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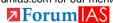# Mains Marathon

4th Week July, 2025

HISTORY
ECONOMICS
POLITY
SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT

INDEX

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CBSE's two-tiered math evaluation aims to reduce exam fear and broaden subject appeal. Evaluate its potential to enhance educational equity, foster deeper learning, and improve human capital development in India.

Introduction
CBSE's two-tiered mathematics evaluation seeks to democratize STEM learning by aligning academic expectations with student aspirations. It has the potential to bridge learning gaps, reduce stress, and nurture inclusive human capital.

Rationale Behind the Two-Tier System

1.   India's rigid board examination structure has long been a source of **academic anxiety**, particularly in subjects like mathematics.

2.   The **CBSE's proposal to introduce Basic and Advanced levels** of mathematics at the senior secondary stage (Class XI-XII) from **2026-27** is a progressive step towards making learning more inclusive and flexible.

3.   Currently, students can choose between **Standard Mathematics** and **Applied Mathematics** in Class XI. However, both tracks are content-heavy and largely similar in difficulty.

4.   The two-tier model proposes differentiated learning aligned with **students' academic and career goals**, allowing deeper learning for some, and foundational understanding for others.

Enhancing Educational Equity

1.   The Indian school system is **diverse in learner backgrounds**—ranging from elite private schools to under-resourced government institutions.

2.   A uniform curriculum often disadvantages those with **limited access to quality teaching** or private coaching. As per **ASER 2023**, only 43.3% of rural Class VIII students could do simple division.

   3.   **Two-tier evaluation** can level the playing field by offering **Basic Math** for students from marginalized or non-STEM aspirant backgrounds. Students from **humanities, arts, or sports** streams can now engage with mathematics without undue pressure or stigma.

4.   This approach mirrors the **International Baccalaureate (IB)** model, followed in over 150 countries, where students choose subjects at **Higher Level (HL)** or **Standard Level (SL)** based on interest and capacity. In India, over **200 IB schools** already practice this model, fostering differentiated learning.

Reducing Exam Stress and Dependency on Coaching

1.   Mathematics is among the **most feared subjects**, often associated with rote learning and excessive tuition.

2.   A **two-level system** can: **Reduce psychological burden** by aligning assessments with learners' aptitudes. **Wean students off coaching culture**, as curriculum alignment with abilities will reduce artificial competition.

3.   A **NCERT survey (2022)** found that nearly **60% of students** in Classes IX–XII depend on private coaching. The two-tier system could curb this reliance by creating a more **student-centric curriculum**.

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Encouraging Deeper Learning and Skill Development

1.   Advanced-level mathematics will cater to students aiming for **engineering, data science, economics**, or **mathematical sciences**, encouraging **analytical reasoning and problem-solving**.

2.   Simultaneously, **Basic Math** can focus on **numeracy, data literacy, and real-world applications**, essential for all in a digital economy.

3.   Such **curriculum differentiation**, if well-designed by **NCERT**, can help students build **21st-century skills**—a goal aligned with the **National Education Policy (NEP) 2020**, which advocates for **flexible curricular structures** and **reduced high-stakes testing**.

Challenges and Mitigation Strategies: While the policy is progressive, execution poses certain challenges:

1. **Stigmatization of Basic Math** students must be avoided through teacher sensitization and equal institutional value.
2. Curriculum designers must ensure **mobility** between levels, allowing students to **upgrade** based on interest or aptitude.
3. **Teacher training and resource allocation** are vital to avoid creating **hierarchies between levels**.

Conclusion

CBSE's two-tier math evaluation promotes flexibility and inclusivity, aligning learning with aspirations. If implemented equitably, it can revolutionize STEM education and build stronger, more diverse human capital for India's future.

Hazardous manual desludging deaths expose a deleterious business model. Critically examine the governance failures, governance blindness and policy reforms crucial for complete mechanization and ensuring dignity in sanitation work.

Introduction
Manual desludging continues to kill sanitation workers in India despite laws, court rulings, and schemes. These deaths expose systemic governance failures and the urgent need for mechanized, dignified sanitation work.

The Grim Reality of Sanitation Work

1.   According to data tabled in Parliament (2024), **150 deaths** occurred during hazardous manual desludging in **2022–2023**. Of 54 cases audited, **38 workers were privately hired**, and only five were on a **government payroll**.

