By framing the transatlantic relationship in terms of cultural decay and economic trade imbalances, the Trump Administration has forced European leaders into a crisis of self-reliance. Whether this leads to a revitalized, independent European defense entity or a fractured continent of competing nationalist interests remains the primary geopolitical question of the decade.

# SCIENCE & TECHNOLOGY

## 1. Sanchar Saathi App: Govt. Order Withdrawal and Key Concerns

- **Context of Withdrawal:** The Department of Telecommunications (**DoT**) withdrew its directive to phone manufacturers mandating the pre-installation of the **Sanchar Saathi app** on all new devices starting next year. The withdrawal followed an outcry from Internet users, civil society, and the Opposition over installing a government app **"without people's knowledge."**

- **Official Justification and Purpose:** DoT's stated reason for the withdrawal was a **"rapid increase"** in the app's downloads, meaning there was "no need" for pre-loading. The app's purpose, as defended by the Communications Minister, is to help citizens **track lost/stolen phones** and **identify/disconnect fraudulent mobile connections**. The Minister cited the disconnection of $1.5$ crore fraudulent connections and the tracing of $26$ lakh lost phones as proof of its utility.

- **DoT's New Regulatory Powers (TIUE):** The initial direction was issued after DoT created a new concept: **Telecommunication Identifier User Entities (TIUE)**. This allows DoT to issue orders to **any entity that uses phone numbers**, extending its regulatory reach beyond just telecom operators to entities like handset makers. The order was part of at least three such directions issued under these new powers.

- **Definition: Sanchar Saathi App:** A government-developed mobile application launched by the DoT designed to empower mobile phone users by providing services like blocking and tracing lost/stolen mobile phones (via **CEIR** - Central Equipment Identity Register), checking the mobile connections registered in their name (via **TAFCOP** - Telecom Analytics for Fraud Management and Consumer Protection), and other security/fraud management tools.

- **Constitutional & Legal Provisions:** The controversy touches upon fundamental rights, primarily the **Right to Privacy** (part of the Right to Life under **Article 21** of the Constitution, as affirmed in the *Puttaswamy* judgment). Mandatory pre-installation of a government app without explicit consent raises concerns about potential **surveillance** and unwarranted access to user data, thus impinging on the principles of **informed consent** and **data protection**.

**Conclusion & UPSC Relevance**

The Sanchar Saathi app episode highlights a crucial intersection of **Digital Governance**, **Citizen Privacy**, and **Cyber Security**. While the app's stated goal of combating telecom fraud is important, the method of mandatory, non-consensual pre-installation was deemed violative of digital rights norms and the principle of **minimal governmental intrusion**. For the UPSC, this topic is relevant for **GS-II (Governance and Policy)**, covering issues of **e-governance, government interventions**, and **Fundamental Rights (Right to Privacy)**, and **GS-III (Security)**, concerning **cyber security and tackling cyber-enabled financial fraud**. It serves as a case study for the necessary balance between **national security/fraud prevention** and **individual digital liberties**.

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**Sanchar Saathi App –**

**Sanchar Saathi App** is a citizen-centric digital initiative launched by the **Department of Telecommunications (DoT), Ministry of Communications**, Government of India. It aims to empower mobile users by enhancing telecom security, transparency, and grievance redressal.

**Key Features:**

- **CEIR (Central Equipment Identity Register):** Enables users to **block, trace, and recover lost or stolen mobile phones** using IMEI.

- **TAFCOP (Telecom Analytics for Fraud Management and Consumer Protection):** Helps citizens **identify and report mobile connections issued in their name** without consent.

- **Report Suspected Fraud Communications:** Users can report **spam, phishing, and fraudulent calls/SMS**.

- **Know Your Mobile Connections:** Promotes consumer awareness and prevents identity misuse.

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## 2. Volcanic Ash and Aviation Safety: The Hayli Gubbi Eruption

- **Nature and Impact of Volcanic Ash on Aircraft Engines:** Volcanic ash is composed of **fine, abrasive particles** of pulverized rock, minerals, and **volcanic glass**. When ingested into a high-temperature jet engine (which operates at temperatures up to $1,600^\circ C$), the **silicate components melt** (their melting point is lower, around $1,100^\circ C$). This molten glass then **re-solidifies** as a glassy deposit on cooler parts, especially the high-pressure turbine blades and cooling holes. This accumulation **chokes airflow**, reduces pressure, and can lead to engine **surge, flame-out,** or **complete failure**, as seen in past incidents like the 1982 British Airways B747 flight.

- **Hayli Gubbi Eruption and Ash Drift to India:** The **Hayli Gubbi volcano** in northern Ethiopia erupted for the first time in nearly 12,000 years, sending ash plumes up to **14 km (45,000 feet)** high. Transported by upper-level winds, including the jet stream, the ash cloud drifted across the Red Sea, Oman, Yemen, and entered **India's western airspace** (Rajasthan, Gujarat, Delhi-NCR, Punjab, UP) at altitudes typically between **15,000 and 25,000 feet**. The plume carried ash, sulphur dioxide, and tiny particles of glass and rock.

- **DGCA's Regulatory Response and Advisory:** India's aviation regulator, the **Director General of Civil Aviation (DGCA)**, issued an urgent operational advisory to all Indian airlines. The advisory instructed operators to: **Strictly avoid** affected areas and altitudes; **Adjust flight planning, routing, and fuel considerations** based on advisories (like **ASHTAM** or **SIGMET** warnings from the **Volcanic Ash Advisory Centres - VAACs**); **Report immediately** any suspected ash encounter (engine performance anomalies, cabin smoke/odour); and conduct **post-flight inspections** of engines and airframes.

- **Impact on Flight Operations:** Following the DGCA advisory, Indian carriers like **Air India** and **Akasa Air** cancelled several international flights, particularly those originating from/travelling to the Middle East (e.g., Dubai, Doha, Jeddah), to carry out **precautionary checks** on aircraft that had flown over the affected geographical locations. Airports were also ordered to inspect runways for contamination and **restrict or suspend operations** if ash was detected.

- **Definition: ASHTAM and VAACs:** An **ASHTAM** (Ash Special Air-Report and Notification) is a special aviation alert issued as a type of **NOTAM** (Notice to Airmen) to caution pilots about hazardous volcanic conditions. **Volcanic Ash Advisory Centres (VAACs)**, operating under the **International Civil Aviation Organization (ICAO)**, are responsible for monitoring and issuing advisories on the movement and concentration of volcanic ash clouds globally.

**Conclusion & UPSC Relevance**

Volcanic ash clouds represent a rare but potentially **catastrophic high-altitude hazard** for commercial aviation, necessitating a robust **International Airways Volcano Watch (IAVW)** system. The Hayli Gubbi incident demonstrated the far-reaching impact of volcanic events thousands of kilometers away and highlighted the critical role of the **DGCA, IMD,** and **VAACs** in ensuring aviation safety through preemptive advisories and coordinated flight management.

# 3. Digital Constitutionalism: The Imperative for Rights in the Algorithmic Era

- **The 'Sanchar Saathi' Rollback as a Case Study:** The government's unprecedented and rapid revocation of the mandatory 'Sanchar Saathi' app installation on mobile phones (effective 2026) was a direct response to widespread stakeholder pushback. Concerns centered on **ambiguous data collection, lack of consent, surveillance**, and potential data misuse. The refusal by foreign entities like **Apple** highlighted the conflict between digital governance measures and global tech industry autonomy, especially considering India's focus on boosting local manufacturing.

- **Defining Digital Constitutionalism (Definition): Digital Constitutionalism** signifies the essential extension of core constitutional values—such as **liberty, dignity, equality, non-arbitrariness, accountability, and the rule of law**—into the digital space. It is a necessary framework to counter the threats posed by modern, invisible governance systems based on **data collection, AI, and surveillance technologies** (e.g., biometric databases and predictive algorithms).

- **The Surveillance State Threat and Chilling Effect:** Modern surveillance has become pervasive, utilizing **metadata gathering, location tracing, biometric identification, and predictive analytics** (far beyond Orwell's imagination). This silent and constant observation leads to the **chilling effect** on

free speech, discouraging dissent, and prompting **self-censorship**. Unchecked surveillance risks transforming a democratic state into a monitoring or "Big Brother" state.

- **Constitutional & Legal Provisions:**

  o **Justice K.S. Puttaswamy (2017):** The Supreme Court affirmed the **Right to Privacy** as a **Fundamental Right** protected under **Article 21** (Right to Life and Personal Liberty) and other Fundamental Rights. Any infringement must meet the rigorous three-pronged test of **legality, legitimate state aim, and proportionality**.

  o **Digital Personal Data Protection (DPDP) Act, 2023:** While enacted to safeguard data, the Act has been criticized for **significant flaws**, including granting **broad exemptions to the government** (citing national security/administrative convenience), lacking a strong independent oversight body, and offering **weak remedies** for individuals.

- **The Paradox of Algorithmic Governance:** Automated processes and algorithms now mediate essential civic functions (welfare, KYC, job applications). Often operating as **"black boxes"** with obscure decision-making functions, algorithmic failures can lead to the **exclusion of deserving citizens** and the violation of constitutional principles like **equality, reasonableness, and natural justice**. This creates an unequal state where citizens are passive data subjects, not active right-holders.

- **The Path Forward (Institutional Protection):** A robust model of digital constitutionalism requires institutional strengthening. This includes establishing an **independent Digital Rights Commission** to investigate violations and ensure accountability. Furthermore, there must be a legal mandate for **necessity and proportionality** in surveillance orders, regular **bias-testing and auditing of risky AI systems**, and granting citizens the **Right to Explanation and Appeal** against automated decisions.

**Conclusion**

The challenge posed by the 'Sanchar Saathi' debacle underscores the urgent need to subject digital power structures—including state authority, private corporations, and algorithms—to constitutional discipline. Digital constitutionalism is the indispensable defense of individual freedom, privacy, and equality, ensuring that technology serves as a tool for democratic empowerment rather than a means of invisible, authoritarian control.

# 4. Limits of Tech-Fixes for Accountability in Welfare Schemes

**Critique of Digital Surveillance in Governance**

- **Focus Shift over Outcome:** Digital tools like **biometric attendance** (e.g., for government employees) and the **National Mobile Monitoring System (NMMS) app** (in MGNREGA) shift the focus of employees from completing the work to merely **marking attendance/logging activity** in a timely manner, failing to guarantee actual quality work.

- **New Forms of Malpractice:** Tech-fixes often lead to **displacement of corruption** rather than its elimination. For example, in **MGNREGA**, fudged signatures were replaced by **fudged photographs** (uploading random JPEGs) to siphon off wages, acknowledged even by the Ministry of Rural Development (MoRD).