2.   The rest were **public sector workers "loaned"** to private entities, revealing a lethal outsourcing model that dilutes accountability.

3.   Despite the **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013**, **Swachh Bharat Mission (SBM)** guidelines, and the **NAMASTE Scheme (2023)**,

4.   Manual cleaning persistence is a violation not just of statutory law but of **Articles 14, 17 and 21** of the Constitution, which guarantee **equality, dignity, and protection from untouchability**.

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Governance Failures and Policy Gaps

1. **Lack of Mechanization and Investment:** Out of **57,758 workers** in hazardous sanitation, only **16,791 received PPE kits** and fewer than **14,000 had health cards** (MoSPJ, 2024). Only ₹14 crore has been released under **NAMASTE**, insufficient to mechanize sewer systems even in a single metro.

2. **Blurred Lines of Responsibility:** Local contractors and public-private arrangements **obscure employer liability**. In the event of death, police often file cases against **junior supervisors** or label incidents as "accidents". As the **Supreme Court (2014)** ruled in *Safai Karamchari Andolan v. Union of India*, all manual scavenging deaths must be **criminally prosecuted**, and compensation must be **automatically granted**, yet implementation is weak.

3. **Data Blindness in Rural Areas:** There is **little to no profiling** of sanitation workers in rural India despite the increasing usage of **septic tanks** in villages post SBM-Gramin Phase II. **Women workers**, especially those engaged in dry latrine cleaning or sweeping, receive **virtually no policy attention**.

The Deleterious Business Model

1. The practice of **inviting manual labour bids in government tenders**—despite the availability of robotic and mechanized technologies—highlights **structural resistance to reform**.

2. This not only **endangers lives** but also **institutionalizes caste-based occupational segregation**, with **two-thirds** of sanitation workers identified as **Dalits**, per government audits.

Reforms to Break the Vicious Cycle

1. **Enforce Mechanization as Law:** Mechanized cleaning must be **mandated**, not advised. Tender processes should **exclude manual labour bids** and mandate **capital subsidies** for robotic alternatives.

2. **Criminal Liability for Principal Employers:** Local bodies must **enforce Supreme Court directions** by cancelling offending contracts and imposing **monetary and penal liabilities** on top-level contractors and officials.

3. **Rehabilitation with Dignity:** Rehabilitation must go beyond one-time compensation to include: **Housing**, **education scholarships**, **guaranteed job contracts**. Loans linked to **machine ownership** and **licensing of sanitation work** to prevent exploitation.

4. **Extend NAMASTE to Rural India: Swachh Bharat Gramin** should include **desludging under budgetary planning**, and **gram panchayats** should be covered under **NAMASTE profiling** for sanitation workers.

5. **Best Practice Models: Odisha** has provided PPE and mechanized access to septic cleaning. **Tamil Nadu** piloted **sewer robots** that cleaned over **5,000 manholes in Chennai**. **Pune's SWaCH model** empowers waste pickers through **cooperatives**, showing how inclusive models can work.

Conclusion

To prevent more avoidable deaths, sanitation must be recognised as skilled, dignified labour. Complete mechanization, strict accountability, and inclusive rehabilitation are non-negotiable for a just and humane sanitation ecosystem.

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Startup20 aims to harmonize the global ecosystem while retaining national diversity. Evaluate India's role in fostering international innovation cooperation and its implications for a balanced, inclusive global economic order.

Introduction

Startup20, launched under India's G20 presidency, has institutionalized a global voice for startups. It marks a shift toward inclusive innovation diplomacy, harmonizing ecosystems while preserving national entrepreneurial diversity.

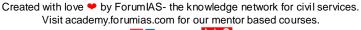**India's Strategic Role in Global Startup Diplomacy**

1.   India, home to the **third-largest startup ecosystem** globally with over **1.2 lakh startups** and **100+ unicorns**, leveraged its G20 presidency in 2023 to institutionalize **Startup20** — the first dedicated **Engagement Group** for startups and SMEs in the G20 framework.

2.   Prior to this, startup issues were subsumed under the **Business 20 (B20)**, which largely served the interests of multinational corporations. Startup20 brought structural parity by **elevating the voice of agile, early-stage ventures** alongside large firms in global economic governance.