- **Exclusion and Inefficiency:** Mandatory biometric authentication (e.g., **Aadhaar-Based Biometric Authentication - ABBA** for PDS rations) led to the **exclusion** of vulnerable groups like the elderly, sick, and immobile who could not show up in person, causing "pain without gain."

- **Worker Demotivation and Privacy Invasion:** Surveillance apps (e.g., **Facial Recognition Technology - FRT** in Poshan Tracker for Take Home Rations, or **geo-tagging** of Auxiliary Nurses and Midwives - ANMs) demotivate sincere workers by prioritizing photographic evidence over actual counselling and intrude on privacy (e.g., photo of a breastfeeding mother).

- **Agnotology (Cultivated Ignorance):** The government demonstrates a **stubborn refusal to learn** from the documented failures (exclusion, inefficiency, new corruption) of tech-fixes, potentially due to the influence of **vested interests** creating an assured market for surveillance infrastructure and devices.

- **Accountability vs. Responsibility:** The article advocates moving beyond mere **accountability** (doing what someone else wants) toward fostering **responsibility** (self-motivation to act in public interest), which cannot be achieved through coercive digital surveillance.

## Important Keypoints & Definitions

- **Agnotology:** A term coined by science historian Robert Proctor, meaning the study of **how and why various forms of knowledge have "not come to be,"** or the deliberate, culturally induced production of ignorance. The article uses this to describe the government's refusal to acknowledge the harms of surveillance apps.

- **National Mobile Monitoring System (NMMS) App:** An application introduced in 2022 to record the attendance of workers under the **MGNREGA** scheme by requiring two time-stamped, geo-tagged photographs of the workers at the worksite daily.

- **Aadhaar-Based Biometric Authentication (ABBA):** The use of an individual's fingerprints or iris scans linked to their Aadhaar number to verify identity, often mandatory for accessing benefits like PDS rations.

- **Poshan Tracker:** A Government of India application used by the Ministry of Women and Child Development (MoWCD) to track nutritional outcomes and monitor the delivery of services like Take Home Rations (THR) at Anganwadi Centres, now mandating **FRT**.

- **Accountability vs. Responsibility: Accountability** refers to external monitoring and enforcing rules. **Responsibility** refers to internal motivation and a sense of duty toward public interest (the preferred goal for a better work culture).

## Constitutional & Legal Provisions

- **Article 21 (Right to Life and Personal Liberty):** The Supreme Court's ruling in *Justice K. S. Puttaswamy (Retd.) vs Union of India (2017)* established the **Right to Privacy** as a Fundamental Right under Article 21. The use of surveillance apps and mandatory photograph uploads raises significant concerns regarding **privacy invasions** and the principle of **proportionality**.

- **MGNREGA Act, 2005:** The NMMS app is an administrative tool used to implement this Act, which guarantees the right to a minimum of 100 days of wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. The Act's core aim is to provide rural livelihood security, which is undermined by attendance fraud.

- **Digital Personal Data Protection (DPDP) Act, 2023 (Upcoming):** Although the full implementation is pending, the privacy invasion concerns (e.g., photographs of breastfeeding mothers) highlighted by the article would fall under the strict provisions of this Act concerning **consent and purpose limitation** for data processing.

## Conclusion and UPSC Relevance

The widespread adoption of surveillance-focused **tech-fixes** in welfare administration, while aimed at improving accountability, is demonstrating limited effect, leading to **exclusion, inefficiency, and new forms of malpractice**. The article provides a critical, evidence-based argument that technological solutions alone are **"snake oil"** for deep-seated governance problems and cannot replace the need to foster a culture of **responsibility and public service ethics**. The government's continued rollout of such apps, despite documented failures, raises ethical and political questions about the **capture of policy-making** by commercial interests.

# 5. Neurotechnology: India's Final Frontier in Health and Tech

- **Core Definition and Scope: Neurotechnology** involves mechanical tools that interact directly with the brain to **record, monitor, or influence neural activity**. The central technology is the **Brain-Computer Interface (BCI)**, which translates brain signals (like thoughts) into digital commands to control external devices (prosthetics, computers) or stimulate neural circuits (for therapy). BCIs can be **non-invasive** (e.g., EEG headsets) or **invasive** (implanted electrodes).



## Constitutional & Legal Provisions

- **Fundamental Rights (Article 21):** The right to life and personal liberty, interpreted broadly by the Supreme Court, includes the **right to health** and the **right to dignity**. Neurotechnologies, particularly those that restore mobility or treat severe neurological disorders, can be argued to directly enhance the right to a dignified life.

- **Data Privacy (Justice Puttaswamy Judgment):** The Supreme Court recognized the **Right to Privacy** as a Fundamental Right under Article 21. BCI data, which involves highly sensitive neural signals and 'thoughts', constitutes one of the most private forms of data. This necessitates strong regulations (like the Digital Personal Data Protection Act, 2023) to ensure **data sovereignty** and prevent unauthorized collection or use of neural data.

- **Critical Need for Tailored Regulation (Neurorights):** Given the powerful nature of BCIs, there is an urgent need for **adequate regulatory support** to prevent development from being thwarted. Regulatory pathways must be **tailored** to different BCIs based on risk and benefit, focusing on key ethical aspects like **data privacy** and **user autonomy**. Countries like the **EU and Chile** are pioneering laws specifically addressing BCIs and the concept of **neurorights** (the ethical principles related to nervous system interference).

- **Future Application (Therapeutic and Enhancement):** While current applications are primarily **therapeutic** (rehabilitation, neuroprosthetics), the technology holds future potential for **human enhancement** (cognitive or physical augmentation) and even **military advantage**. This possibility necessitates fierce ethical and public engagement debates before any such advanced applications can be adopted.

- **Emerging Concepts (Neurorights):** While not explicitly codified in Indian law, the ethical challenges posed by BCIs (e.g., the ability to record or influence thoughts) necessitate future legal consideration of **Neurorights**, which typically include:

  - o **Right to Mental Privacy:** Protection against the unauthorized scanning of brain data.

  - o **Right to Mental Integrity:** Protection against unauthorized alteration of a person's neural activity.

  - o **Right to Cognitive Liberty:** The freedom to make one's own decisions regarding the use of neurotechnology.

**Definitions of Key Terms**

- **Neurotechnology:** Mechanical tools, devices, or systems that create a direct link with the human nervous system (especially the brain) to either record activity or stimulate it.

- **Brain-Computer Interface (BCI):** A direct communication pathway between the brain and an external device. It measures brain activity (e.g., electrical signals from neurons) and translates them into commands or output.

- **Neuroprosthetics:** Devices that substitute for a motor, sensory, or cognitive function that has been damaged as a result of injury or disease. A BCI-controlled robotic arm is a form of neuroprosthetic.

**Conclusion**

Neurotechnology, spearheaded by the development of Brain-Computer Interfaces, represents a final frontier with immense implications for health, technology, and fundamental human rights. For India, it presents a crucial dual opportunity: to address its significant neurological disease burden with cutting-edge therapeutic tools and to assert itself as a global leader in the intersection of AI and biotechnology. However, realizing this potential critically depends on establishing a proactive, tailored regulatory framework that champions scientific progress while strictly safeguarding the ethical dimensions of mental privacy and user autonomy.

- **Significance for India's Disease Burden:** Neurotechnology offers critical solutions for India's substantial **neurological disease burden**, where non-communicable and injury-related neurological disorders are rising (with **stroke** being the largest contributor). BCIs and neuroprosthetics can potentially **restore mobility and communication** for paralyzed patients and offer targeted neural stimulation for mental health disorders (like depression/Parkinson's), reducing reliance on long-term medication.

- **Global Landscape and Competition:** The field is marked by intense global competition and government initiatives. The **U.S.** leads with programs like the **BRAIN Initiative** and companies like **Neuralink** (receiving FDA approval for in-human trials). China launched the **China Brain Project (2016-2030)** focusing on cognition, AI, and disorder treatment. This emerging technology is not just about healthcare but is a key intersection of **Biotechnology, Engineering, and AI**.

- **India's Status and Opportunities:** India is actively building strengths, with research centers like the **National Brain Research Centre (Manesar)** and the **Brain Research Centre (IISc, Bangalore)**. Research groups, such as at **IIT Kanpur**, are developing BCI-based technologies (e.g., robotic hands for stroke patients). India's **genomic diversity, available expertise, and growing competence** in AI and engineering position it as a potential hub for neurotechnology development and an economic opportunity.

# 6. DHRUVA (Digital Hub for Reference and Unique Virtual Address): India's Address Digital Public Infrastructure

**Context -** India's addressing system faces challenges such as non-standard formats, frequent changes, and poor coverage in rural and informal settlements. To address this, the **Department of Posts** has proposed **DHRUVA (Digital Hub for Reference and Unique Virtual Address)** as a **Digital Public Infrastructure (DPI)** for standardized, consent-based address sharing.

## Integration with DIGIPIN

- DHRUVA integrates with **DIGIPIN**, a **10-digit alphanumeric, open-source location code** developed in-house by India Post.

- **Key feature:**

    o Assigns a unique code to every **~12 sq. metre block** in India.

- **Significance:**

    o Acts as a **location fallback** where conventional addresses are absent or ambiguous, especially in **rural and remote areas**.

## Ecosystem and Governance Structure

The proposed DHRUVA ecosystem includes:

- **Address Service Providers:** Generate DHRUVA labels

- **Address Validation Agencies:** Authenticate address data

- **Address Information Agents:** Manage consent and data flows

A dedicated governance body—**analogous to NPCI in payments**—is envisaged to oversee standards, interoperability, and compliance.

## Key Use Cases and Benefits

- **Last-mile logistics:** Improved delivery efficiency for public services, India Post, and e-commerce.

- **Seamless mobility:** Easy address updates when citizens relocate.

- **Service discovery:** Digital platforms can identify and display **available doorstep services** at a geo-coded location.

- **User empowerment:** Reduced repetitive sharing of sensitive address details.

## Regulatory Requirements and Governance Challenges

- **Legal backing:**

    o Implementation requires a **draft law or amendment** to the **Post Office Act, 2023** to authorise address data handling as a DPI.

- **Key criticism:**

    o DHRUVA links addresses to **individual consent**, not to **independently surveyed physical structures**.

o This may result in **incomplete datasets**, limiting its utility for **urban planning, municipal governance, and structural mapping**.

**Constitutional and Legal Provisions**

- **Post Office Act, 2023:** Needs amendment to legally enable DHRUVA operations.

- **Digital Personal Data Protection Act, 2023:**

  o DHRUVA must comply with provisions on **consent, data minimisation, purpose limitation, and data security**.

- **Article 21 (Right to Privacy):**

  o Consent-based design is essential to uphold the **constitutional right to privacy**, as home address is sensitive personal data.

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**Core Concept and DPI Architecture**

- **DHRUVA** is a framework to **digitally standardize and share physical addresses** using unique, user-authorised **virtual labels** (similar to email IDs, e.g., *amit@dhruva*).
- It is conceptualised as a **DPI**, on the lines of **Aadhaar** (identity) and **UPI** (payments).
- Objective:
  o Improve **governance efficiency**
  o Enable **inclusive service delivery**
  o Enhance **citizen convenience and control over personal data**

**Mechanism: Consent-Based Address Sharing**

- DHRUVA works as a **consent layer**, much like UPI tokenises bank accounts.
- **Process:**
  o User generates a **DHRUVA label**.
  o On explicit consent, service providers (India Post, e-commerce firms, gig platforms, government agencies) can access:
    ▪ The **full descriptive address**, and
    ▪ The **geo-coded DIGIPIN**.
- Users retain control over **who accesses their address, for what purpose, and for how long**.

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**Key Definitions**

- **Digital Public Infrastructure (DPI):** Shared public digital systems enabling large-scale governance and service delivery (e.g., Aadhaar, UPI).

- **Geo-coded Address:** Location mapped to precise latitude–longitude coordinates.

- **Tokenisation / Label:** Replacing sensitive personal data (address) with a **secure proxy identifier**, shared only through user consent.

**Conclusion**

DHRUVA represents a **transformative attempt to modernise India's address system** using geo-spatial technology and the DPI model. By embedding **consent and privacy-by-design**, it aligns with the **DPDP Act, 2023** and citizen-centric governance. However, its long-term success will depend on **clear legal authorisation**, robust institutional governance, and resolving concerns about its effectiveness for **comprehensive urban planning and structural mapping**.

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# 7. The Twin Burden: Influenza Surge and Air Pollution in India

**Context:** India is witnessing a concurrent public health challenge marked by a **surge in seasonal influenza cases** alongside **hazardous air pollution levels**. This convergence has created a **"twin burden"**, intensifying respiratory illnesses and straining public health systems, particularly during the winter months.

**Influenza Surge Driven by H3N2 Subtype**

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- Surveillance data from the **Indian Council of Medical Research** indicates that **H3N2**, a subtype of **Influenza A**, is the **dominant circulating strain**.

- **H3N2** is associated with:

  - More **severe clinical symptoms**

  - **Higher hospitalisation rates** compared to other seasonal flu strains

- **Positivity rates** peaked at **12–13% by late November**, showing a sharp upward trend with the onset of winter.

## Air Pollution as a Major Exacerbator (Twin Burden)

- High concentrations of **Particulate Matter 2.5 (PM$_{2.5}$)** are significantly worsening the influenza impact.

- **PM$_{2.5}$ exposure**:

  - Damages the respiratory epithelium

  - Triggers inflammation

  - Increases vulnerability of lung tissue to viral attachment and infection

- This interaction between **air pollution and viral infection** amplifies both disease severity and spread.

## Increased Severity and Prolonged Recovery

- The combined effect of **H3N2 infection and polluted air** has resulted in:

  - More intense symptoms such as **breathlessness, wheezing, and persistent cough**

  - **Longer recovery periods**

- **High-risk groups** are disproportionately affected:

  - Infants and young children

  - Pregnant women

  - Elderly individuals

  - Persons with chronic respiratory or cardiovascular conditions

## Geographical and Seasonal Trends

- The surge began in **late September**, coinciding with **monsoon withdrawal**, and **peaked in November**, reinforcing the **seasonal nature** of influenza spread.

- While cases are reported nationwide, **higher caseloads** requiring focused surveillance have been observed in:

  - Kerala

  - Delhi

  - Maharashtra

- o Tamil Nadu

- o Gujarat

- o Puducherry

## Government Response and Health System Preparedness

- Acknowledging the severity of the situation, the **Union Health Ministry** has directed:

    - o A **review of preparedness** across district hospitals and medical colleges

    - o Strengthening of **early diagnosis and surveillance** mechanisms

- The healthcare focus remains on:

    - o **Timely antiviral therapy**, especially for high-risk patients

    - o Managing increased pressure on **outpatient departments (OPDs)**

- Disease monitoring is being supported through national surveillance systems under ICMR.

## Key Terms Explained

- **H3N2:** A subtype of the Influenza A virus, characterised by specific hemagglutinin (H) and neuraminidase (N) surface proteins; often linked with more severe outbreaks.

- **PM$_{2.5}$:** Fine inhalable particles (<2.5 micrometres) capable of penetrating deep into the lungs and bloodstream, causing systemic inflammation.

- **Severe Acute Respiratory Infections (SARI):** A surveillance category referring to acute respiratory illness with fever and cough, requiring hospitalisation.

## Constitutional and Policy Dimensions

- **Article 21 (Right to Life):**

    - o Judicially interpreted to include the **Right to Health** and **Right to a Healthy Environment**, placing a constitutional obligation on the State to address both infectious disease outbreaks and environmental hazards.

- **National Health Policy, 2017:**

    - o Emphasises strengthening **public health systems and disease surveillance**, aligning with the current influenza response.

- **Air Pollution Control Framework:**

    - o Implementation and enforcement by institutions such as the **Central Pollution Control Board** are critical to reducing PM$_{2.5}$ levels and mitigating the health crisis.

## Conclusion

The simultaneous surge of **H3N2 influenza** and **severe air pollution** represents a critical **twin burden** that magnifies respiratory illness severity and prolongs recovery across India. While government action and ICMR-led surveillance are essential for short-term disease control, **long-term relief requires sustained air pollution mitigation** alongside robust public health preparedness.

Addressing both dimensions is vital to fulfilling the **constitutional mandate of protecting life, health, and a clean environment**.

## 8. Aditya-L1's Breakthrough on Solar Storm Dynamics

- **Aditya-L1's Landmark Discovery:** India's first solar observatory, **Aditya-L1**, in collaboration with six US satellites (including NASA's Wind, ACE, and DSCOVR), provided crucial data to explain the unusual intensity of the May 2024 solar storm (Gannon's Storm). The study revealed that two **Coronal Mass Ejections (CMEs)** collided mid-space, triggering an unexpected internal magnetic upheaval within one of the CMEs.

- **Mechanism: Massive Magnetic Reconnection:** The core finding is the unprecedented observation of **magnetic reconnection** *inside* a CME.

  o **Definition: Coronal Mass Ejection (CME)** is a massive bubble of hot plasma and magnetic field ejected from the Sun's corona into space.

  o **Definition: Magnetic Reconnection** is a fundamental plasma process where magnetic field lines snap and rejoin in new ways, converting stored magnetic energy into kinetic and thermal energy, and accelerating particles.

  o **Observation:** The precise magnetic field measurements from Aditya-L1's instruments helped map this reconnection region, which was found to be enormous—about **1.3 million km across** (nearly 100 times the size of Earth). This massive event caused a sudden reversal in the storm's magnetic field direction, significantly amplifying its impact on Earth.

- **Aditya-L1's Strategic Vantage Point (L1):** The spacecraft is positioned in a **halo orbit** around the **Lagrange Point 1 (L1)**, located approximately **1.5 million km from Earth**.

  o **Significance:** L1 offers an **uninterrupted, continuous view of the Sun**, free from occultation/eclipses, allowing for real-time monitoring of solar activities and the space environment between the Sun and Earth. This continuous monitoring is vital for space weather prediction.

- **Importance for Space Weather Prediction:** Solar storms (CMEs) can severely disrupt space-based and ground-based technology, including **satellites, GPS, communication systems, and power grids**. This discovery significantly enhances the understanding of how CMEs evolve and gain strength as they travel from the Sun to Earth, which is essential for **improving the forecasting models** for severe solar events and protecting critical infrastructure.

- **Constitutional and Policy Context:**

  o **Constitutional:** The mission aligns with the spirit of **Article 51A(j)** (Fundamental Duty to strive towards excellence in all spheres of individual and collective activity) by pushing the frontiers of India's scientific and technological capabilities.

  o **Policy:** Aditya-L1 is the country's first dedicated solar observatory, positioning ISRO at the forefront of **global space science collaboration** (as demonstrated by the joint study with US

satellites) and boosting India's capability to independently manage the risks posed by **Space Weather**.

**Conclusion**

Aditya-L1's contribution to understanding the May 2024 solar storm is a landmark achievement, demonstrating India's growing expertise in planetary science and solar physics. Key relevance lies in understanding the **Aditya-L1 mission objectives**, the concept of **Lagrange Points (L1)**, the phenomenon of **Coronal Mass Ejections (CMEs)** and **Magnetic Reconnection**, and the direct economic and security impact of **Space Weather** on modern technological infrastructure.

## 9. Space Spectrum and Orbital Slots: Governance Challenges of Megaconstellations

**Context:**

- **The New Space Race: Spectrum and Orbital Congestion:**
  A fierce competition is underway among companies launching vast satellite fleets, or **megaconstellations** (e.g., Starlink's plan for 42000, China's GuoWang for 13000). The race is for limited resources: **radio frequencies (spectrum)**, especially **Ku-band (12-18GHz)** and **Ka-band (26-40GHz)** for high-speed internet, and finite **orbital slots** in Low Earth Orbit (LEO). This expansion is driven by a market expected to grow from **$4.27 billion** in 2024 to **$27.31 billion** by 2032.

- **Governance Failure of 'First-Come, First-Served':**
  The **International Telecommunication Union (ITU)** is the global coordinator for spectrum and orbital slots. Its traditional **first-come, first-served** system—designed when satellites were few—now gives major advantages to early filers and wealthy spacefaring nations. This risks creating an **inequitable system**, where a handful of players monopolize high-value spectrum–orbit combinations, limiting access for late entrants and widening the digital divide.

- **Bridging the Digital Divide (The LEO Advantage):**
  Megaconstellations are vital for narrowing the digital divide, as **2.6 billion** people remained offline at the start of 2025. LEO satellites offer significantly **lower latency (20-40ms vs 600+ms for GEO satellites)**, enabling real-time services such as telemedicine in remote areas with poor ground infrastructure. But the high cost of user terminals (e.g., Starlink's **$600** device) makes services unaffordable without subsidies or differential pricing.

- **Orbital Sustainability and Debris Mitigation:**
  With more than **50000 satellites** projected by 2030, orbital sustainability is in danger. The ITU's **Resolution 74 (2023)** requires satellites to be removed from orbit within **25 years** of mission end to limit debris. Yet compliance rates are low (around **70%**), allowing debris to accumulate and increasing the risk of cascading collisions known as **Kessler Syndrome**.