3.   This reflects India's belief in the **ambidextrous model** — the synergy between the agility of startups and the scalability of corporates.

4.   As seen during COVID-19, nimble firms like **Bharat Biotech** and **Moderna** innovated vaccines quickly, while giants like **Pfizer** scaled their distribution — a model now institutionalized through Startup20.

Global Cooperation, Local Diversity: India's Balancing Act

1.   India ensured that Startup20 promotes **harmonization without homogenization**. It advocated for: **Global startup definitions and governance standards**, **Access to global capital, talent, and markets**, Support for **underrepresented groups (women, rural entrepreneurs, minorities)**, A focus on **SDG-aligned innovations** like climate tech and digital health.

2.   For example, India's **Digital Public Infrastructure (DPI)** like **Aadhaar, UPI, CoWIN**, and **ONDC** were showcased globally as templates for inclusive innovation — now studied by countries such as **Brazil, Indonesia, and Nigeria**.

Evolution of Startup20 and Global Innovation Diplomacy

1.   Following India's leadership, **Brazil's G20 presidency (2024)** refined the agenda with: **Tokenisation of assets for capital access**, **Blended finance for deep tech**, Emphasis on **renewable energy**, **circular economy**, and **social enterprises**.

2.   **South Africa's presidency (2025)** furthered this with task forces on: **Township and rural entrepreneurship**, **Trade and market access** and **Inclusion and sustainability**.

3.   India's model of combining **grassroots entrepreneurship (e.g., PM Mudra Yojana)** with **high-tech innovation (e.g., Startup India Mission)** is now influencing global policy. The rise of **Tier-2 and Tier-3 city startups** (e.g., Bhubaneswar, Jaipur) echoes the **Startup20 Johannesburg Agenda's** emphasis on rural inclusion.

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Addressing Gaps and Building Institutions

1.   Startup20 identified two systemic global gaps: lack of **policy implementation mechanisms** and absence of **institutional continuity** across presidencies.

2.   India proposed the formation of an **International Secretariat** for Startup20 — a startup-style response to a startup policy challenge. This aims to **bridge geopolitical divides** and ensure continuity for startup ecosystems across **Global North and Global South**.

Implications for a Balanced Global Economic Order

India's innovation diplomacy under Startup20 aligns with **SDG 8 (Decent Work and Economic Growth)** and **SDG 9 (Industry, Innovation, Infrastructure)**.

It promotes:

- **Multipolar economic architecture** through cooperation, not competition,
- Shared prosperity by addressing **inequalities in innovation access**,
- A template where **sovereignty and collaboration** co-exist — respecting national uniqueness while driving global progress.

Conclusion
India's leadership in Startup20 has institutionalized startup diplomacy at the highest global level. It exemplifies innovation multilateralism, enabling inclusive growth through cooperation, diversity, and sustainable entrepreneurship across nations.

Robotics and Small Language Models offer potential to bridge the digital divide in tribal India. Examine how their use in native language instruction can foster inclusive development and empower marginalized communities.

Introduction
 India's tribal communities face multilayered marginalisation. Leveraging robotics and small language models (SLMs) in native-language instruction can catalyse inclusive development by transforming digital access into empowerment and opportunity.

Understanding the Digital Divide in Tribal India

1.   India's tribal population, comprising over **10.4 crore people (Census 2011)** or **8.6% of the population**, predominantly lives in remote and forested areas of **Chhattisgarh, Jharkhand, Odisha, Madhya Pradesh, and the Northeast**.

2.   Despite constitutional safeguards (Fifth and Sixth Schedule), they face a **three-fold digital divide**: **Infrastructure divide** (poor internet, electricity), **Access divide** (cost of digital tools), **Language and content divide** (dominance of English/Hindi in tech content).

Role of Robotics in Bridging the Divide

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1. While Artificial Intelligence and Cloud computing dominate tech discourse, **Robotics offers a tactile, experiential learning model** — a vital tool for "learning by doing".

   2. Robotics education involves direct interaction with devices, encouraging **STEM engagement** and **hands-on creativity**.
   3. Demonstrations in tribal schools can **demystify complex technologies** and generate interest in engineering and innovation.
   4. Projects like **Atal Tinkering Labs (ATLs)** under the **Atal Innovation Mission** have shown promise in rural areas. Extending these to tribal belts with context-specific modules can amplify impact.
   5. **Example**: In Odisha's tribal-dominated districts, **robotic education pilots** supported by state IT departments and NGOs have improved school attendance and sparked youth interest in tech careers.