- **India's Dual Imperative and Regulatory Stance:**
  India's strategy includes both national assets (ISRO's GSAT-N2 with **48Gbps** throughput) and private participation (Bharti Enterprises' stake in OneWeb). The Telecom Regulatory Authority of India (TRAI) has recommended **administrative allocation of spectrum**—not auctions—for non-GEO satellites, to ensure affordable satellite broadband and rapid deployment in alignment with universal service goals.

### Key Definitions and Concepts

- **Megaconstellations:**
  Large fleets of satellites—often thousands—operating mainly in LEO to deliver global, low-latency, high-bandwidth communication.

- **Spectrum:**
  Radio frequency bands used for satellite–ground communication, allocated by the ITU (e.g., Ku-band, Ka-band).

- **Latency:**
  Time delay between sending a signal and receiving a response. Low latency is essential for real-time applications like telemedicine and video conferencing.

### Constitutional & Legal Provisions (Related to Topic)

- **Outer Space Treaty, 1967 (Principle):**
  Declares space as the "province of all mankind" and prohibits national appropriation. It underpins ITU's principle that spectrum and orbital slots are **limited natural resources** that must be used efficiently and equitably.

- **ITU Resolutions:**
  **ITU-R 74** and **Resolution 8** are major regulatory tools promoting sustainable use of orbital resources, imposing deployment deadlines, and preventing speculative orbital filings.

- **National Policy:**
  India's space governance framework—including **IN-SPACe** authorization and **TRAI's** recommendations on administrative spectrum allocation—guides satellite operations for both government and private players.

### Conclusion

The rapid rise of satellite megaconstellations offers transformative potential to bridge the digital divide but poses serious challenges for space governance and sustainability. The current ITU framework is strained by early-filing monopolies, risking unequal access to global space resources. For India and other emerging space powers, shaping international rules on **equitable access**, **debris mitigation**, and **universal service obligations** is essential to ensure that outer space remains a shared and sustainable global commons.

# HISTORY & CULTURE

## 1. Hornbill Festival & Development Thrust in Nagaland

### Key Highlights of the Event

- **High-Level Participation:** A Union Minister for Communications & DoNER (Development of North Eastern Region) participated in the renowned **Hornbill Festival** in **Nagaland**, signaling the Central Government's focus on the state's cultural and developmental integration.

- **Global Outreach:** The festival achieved significant international recognition with **Switzerland, Ireland, and the United Kingdom** joining as official **Partner Countries** for the 2025 edition, highlighting the success of **cultural diplomacy** and the increasing global profile of the Northeast.

- **Cultural Preservation:** Held at the **Kisama Heritage Village**, the event is a vibrant platform celebrating the living heritage, **tribal traditions, and cultural brilliance** of Nagaland's **17 tribes**, featuring indigenous games, music, and the iconic Angami stone-pulling ceremony.

- **Major Development Package:** A substantial development package of nearly **₹650 crore** was unveiled under the Ministry of DoNER, dedicated to accelerating growth in critical sectors like **healthcare, sports, power, education, and road corridors** across Nagaland.

- **Strategic Policy Implementation:** The visit reinforced the Prime Minister's **'Act East, Act Fast, Act First'** vision, which aims to transform the Northeast into **"India's first frontier to the world"** by pushing **unprecedented speed** in infrastructural development (airports, highways, telecom).

- **Community Engagement:** During the visit, the dignitary engaged deeply with local artisans, entrepreneurs, and cultural practitioners, including observing the crafting of the **Naga Dao** and participating in the weaving of the **Naga Khu (basket)**, emphasizing community-led cultural preservation.

## Important Keypoints & Definitions

- **Hornbill Festival (Festival of Festivals):** The annual cultural showcase of Nagaland (held Dec 1st–10th), designed by the State Government to preserve and promote the cultural heritage of all 17 Naga tribes and encourage **inter-tribal harmony**.

- **Act East Policy:** The core foreign policy initiative emphasizing economic, strategic, and cultural engagement with the Asia-Pacific region, strategically positioning the **Northeast as the physical and cultural gateway** to ASEAN.

- **Angami Stone-Pulling Ceremony:** A revered **monolith-erecting ritual** of the Angami tribe, historically performed to **commemorate jubilant occasions, peace treaties, or honor ancestors**. The act of pulling the massive stone slab by hundreds of men symbolizes the tribe's **unity, collective strength, and resilience**.

- **Ashta Lakshmi:** A term used by the Prime Minister to refer to the eight states of the North East, symbolizing the region's **immense potential** and strategic importance for India's future growth trajectory.

## Constitutional & Legal Provisions

- **Article 371A (Special Provision for Nagaland):** This Article grants special provisions, stating that no Act of Parliament concerning **Naga religious/social practices, Naga customary law and procedure, or ownership and transfer of land and its resources** shall apply to Nagaland unless the Legislative Assembly decides. This provision constitutionally protects the indigenous cultural and legal system showcased at the festival.

- **Ministry of DoNER:** Established to act as the nodal agency for the socio-economic development of the North Eastern Region (NER), focusing on planning, execution, and monitoring development schemes to address the infrastructure deficit and promote growth.

## Conclusion and UPSC Relevance

The event symbolizes the strategic confluence of **cultural preservation, community-led development, and international outreach** within the framework of the **Act East Policy**. The substantial development package confirms the government's commitment to transforming the Northeast from a border region into a high-

growth, **'first frontier'** for India's engagement with the world. This approach is key to achieving socio-economic parity and strengthening national unity by integrating the region's rich tribal diversity into the national mainstream while safeguarding its unique identity.

## 3. Gyan Bharatam Initiative: Safeguarding India's Manuscript Heritage

- **Flagship Initiative and Mandate: Gyan Bharatam** is the flagship initiative of the **Ministry of Culture (MoC)**, announced in the Union Budget 2025, dedicated to **surveying, documenting, conserving, digitizing, and disseminating India's manuscript heritage**. It aims to cover over **one crore manuscripts** through collaboration with academic institutions, museums, libraries, and private collectors.

- **National Digital Repository & Technology:** A key component is the establishment of a **National Digital Repository** supported by **advanced technology** and **Artificial Intelligence (AI)**. This ensures global accessibility, advanced searching, and the utilization of traditional knowledge in contemporary research, with **Rs. 491.66 crore sanctioned** for 2025-2031.

- **Operational Structure & Core Verticals:** The initiative is a **Pan-India** effort operationalized through a network of **Cluster and Independent Centres** (31 institutions initially). Its work is organized across five core verticals: **Survey & Cataloguing; Conservation & Capacity Building; Technology & Digitization; Linguistics & Translation;** and **Research, Publication & Outreach**.

- **The Delhi Declaration (Gyan Bharatam Sankalp Patra):** This declaration formalizes the national commitment to preserving manuscripts as the **"living memory of India's civilization."** It calls for modern conservation, large-scale digital access, renewed research, and transforming heritage preservation into a **people's movement**, positioning India as a global centre for manuscript-based learning.

- **Progress and Synergy:** The **Gyan Bharatam Digital Web Portal** has been launched, and approximately **3.5 lakh manuscripts** have already been digitized. The initiative works in synergy with other MoC autonomous organizations like the **Sangeet Natak Akademi** and **Eastern Zonal Cultural Centre (EZCC)**, which focus on promoting and preserving India's diverse performing arts, thus ensuring a holistic approach to cultural heritage.
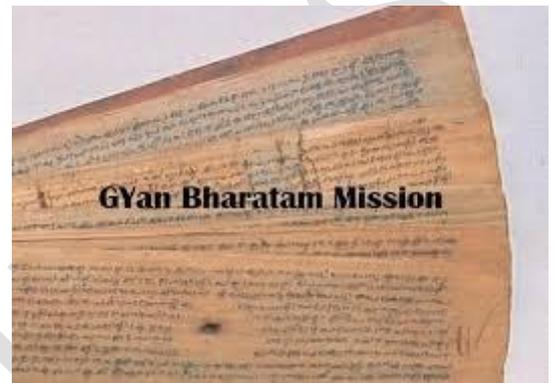
**Constitutional & Legal Provisions**

- **Constitutional Mandate (DPSP): Article 49** of the Constitution (Directive Principles of State Policy - DPSP) mandates that the State shall be obliged to protect every monument or place or object of artistic or historic interest, declared by or under law made by Parliament to be of national importance, from spoilation, disfigurement, destruction, removal, disposal or export, as the case may be. Manuscripts, as objects of historic interest, fall under this protective umbrella.

- **Key Act: The Ancient Monuments and Archaeological Sites and Remains Act, 1958** (AMASR Act) and its subsequent amendments, which govern the protection of ancient monuments, archaeological sites, and **antiquities**. Manuscripts that meet the criteria of antiquity may be covered under this Act.

- **Intellectual Property and Rights:** While the knowledge contained in the manuscripts is ancient, the **digitalization and dissemination** efforts are linked to modern intellectual property regimes, potentially requiring regulation concerning access, usage rights, and prevention of unauthorized commercial exploitation.

**Definitions & Key Concepts**
- **Manuscript:** Literally, "hand-written." A book, document, or piece of music written by hand rather than typed or printed. India possesses one of the world's largest collections of manuscripts, spanning diverse languages, scripts, and subjects (e.g., medicine, mathematics, literature).

- **Digital Repository:** A managed collection of digital content. In this context, it is an advanced, centrally-managed electronic system for storing, preserving, and providing access to digitized copies of the manuscripts.

- **Gyan Bharatam Sankalp Patra (Delhi Declaration):** A formal resolution/commitment made by the government and stakeholders to guide the principles, scope, and execution of the Gyan Bharatam initiative.

**Conclusion**

Gyan Bharatam represents a monumental and technologically advanced national commitment to salvaging and revitalizing India's immense manuscript legacy. By employing a 'Whole of Nation' approach involving institutions, technology, and a dedicated financial outlay, the initiative is not just an act of conservation but a strategic effort to re-integrate India's traditional knowledge into the contemporary global academic discourse, thereby strengthening the nation's cultural soft power and intellectual foundation.

## 2. Dispute Over 'Deepathoon' Site at Thirupparankundram

**Key Highlights**
- Tamil Nadu govt. informed the Madras High Court (Madurai Bench) that the **Karthigai Deepam has been lit at the Uchipillaiyar temple mandapam for over 150 years**, not on the stone pillar claimed as a *deepathoon*.

- The State asserted that **no temple records, registers, inscriptions, HR&CE files, or Agama texts** support the petitioners' claim that the pillar is a traditional deepathoon site.

- The Division Bench began hearing appeals against the earlier **Single Judge order directing lighting of the Deepam at the pillar**, in addition to traditional locations.

- Advocate General argued that earlier judgments (1920 demarcation case and 1996 HC ruling) also **did not recognize the pillar as a deepathoon**; in 1996 the court refused lighting Deepam anywhere other than the traditional mandapam.

- The State emphasized that **right to worship must yield to considerations of public order**, and the Single Judge should have upheld status quo in absence of credible evidence.

- The AG contended that the December 1 order lacked evidentiary basis to classify the stone pillar as a deepathoon and could potentially disturb peace.

**Definitions & Key Concepts**
- **Deepam/Deepathoon:** A ceremonial lamp/structure traditionally used for lighting lamps during temple festivals; claims of historic usage must be backed by inscriptions, Agama rules, or temple records.

- **Agamas:** Ancient Hindu scriptures prescribing temple rituals, architectural norms, worship procedures, and festival traditions.

- **Right to Worship:** A facet of **Article 25**, subject to **public order, morality, health**, and other constitutional limitations.

## Constitutional & Legal Provisions

- **Article 25 & 26:** Guarantee freedom of religion and management of religious affairs but allow the State to regulate in the interest of **public order, morality, and health**.

- **Hindu Religious and Charitable Endowments (HR&CE) Department:** Statutory body managing Hindu temples in Tamil Nadu; empowered to administer rituals as per tradition and ensure public safety.

- **Judicial Precedent:**

    o **1920 suit** demarcated temple–dargah boundaries with **no recognition of a deepathoon site**.

    o **1996 Madras HC judgment** disallowed lighting Deepam at any non-traditional site, affirming the mandapam as the legitimate location.

- **Doctrine of Status Quo:** Courts often maintain existing practice to avoid disturbance of public order unless strong evidence justifies change.

## Additional Analytical Points

- Religious practices must be **"essential religious practices"** to receive higher protection; absence of historical or scriptural evidence weakens claims.

- The case reflects the recurring judicial challenge of balancing **religious tradition, administrative feasibility, and inter-community harmony**.

- Disputes involving religious sites on shared or sensitive land (temple–dargah vicinity) require heightened caution to prevent social tensions.

- HR&CE's archival and administrative records play a critical role in determining authenticity of ritual claims.

## Conclusion

The Tamil Nadu government has maintained that there is **no historical, documentary, or scriptural basis** to recognize the stone pillar at Thirupparankundram as a deepathoon. By emphasizing longstanding practice and previous judicial rulings, the State argues that modifying the ritual site without evidence could disturb public order. The matter underscores the judiciary's responsibility in balancing religious freedoms with societal stability.

# EDITORIALS & OPINION

## 1. The Paradox of Citizenship Governance in India

- **Conflict over Authority (ECI vs. MHA):** The **Election Commission of India's (ECI) Special Intensive Revision (SIR)** of electoral rolls is legally challenged on the grounds that the **ECI lacks the power to determine citizenship**. The petitioners argue that this authority rests solely with the **Union Ministry of Home Affairs (MHA)** under the **Citizenship Act, 1955**, and **quasi-judicial bodies** like the **Foreigners Tribunals (FTs)**. The ECI counters that its **Constitutional mandate (Article 324)** to ensure an eligible electoral roll inherently requires verifying citizenship eligibility.

- **Lack of Single Citizenship Proof & Onus of Proof:** There is currently **no single, definitive document** that serves as proof of Indian citizenship countrywide (e.g., passport/electoral roll are only proof of status, not status of evidence). Legally, when citizenship is challenged, the **onus of proving citizenship rests squarely on the individual**, not the State (a fundamental principle in FT proceedings). This creates a "conflict between evidence of status and status of evidence."

- **Evolving Rules for Citizenship by Birth:** India moved from a purely **'Jus Soli'** (Right of the Soil) principle at the Republic's founding to incorporating elements of **'Jus Sanguinis'** (Right of Blood/Lineage) via amendments to the **Citizenship Act, 1955** (amended in 1986, 2003, etc.).

  - **Pre-July 1, 1987:** Born in India is a citizen.

  - **July 1, 1987–Dec 2, 2004:** Born in India, and **either parent** must be a citizen.

  - **On or After Dec 3, 2004:** Born in India, and **both parents** must be citizens, or **one is a citizen and the other is not an 'illegal migrant.'**

  

- **NRC, NPR, and the Multipurpose National Identity Card (MNIC):** The **Citizenship Act, 1955, as amended in 2003**, mandates the Central Government to compulsorily register every citizen and issue a **National Identity Card (MNIC)**, based on the **National Register of Citizens (NRC)**. The NRC is a subset of the **National Population Register (NPR)**, which lists all usual residents (citizens and non-citizens). The NPR (data collected in 2010/2015) is thus a precursor exercise for the NRC.

- **The Assam NRC Example and the Democracy Paradox:** The **Assam NRC (2019 draft)**, based on the special provisions of **Section 6A** of the Citizenship Act, 1955 (inserted via the 1985 Amendment), illustrated the practical difficulties, marking **19 lakh residents as 'D' (Doubtful) citizens** for failure to prove lineage/residency before the cut-off date (March 24, 1971). This highlights the **"paradox of democracy"**: the people create the sovereign state, yet the **administrative state (via its bureaucracy/police/FTs)** ultimately determines who constitutes the 'people' (citizens).

### Constitutional & Legal Provisions

- **Article 324 (Constitution):** Empowers the ECI with the superintendence, direction, and control of the preparation of electoral rolls and the conduct of all elections to Parliament and the Legislature of every State. The ECI's authority to verify the eligibility of electors (which includes citizenship) stems from this plenary power.

- **The Citizenship Act, 1955:** The primary law governing the acquisition and determination of Indian citizenship (by birth, descent, registration, naturalisation, incorporation of territory). It vests the power of formal citizenship determination with the Central Government (MHA).

- **Foreigners Act, 1946:** The legal basis for the establishment of **Foreigners Tribunals (FTs)—quasi-judicial bodies** with powers similar to a Civil Court—to determine whether a person is a 'foreigner' or an illegal migrant. The burden of proving non-foreigner status is on the individual (Section 9 of the Act).

**Definitions of Key Terms**

- **Jus Soli (Right of the Soil):** A principle of nationality law by which citizenship is determined by the place of birth (territory).

- **Jus Sanguinis (Right of Blood):** A principle of nationality law by which citizenship is determined by the nationality of the parents/ancestors.

- **National Register of Citizens (NRC):** A register containing the names and relevant information of all genuine **Indian Citizens** as defined by the Citizenship Act, 1955.

- **National Population Register (NPR):** A register of all **usual residents** of the country, defined as a person who has resided in a local area for the past six months or intends to reside there for the next six months or more (includes both citizens and non-citizens).

**Conclusion**

The legal challenge against the ECI's Special Intensive Revision of electoral rolls has brought to the fore the deeply rooted complexities and ambiguities in India's citizenship governance. The conflict over jurisdictional authority, the lack of a single proof of citizenship, and the fundamental paradox of the administrative state determining the 'people' underscore a need for a clear, unified, and legally sound framework that balances national security imperatives with the constitutional rights and procedural fairness owed to every resident.

## 2. National Convention on Health Rights: Challenging Privatisation and Advocating for Universal Health Coverage

- **Core Agenda: Right to Health and Public System Strengthening:** The Convention, organized by **Jan Swasthya Abhiyan (JSA)**, aims to address major health challenges by charting an agenda on the **Right to Health**. The central vision is to affirm healthcare as a **fundamental right** and anchor it in **robust, responsive public health systems**. It will critique the commercialization of healthcare and draw lessons from the COVID-19 crisis, emphasizing decentralized planning and community-led models.

- **Challenging Privatisation and PPPs:** A major focus is opposing the aggressive push for the **privatisation of public health services**, often through **Public-Private Partnerships (PPPs)**, which threaten to dismantle already weak public systems and render healthcare unaffordable for the majority of Indians who depend on public provisioning (over 80 crore people). JSA advocates for halting the "selling off" of medical colleges and health facilities to private players.

  - **Definition: Out-of-Pocket Expenditure (OOPE)** refers to the amount that people spend directly on health care without third-party reimbursement (e.g., insurance). India's OOPE remains critically high.

- **Regulation of Commercial Private Sector and Patient Rights:** Commercial private healthcare has expanded rapidly but remains largely **unregulated**. The Convention demands the **effective implementation** of the **Clinical Establishments (Registration and Regulation) Act, 2010**, which has seen only "nominal" implementation despite being enacted years ago. Key regulatory demands include:

  - Rate standardization and transparent pricing.

  - Mandatory observance of the **Charter of Patient's Rights**.

  - Accessible grievance redress systems to curb overcharging and unnecessary procedures.

- **Demand for Fairer Financing and Drug Policy:** India's **financial allocation for public health** is among the lowest globally (just $25 annual per capita public spending and only $2\%$ of the Union Budget). Participants will advocate for **enhanced government spending** and explore alternative financing to reduce the high OOPE, which often pushes families into poverty.

  - **Medicine Access:** The convention demands a pro-people pharmaceutical policy including placing **essential medicines under effective price control** (currently over $80\%$ are outside price control), eliminating irrational drug combinations, and strengthening public sector production.

- **Justice for Health Workers and Social Equity:** The convention highlights the urgent need for **justice to health workers** (doctors, nurses, ASHAs, paramedics, etc.), many of whom face low wages, insecure employment, and inadequate social security, despite their indispensable role during the pandemic. A special session will address **gender and social justice** by focusing on the experiences of marginalized groups (Dalits, Adivasis, LGBTQ+, etc.) to embed inclusion and **non-discrimination** in health systems.

**Conclusion and UPSC Relevance**

The National Convention on Health Rights is a significant civil society initiative that highlights the core failures and systemic inequities in India's healthcare delivery system, particularly the struggle between **health as a public good** and its **commercialisation**. For the UPSC Civil Services Exam, this topic is central to **General Studies Paper II (Social Justice, Governance, and Human Resource Development)**. Key takeaways include the constitutional basis of the **Right to Health** (implied under **Article 21** - Right to Life, and supported by **DPSP Article 47** - duty to improve public health), the legislative gap and implementation failure of the **Clinical Establishments Act, 2010**, the crisis of **Out-of-Pocket Expenditure (OOPE)**, and the socio-economic necessity of increasing public health spending as a proportion of GDP (National Health Policy 2017 target is 2.5% by 2025).

## 3. Crisis in Indian Transport: Price, Supply, and Neo-Liberal Constraints

- **Divergent Shocks in Transport Infrastructure:** Recent crises highlight two distinct market failures:

  - **Demand Shock (Indian Railways):** The sudden rush for Bihar-bound trains (due to Chhath Puja/elections) faced **fixed, affordable prices** and **inelastic supply**. This led to massive **excess demand**, overcrowding, and hazardous conditions, rather than price increases.

  - **Supply Shock (Indigo Flights):** The mass cancellation of Indigo flights reduced supply against normal demand. This led to **huge price increases** and consumer loss, amplified by Indigo's **near-monopoly** position in the competitive, deregulated aviation market.

- **Critique of Low Prices in Public Services:** Critics argue that low prices for government services (like train travel) cause inefficiency due to excess demand. However, the article argues that for welfare services (health, education, transport), **prices must remain affordable**. The solution to overcrowding is **not raising prices** but **increasing state investment** to expand supply and access, a strategy constrained by neo-liberal economics.

- **Constraints of the Neo-Liberal Economy on the State:** The current economic model imposes strict limits on government intervention by restricting the **size of the fiscal deficit**. This constrains the State's ability to undertake the significant investments required to expand public services (like Railways) and match demand. The State is left with no option but to keep prices low while struggling with the resulting inefficiency and overcrowding.

- **Monopolies and Failures of Deregulation:** The Indigo crisis exposes the limits of **deregulation** and the private sector model, which assumes perfect competition. In reality, deregulation often leads to the **concentration of capital and the rise of monopolies** (like Indigo's near-monopoly). When a monopoly faces a supply restriction, it amplifies price increases market-wide, demonstrating that unregulated private markets can lower consumer welfare.

- **Alternative Financing for Welfare:** To overcome the fiscal deficit constraint and fund the expansion of public services, the article suggests increasing revenue through **wealth and income taxation of the top 1%** (citing research by Thomas Piketty). This method could raise considerable resources to strengthen the welfare state without violating fiscal deficit targets, though it faces political resistance from domestic and global capital.

**Conclusion**

The two transport crises serve as case studies demonstrating the structural flaws resulting from India's adherence to the **neo-liberal economic model**: the degradation and under-investment in public services on one hand, and the rise of unchecked private monopolies on the other. Key takeaways include understanding the concepts of **Demand Shock** vs. **Supply Shock**, the critique of the **Fiscal Deficit** as a constraint on welfare spending, and the necessity of **anti-monopoly intervention** (government regulation) to protect consumer welfare in deregulated markets. The suggested solution (wealth tax) directly addresses the fiscal debate in Indian economic policy.

## 4. Supreme Court's Verdict on Timelines: Constitutional Morality vs. Textualism

**Context:** The **Supreme Court of India**, in its **16th Presidential Reference** under **Article 143**, examined a critical constitutional silence: **Should courts prescribe timelines for actions of high constitutional authorities**, notably the **Governor under Article 200** (assent to State Bills) and the **Speaker under the Tenth Schedule** (defection decisions)?

**Core Constitutional Issue**

- The Constitution does **not prescribe explicit timelines** for:

  o The **Governor's decision** on Bills passed by State Legislatures (Article 200), and

  o The **Speaker's adjudication** of defection petitions (Tenth Schedule).

- This silence raises a fundamental question: **Can judicially imposed timelines fill constitutional gaps without violating separation of powers?**

## Supreme Court's Textualist Approach (No Judicial Timelines)

- The Court **declined to impose fixed, one-size-fits-all timelines** on the Governor/President for assenting to Bills.

- **Rationale:**

    o **Textualism:** Fidelity to the constitutional text and structure; courts should not add what the Constitution omits.

    o **Separation of Powers:** Prescribing timelines would amount to **judicial overreach**, intruding into executive/legislative domains.

- The advisory opinion thus prioritised **institutional restraint** over proactive judicial lawmaking.

## 'Constitutional Perversion' via Inaction (Critique)

- Critics argue that **indefinite inaction** can:

    o **Neutralise legislative will** (Governors sitting on Bills),

    o **Defeat the anti-defection law** (Speakers delaying rulings),

    o Thereby **undermine democratic accountability**.

- The absence of timelines, they contend, enables a **constitutional anomaly**—governance by delay rather than decision.

## Rejection of 'Deemed Assent' but Scope for Limited Judicial Review

- The Court **rejected 'deemed assent'**, holding it **alien to the Constitution**.

- However, it clarified:

    o **Prolonged, unexplained, and indefinite inaction** by a Governor is **unconstitutional**.

    o Courts may exercise **limited judicial review** and issue a **mandamus to act**—**without dictating the outcome** (assent/withhold/reserve).

## Tension with Constitutional Morality

- The verdict is criticised for underplaying **Constitutional Morality**, a doctrine articulated by **B. R. Ambedkar**.

- **Constitutional Morality** demands interpretation aligned with:

    o Democratic ethos,

    o Accountability,

    o The spirit—not merely the letter—of the Constitution.

- Critics argue that **judicial hesitation** to read safeguards into constitutional silence risks **abdicating the Court's role as guardian of democracy**.

## Governance and Federalism Implications

- By reinforcing gubernatorial discretion under **Article 200** (assent/withhold/return/reserve), the opinion:

    o Risks **delaying State legislative agendas**,

    o Potentially **strains cooperative federalism**,

    o Enhances the leverage of centrally appointed Governors over elected State governments.

- The rejection of judicially limiting discretion based on **Council of Ministers' advice** intensifies these concerns.

## Key Concepts Explained

- **Presidential Reference (Article 143):** Power of the President to seek the Supreme Court's advisory opinion on questions of public importance; **non-binding**.

- **Constitutional Morality:** Respect for constitutional forms and spirit to prevent subversion through practice.

- **Textualism:** Interpretation anchored strictly in constitutional text and structure.

## Relevant Constitutional Provisions

- **Article 200:** Governor's options on State Bills; uses "**as soon as possible**" only for returning a Bill.

- **Article 201:** President's decision on Bills reserved by the Governor.

- **Tenth Schedule:** Speaker's quasi-judicial authority on defections; **no timelines prescribed**.

- **Article 142:** Power to do "complete justice"; **not used** here to create deemed assent.

## Conclusion

The Supreme Court's advisory opinion reaffirms a **strict textualist stance**, prioritising separation of powers by refusing to mandate timelines for constitutional authorities. While this preserves institutional boundaries, critics warn it may **enable governance by delay**, diluting democratic intent. The debate underscores a persistent constitutional tension: **how to reconcile textual fidelity with constitutional morality in a politicised governance landscape**.

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# ETHICS

## 1. Vande Mataram Controversy: Historical Context and Legal Status

**Context**

- **The 1937 Congress Resolution (The "Mutilation" Debate):** The current political controversy revolves around the **Congress Working Committee CWC Resolution of October 30, 1937**.[2] To ensure the song's **pan-India and inclusive appeal** and address objections from Muslim leaders over the later stanzas' references to Hindu goddesses (as noted by leaders including Rabindranath Tagore, Mahatma Gandhi, and Jawaharlal Nehru), the CWC unanimously decided to adopt only the **first two stanzas** as the National Song for Congress and public functions.[3] The claim of "mutilation" or "betrayal" is a modern political interpretation challenging this pragmatic, pre-Independence decision.



- **Origin and Historical Significance:** Composed by **Bankim Chandra Chattopadhyay** and first published in his novel *Anandamath* and literary journal *Bangadarshan* in 1875.[4] It became the **"mantra"** and emotional rallying cry of the national movement, especially following the Partition of Bengal (1905), and was first sung at the 1896 Congress session by Rabindranath Tagore. This historical significance is undisputed across the political spectrum.

- **Constituent Assembly's Decision (1950):** On January 24, 1950, Dr. Rajendra Prasad announced the Constituent Assembly's decision: **'Jana Gana Mana'** would be the **National Anthem** (due to its secular meaning and suitability for marching tunes), while **'Vande Mataram'** would be the **National Song** and **honored equally** with the National Anthem.[5] This settled the status of both symbols based on historical significance and communal harmony.

- **Legal Distinction (Anthem vs. Song):** Crucially, the **National Song** does **not** have the same constitutional or legal backing as the **National Anthem**.[6] Article [7]$51\text{A}(a)$ (Fundamental Duty, introduced by the 42nd Amendment, 1976) mandates respect only for the **National Anthem and National Flag**, not the National Song.[8] The **Prevention of Insults to National Honour Act, 1971** also specifically criminalizes disrespect to the National Anthem, but lacks a parallel provision for the National Song.

- **Judicial Intervention:** The Supreme Court's landmark judgment in **Bijoe Emmanuel vs. State of Kerala (1986)** upheld the fundamental rights of freedom of religion and expression ([9]$\text{Article 25}$ and [10]$\text{Article 19}(1)(a)$), ruling that **compelling participation in singing the National Anthem (or Song)** against genuine religious conviction is a violation, provided the individual stands respectfully and does not cause disturbance.

- **Contemporary Debate and Future Proposals:** The current debate, marking the 150th year of the song, questions the intentions of the ruling party.[12] Proposals have been made to Parliament to amend $\text{Article 51A}$ to accord the National Song the same status and respect as the National Anthem. This highlights the political use of national symbols to shape the national narrative and identity.

## Key Definitions and Concepts

- **National Anthem ($^{13}\text{Jana Gana Mana}$):** The musical composition designated as the official anthem, accorded a specific set of rules for rendition, and backed by a Fundamental Duty (Article 51A).

- **National Song ($\text{Vande Mataram}$):** A patriotic hymn of historical significance in the freedom struggle, given 'equal honour' by the Constituent Assembly, but lacking the same mandatory legal/constitutional enforcement as the Anthem.

## Constitutional & Legal Provisions (Related to Topic)

- **Article 51A (a) (Fundamental Duty):** To abide by the Constitution and respect its ideals and institutions, the National Flag, and the **National Anthem**.[17] (Vande Mataram is notably absent).

- **Article 25 (Fundamental Right):** Guarantees the **Freedom of Conscience and Free Profession, Practice, and Propagation of Religion**, which was the basis of the SC verdict in the *Bijoe Emmanuel* case.

- **Prevention of Insults to National Honour Act, 1971:** Provides for penal punishment for showing disrespect to the **National Anthem** and **National Flag**, but not explicitly the National Song.

## Conclusion

The recurring controversy over Vande Mataram, 75 years after its status was settled by the Constituent Assembly, underscores the continuous tension between historical reverence, national unity, and religious inclusivity in India's political discourse.19 While its role in the freedom struggle is paramount, the legal and constitutional distinction between the National Anthem and the National Song remains clear, placing the onus on political leadership to respect the nuanced decisions made by the founding fathers.

# 2. Judicial Scrutiny and Free Speech in the Digital Age

## Summary & Key Highlights

- **Judicial Expansion of Scope (The *Allahbadia* Case):** The Supreme Court's *Ranveer Allahbadia vs Union of India* proceedings raised concerns by expanding the case's scope—originally challenging FIRs for obscene content—to examine the necessity of new regulatory measures for online content that is "offensive to well-known moral standards of our society."

- **Suggestion for New Regulatory Body:** The Court suggested the creation of **neutral, autonomous bodies** to regulate online content, deeming existing self-styled bodies insufficient. It also urged the government to publish draft guidelines and invite public comments, potentially encroaching upon the Legislative domain.

- **Separation of Powers Concern (Judicial Overreach):** The article highlights the concern of judicial overreach, arguing that identifying the problems and requiring new laws for content regulation falls primarily within the domain of the **Legislature (Parliament)**, not the **Judiciary**, citing the *Common Cause vs Union of India* (2008) caution against solving legislative problems.

- **Conflict with Constitutional Guarantees (Article 19(2)):** The proposed suggestions for new, potentially stringent regulations conflict with the Supreme Court's own ruling in *Kaushal Kishor* (2023), which categorically held that the grounds for restriction under **Article 19(2)** (Sovereignty, Security, Public Order, etc.) are **exhaustive**, and no additional restrictions can be imposed.

- **Pre-Censorship vs. Regulation:** There is a cautionary reminder from the *Sahara India* (2012) case, where the Court emphasized that **pre-censorship of the media must be avoided at all costs** and restraint should only be a "last resort" satisfying a high threshold of reasonableness, highlighting the thin line between necessary regulation and unlawful restraint.

- **Existing Legal Framework and International Comparison:** India already has laws like **Sections 66, 67, 66E, and 66F of the IT Act, 2000** and the **IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021** (which already impose prior restraint). Most major democracies (EU's Digital Services Act, UK's Online Safety Act) focus on **content removal protocols and post-facto penalties**, not broad pre-censorship or statutory gags.

### Definitions of Key Terms

- **Prior Restraint:** Governmental action that prohibits speech or expression before it can take place. In the context of media, it often means pre-censorship, which is generally disfavoured in democracies.

- **Judicial Overreach:** A controversial concept where the Judiciary is perceived to have assumed roles and functions that constitutionally belong to the Executive or the Legislature.

### Constitutional & Legal Provisions

- **Article 19(1)(a):** Guarantees the fundamental right to **freedom of speech and expression** to all citizens.

- **Article 19(2):** Lays down the **only grounds** upon which reasonable restrictions on the right under Article 19(1)(a) can be imposed (e.g., sovereignty and integrity of India, security of the State, friendly relations with foreign States, public order, decency or morality, contempt of court, defamation, or incitement to an offence).

- **Section 66F of the IT Act, 2000:** Penalizes acts of **Cyber Terrorism**, highlighting that serious online offences are already covered under existing law.

### Conclusion and UPSC Relevance

The ongoing judicial proceedings concerning online content regulation are crucial for examining the delicate balance between safeguarding free speech and curbing harmful digital content.

## 3. India's Evolving Biosecurity Framework and Challenges

- **Rising Threat from New-Age Biotechnology:** Advances in biotechnologies, such as CRISPR and synthetic biology, bestow increased control over biological agents. This capability raises the significant risk of **intentional misuse** by malicious actors and non-state actors (e.g., alleged preparation of Ricin toxin), necessitating a robust biosecurity upgrade to protect human, animal, and plant health.

- **Biosecurity vs. Biosafety Distinction: Biosecurity** refers to practices and systems designed to **deter the intentional misuse** (theft, diversion, or deliberate release) of biological agents, toxins, or technologies. **Biosafety** refers to practices designed to prevent the **unintentional or accidental leakage** of pathogens. A strong biosafety protocol is a foundational component of biosecurity.

- **India's High Vulnerability:** India's vast geography, high population density, rich biodiversity, and heavy **dependence on agriculture** make it extremely vulnerable to cross-border bio-risks. An attack on crops or livestock could severely jeopardize food security and national economic stability, reinforcing the urgency for a cohesive defense mechanism.

- **Existing but Fragmented Legal and Institutional Framework:** India has multiple agencies and laws:

  o **Agencies:** Department of Biotechnology (research governance), National Centre for Disease Control (outbreak surveillance), Department of Animal Husbandry (livestock biosecurity), and Plant Quarantine Organisation (agricultural imports).

  o **Laws: Environment (Protection) Act, 1986** (governs GMOs/hazardous microbes) and the **Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005** (criminalizes biological weapons).

- **Gap in Unified National Framework:** Despite the multitude of engaged agencies, India currently lacks a **unified national biosecurity framework**. This fragmentation leads to gaps in coordination, surveillance, and effective response. The country's performance on the **Global Health Security Index (currently ranked 66th)** indicates that while detection capability has improved, the capacity for effective threat response has reduced.

- **International Commitments:** India is a signatory to the **Biological Weapons Convention (BWC), 1975**, the first multilateral treaty banning an entire category of Weapons of Mass Destruction (WMD), which prohibits the development, production, stockpiling, and acquisition of biological weapons. India also participates in the **Australia Group**, an informal arrangement aimed at harmonizing export controls on items that could be used for chemical or biological weapons.

## Key Definitions & Concepts

- **Biological Agents:** Naturally occurring or engineered microorganisms (bacteria, viruses, fungi) or toxins that can cause disease or death in humans, animals, or plants.

- **Dual-Use Research:** Biological research that provides clear benefits but could also be misused to pose a threat to public health or security.

- **Bioweapons:** Weapons of Mass Destruction (WMD) that use biological agents or toxins to kill or incapacitate humans, animals, or plants.

## Constitutional & Legal Provisions

- **Entry 15 of the State List (List II):** Deals with "Public health and sanitation" and "preservation, protection and improvement of stock," giving states a primary role in health and animal biosecurity.

- **Entry 10 of the Union List (List I):** Covers "Foreign affairs, all matters which bring the Union into relation with any foreign country," under which the Central Government handles international treaties like the BWC.

- **Article 21 (Right to Life):** A robust biosecurity framework is integral to protecting the fundamental right to life and health of the population.

**Additional Important Keypoints**

- **One Health Approach:** Effective biosecurity necessitates the adoption of a **One Health approach**, recognizing the interconnectedness of human, animal, and environmental health, thereby requiring seamless coordination across different nodal agencies.

- **Biosecurity in Defense:** The need for specialized bio-defense capabilities, including advanced pathogen detection and rapid countermeasure development, is paramount to addressing sophisticated biothreats.

- **Modernizing Laws:** The need to modernize outdated legal frameworks to keep pace with the rapid and complex advancements in biotechnology is a critical gap that must be addressed to effectively regulate dual-use research.

**Conclusion**

The evolution of biotechnology and the rising threat from both state and non-state actors necessitate an urgent and transformative upgrade of India's biosecurity apparatus. The current fragmented institutional and legal framework, reflected in the low Global Health Security Index ranking, poses a profound risk to national security and public health. Establishing a **unified, One Health-integrated National Biosecurity Framework** is essential for coordinating threat detection, response, and international cooperation (under BWC) to safeguard India's large population and vital agricultural sector from biological disasters.

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# YOJANA & KURUKSHETRA

## 1. India on Fast Track – Sunil Kumar Batra

**Context**

**India on Fast Track** is a contemporary non-fiction work authored by **Sunil Kumar Batra**, a former senior police officer and ex-Director of the **Central Bureau of Investigation**.
The book offers an **insider's perspective on India's governance transformation**, institutional reforms, and the country's trajectory towards becoming a developed nation.

**Core Theme**

The central argument of the book is that **India has entered a decisive phase of accelerated transformation**, driven by:

- Strong political leadership

- Administrative and governance reforms

- Technology-led service delivery

- National security and internal stability

India, according to the author, is no longer moving incrementally but is on a **"fast track" of systemic change**.

**Key Arguments and Insights**

**1. Governance and Administrative Reforms**

- Emphasis on **decisive decision-making** and reduced policy paralysis.

- Streamlining of bureaucratic processes and improved **centre–state coordination**.

- Shift from entitlement-based governance to **performance and outcomes-based governance**.

**2. Rule of Law and Internal Security**

- Strong focus on **law enforcement reforms**, accountability, and professionalism in policing.

- Crackdown on **corruption, organised crime, and terror networks**, strengthening public trust in institutions.

- Improved internal security environment seen as a **precondition for economic growth**.

**3. National Security and Strategic Assertiveness**

- India's evolving posture towards **national security and strategic autonomy**.

- Greater emphasis on **counter-terrorism, border security, and intelligence coordination**.

- Projection of India as a **confident regional and global actor**.

**4. Technology and Digital Governance**

- Digital platforms enabling **direct benefit transfers, transparency, and efficiency**.

- Technology as a force multiplier in **policing, investigation, and service delivery**.

- Digitalisation reducing leakages and enhancing state capacity.

**5. Economic and Institutional Transformation**

- Structural reforms aimed at improving **ease of doing business**.

- Focus on infrastructure, manufacturing, and formalisation of the economy.

- Strengthening of institutions as the foundation for **long-term economic resilience**.

**Author's Perspective**

- The narrative is shaped by the author's long experience in **policing, intelligence, and investigation**.

- Offers a **practitioner's view** rather than an academic critique.

- Strongly advocates **discipline, integrity, and nationalism** as guiding principles of governance.

**Critical Observations**

- The book is often seen as **optimistic and state-centric**, highlighting successes more than limitations.

- Critics may argue that it underplays concerns related to:

    o Civil liberties

    o Institutional autonomy

      o   Federal and democratic dissent

- Nevertheless, it provides valuable insight into the **administrative mindset driving current reforms**.

## Conclusion

*India on Fast Track* presents a **governance-centric vision of India's rise**, arguing that firm leadership, institutional discipline, and technology-driven reforms have placed the country on an accelerated development path. While the narrative invites critical scrutiny, the book is a useful reference for understanding **contemporary governance thinking, internal security perspectives, and the administrative logic behind India's current reform trajectory**—making it relevant for serious UPSC aspirants.

## 2. Indian Industries: Issues, Challenges and Opportunities – Dr. Subhash Chandra Pandey

**Context**

**Indian Industries: Issues, Challenges and Opportunities** is an academic and policy-oriented work authored by **Subhash Chandra Pandey**.
The book provides a **comprehensive overview of India's industrial sector**, examining its structural weaknesses, emerging challenges, and future growth opportunities in the context of economic reforms and globalisation.

**Core Theme**

The book argues that **industrial development is central to India's economic transformation**, employment generation, and global competitiveness. However, India's industrial sector continues to face **deep structural and institutional constraints** that must be addressed to realise its full potential.

**Key Issues in Indian Industries**

- **Low Manufacturing Share:** Manufacturing remains stagnant at around 15–17% of GDP, limiting job creation.

- **Infrastructure Bottlenecks:** Inadequate power supply, logistics inefficiencies, and high transport costs.

- **Technology Gap:** Dependence on imported technology and low R&D expenditure.

- **Skill Mismatch:** Disconnection between industrial needs and workforce skills.

- **Regulatory Complexity:** Multiplicity of laws, compliance burden, and inspector raj issues.

**Major Challenges Highlighted**

**1. Global Competition**

- Pressure from low-cost manufacturing hubs, especially East and Southeast Asia.

- Difficulty for Indian MSMEs to integrate into **global value chains (GVCs)**.

**2. Financial Constraints**

- Limited access to affordable credit, particularly for **MSMEs**.

- Rising NPAs affecting industrial lending.

## 3. Regional Imbalances

- Industrial concentration in select states leading to **uneven regional development**.

- Backward regions remain excluded from industrial growth.

## 4. Environmental and Sustainability Concerns

- Industrial pollution and resource inefficiency.

- Increasing compliance requirements due to climate and environmental norms.

## Emerging Opportunities

- **Demographic Dividend:** Large working-age population can support labour-intensive industries.

- **Policy Push:** Initiatives such as *Make in India*, *PLI schemes*, and *Atmanirbhar Bharat*.

- **Digitalisation & Industry 4.0:** Automation, AI, and data-driven manufacturing.

- **MSME Potential:** MSMEs as engines of employment, innovation, and exports.

- **Green Industries:** Renewable energy, electric mobility, and sustainable manufacturing.

## Policy Suggestions in the Book

- Simplification of industrial and labour regulations.

- Strengthening **infrastructure and logistics**.

- Boosting domestic **R&D and innovation ecosystems**.

- Skill development aligned with industry demand.

- Balanced regional industrialisation through targeted incentives.

## Analytical Value

- Combines **theoretical foundations** with **policy analysis**.

- Useful for understanding **structural transformation** of the Indian economy.

- Provides a **balanced critique**, acknowledging both constraints and reform potential.

## Conclusion

*Indian Industries: Issues, Challenges and Opportunities* offers a **systematic and nuanced understanding of India's industrial landscape**. By identifying persistent bottlenecks while highlighting future-ready opportunities, the book serves as a valuable resource for UPSC aspirants to analyse **industrial growth, economic reforms, and India's path towards inclusive and sustainable development**.

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# PIB & PARLIAMENTARY RESEARCH STUDIES (PRS)

## 1. Blue Economy Leap: Investment Opportunities in Lakshadweep Fisheries

**Summary & Key Highlights**

- **Untapped Fisheries Potential:** Lakshadweep, India's only coral island chain, possesses a vast **Exclusive Economic Zone (EEZ)** of approximately **400,000 sq. km** (nearly 20% of India's EEZ) and a lagoon area of **4,200 sq. km**. The estimated tuna potential is **one lakh tonnes**, but current production is only around **15,000 tonnes**, indicating immense untapped potential.

- **Focus on High-Value and Export-Oriented Tuna:** Investment is being sought for the entire tuna value chain: deep-sea fishing, modern processing, canning, and exports. The region's traditional, sustainable fishing practices (pole and line) make it ideal for **Marine Stewardship Council (MSC) eco-labelling**, which can secure premium pricing and access to high-end global markets with a brand identity like "Lakshadweep Sustainable Tuna."

- **Seaweed Cultivation Cluster:** Lakshadweep has been notified as a dedicated **Seaweed Cluster** under the **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**. The vast lagoon area is conducive to offshore farming, biomass processing, and manufacturing of bioproducts (food, pharmaceuticals, cosmetics). The Administration is developing a leasing policy to facilitate private sector offshore farming.

- **Mariculture and Ornamental Fisheries:**
  Opportunities exist in:

  - **Offshore Cage Farming:** Leveraging the large EEZ for sustainable mariculture of species like sea bass and pompano, supported by successful pilot projects in other states.

  

  - **Ornamental Fisheries:** The rich biodiversity of nearly **300 species** suitable for the aquarium trade makes it an ideal location for establishing marine ornamental hatcheries and integrated rearing units to reduce dependence on wild-caught species.

- **Policy Facilitation and Investment Attraction:** The first-ever Investors' Meet in Lakshadweep generated strong interest, envisaging over **₹500 crore** worth of investment proposals. To streamline and expedite project implementation, the UT Administration is developing a **single-window system** for smooth approvals.

**Definitions of Key Terms**

- **Exclusive Economic Zone (EEZ):** A sea zone over which a sovereign country has special rights regarding the exploration and use of marine resources, including energy production from water and wind.

- **Marine Stewardship Council (MSC) Certification:** A global, science-based voluntary eco-labelling program for wild-capture fisheries that meet an international standard for sustainable fishing, ensuring traceability and stock health.

**Constitutional & Legal Provisions**

- **The Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976:** This Act legally defines India's maritime zones, including the EEZ (up to 200 nautical miles from the baseline), within which Lakshadweep's massive fishing potential is situated.

- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** A flagship scheme under the Ministry of Fisheries, Animal Husbandry & Dairying, focusing on the sustainable and responsible development of the fisheries sector with a total investment of over ₹20,050 crore (for five years, FY21 to FY25), supporting activities like deep-sea fishing, seaweed cultivation, and infrastructure development.

**Conclusion and UPSC Relevance**

The focus on developing Lakshadweep's blue economy signifies a strategic shift toward utilizing India's vast marine resources for economic growth, employment generation, and enhancing exports.

## 2. The Viksit Bharat Shiksha Adhishthan Bill, 2025: Reforming Higher Education Regulation

**Context:** The **Viksit Bharat Shiksha Adhishthan Bill, 2025** was introduced in the **Lok Sabha** on **15 December 2025** by the **Ministry of Education**.

The Bill seeks to **overhaul India's higher education regulatory architecture** by creating a single apex body, in line with the vision of **NEP 2020**, and replacing multiple overlapping regulators.

**Objective of the Bill**

- To establish a **unified, streamlined, and transparent regulatory framework** for higher education.

- To reduce **regulatory fragmentation** and improve **academic quality, standards, and accreditation**.

**Replacement of Existing Regulatory Bodies**

The Bill proposes to **repeal the Acts** governing the following bodies:

- **University Grants Commission (UGC)**

- **All India Council for Technical Education (AICTE)**

- **National Council for Teacher Education (NCTE)**

These bodies will be replaced by a single apex institution.

**Exclusions:**

- **Legal education** and **medical education** are excluded from the Bill's purview and will continue to be regulated under their respective Acts.

**Viksit Bharat Shiksha Adhishthan (The Commission)**

The Bill establishes the **Viksit Bharat Shiksha Adhishthan** as the **apex regulatory authority** for higher education.

**Councils under the Commission**

The Commission will function through **three specialised Councils**:

1. **Regulatory Council** – Common regulator for higher education institutions (HEIs)

2. **Accreditation Council** – Oversight of accreditation systems

3. **Standards Council** – निर्धारण of academic standards

## Functions of the Commission

- Provide **strategic direction** for higher education and research

- Prepare a **roadmap for transforming HEIs** into large, multidisciplinary education and research institutions

- Suggest **schemes for quality improvement**

- Ensure **coordination among Councils**

- Provide **financial support** for the functioning of Councils

## Important Change:
Unlike the UGC, the Commission and its Councils will have **no powers to allocate grants** to universities and colleges.

### New chapter

The Viksit Bharat Shiksha Adhishthan Bill was introduced by Union Minister Dharmendra Pradhan in the Lok Sabha

- The Bill proposes the setting up of a higher education commission along with three councils

- It seeks to subsume the functions of the University Grants Commission, the All India Council for Technical Education, and the National Council for Teachers' Education

- The commission will be an apex umbrella body to provide direction for comprehensive and holistic growth of higher education and ensure coordination between the Councils, the Bill says

## Composition of the Councils

- Each Council will have:

  o **One President**

  o **Up to 14 members**

- **Eligibility:**

  o Presidents must be persons of eminence with **at least 10 years' experience equivalent to a Professor**.

- **Members include:**

  o Eminent experts

  o One nominee of the Union Department of Higher Education

  o Nominees from the other two Councils

  o **State government nominees** (on a rotational basis) in the Regulatory and Standards Councils

## Appointments

- Presidents and full-time members will be appointed by the **President of India**, based on recommendations of a **Search-cum-Selection Committee** comprising:

  o Two eminent experts

  o Secretary, Higher Education (Central Government)

- One eminent expert will chair the committee.

## Composition of the Commission

- **Chairperson** (honorary position, person of eminence)
- **12 Members**, including:
    - Presidents of the three Councils
    - Secretary, Higher Education (Central Government)
    - Five eminent experts
    - Two eminent academicians from State HEIs

Appointments will be made by the **President of India** on the recommendation of the Central Government.

## Terms and Conditions of Service

- Chairperson and Presidents of Councils: **3 years**, extendable up to **5 years**
- Other members: **3 years**, eligible for reappointment
- **Age limit:** 70 years (not applicable to Chairperson)
- State nominees: **1 year tenure**
- Salaries, allowances, and service conditions to be prescribed by the **Central Government**

## Penalties and Regulatory Powers

The **Regulatory Council** may impose penalties on HEIs for violations:

- Monetary penalty: **₹10 lakh to ₹70 lakh**
- Additional actions (recommendatory):
    - Removal of responsible persons
    - Revision of autonomy level
    - Withholding of grants
    - Modification of degree-awarding powers
    - Revocation of affiliation
    - Closure of HEI

## Serious Offence:

- Establishing a university without prior approval: **minimum penalty of ₹2 crore**

An **adjudicatory mechanism** will be set up as prescribed by the Central Government.

## Appeals Mechanism

- Appeals against decisions of the **Commission or Councils** will lie with the **Central Government**.

## Conclusion

The **Viksit Bharat Shiksha Adhishthan Bill, 2025** represents a **structural reform of higher**

**education governance**, aiming to replace fragmented regulation with a unified, standards-driven framework. While it promises **simplicity, coherence, and quality enhancement**, concerns may arise regarding **centralisation of power, absence of funding authority, and appellate control by the Central Government**. Its effectiveness will ultimately depend on transparent implementation and cooperative federalism in education governance.