Power of Small Language Models (SLMs) in Native-Language Instruction

1. SLMs are compact AI models trained in specific **regional or tribal languages**, capable of delivering **technology-based instruction** in a mother-tongue environment.

   2. Helps overcome **language barriers** that limit tribal participation in mainstream education.
   3. Enables **digitally mediated instruction** even in low-resource settings.
   4. Encourages **intergenerational learning** by connecting youth and elders through native-language digital platforms.

5. **Example**: Initiatives like **AI4Bharat** at IIT Madras have developed open-source AI models in **20+ Indian languages**, paving the way for tribal language inclusion. **Gond, Santhali, Bhili**, and **Khasi** dialects can be incorporated into local SLMs to enable **contextual and culturally relevant learning**.

Institutional Support and Outreach Models

   1. **Public-Private Partnerships (PPP)** are essential to scale implementation. State governments can integrate robotics into **K-12 tribal school curricula**. Corporates under **CSR initiatives** can fund labs, equipment, and mentorship.
   2. **Community outreach programmes** by non-profits (e.g., Agastya Foundation, Pratham) can facilitate **teacher training and local mobilisation**.
   3. SLMs can be coupled with **digital libraries**, **AI-powered classrooms**, and **offline-first platforms** like **DigiBharat** for regions with low connectivity.

Long-Term Impact and Human Capital Development

Deploying robotics and SLMs in tribal areas can lead to:

   1. Enhanced **digital literacy and vocational skills**, bridging the digital skills gap.
   2. **Creation of a tech-savvy tribal workforce**, contributing to India's vision of a **$1 trillion digital economy**.
   3. **Reduction in urban migration** by creating **local tech-based employment** and entrepreneurship opportunities.
   4. Promotion of **inclusive innovation**, fulfilling the **SDG-4 (Quality Education)** and **SDG-10 (Reduced Inequality)** goals.

Conclusion

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Robotics and Small Language Models, delivered in tribal mother tongues, can democratise technology, foster grassroots innovation, and ensure that India's tribal communities share equitably in the country's digital future.

Himalayan Glacial Lake Outburst Floods pose a severe threat. Examine India's preparedness and the National Disaster Management Authority's strategies in mitigating GLOF risks for regional resilience and disaster governance.

Introduction

Glacial Lake Outburst Floods (GLOFs) are emerging as high-impact climate-induced disasters in the Indian Himalayas. India's preparedness, spearheaded by the NDMA, is crucial for ensuring regional resilience and governance.

GLOFs: An Emerging Himalayan Hazard

1. Glacial Lake Outburst Floods (GLOFs) occur when moraine or ice dams containing glacial lakes breach, unleashing sudden, destructive torrents. Triggered by earthquakes, ice avalanches, or climate-induced glacial melt, GLOFs threaten Himalayan states across India, Nepal, Bhutan, and Tibet.

   2. **India has 7,500+ glacial lakes**, with most above 4,500m elevation.
   3. Two major types in the Indian Himalayan Region (IHR): **Supraglacial lakes**: Formed on glacier surfaces and **Moraine-dammed lakes**: Formed at glacial snouts, held by loose debris—highly vulnerable.

India's GLOF Risk Profile

India has witnessed several destructive GLOFs:

1. **Kedarnath disaster (2013)**: Chorabari lake breach, combined with cloudburst and landslides, killed 5,700+ people.
2. **South Lhonak GLOF, Sikkim (2023)**: Destroyed the ₹16,000 crore Chungthang hydropower plant, severely affecting Teesta river dynamics.
3. Over 28,000 glacial lakes exist across 11 Himalayan basins (NRSC, ISRO).
4. Climate change exacerbates risk. **2023 and 2024 were the hottest years on record**, accelerating glacial melt and moraine instability. Poor accessibility and lack of monitoring amplify the hazard.

India's Preparedness and NDMA-Led Mitigation Strategy

The **National Disaster Management Authority (NDMA)** has taken the lead in transitioning from post-disaster response to risk mitigation:

a) National GLOF Risk Mitigation Programme: Launched with **$20 million investment**, covering **195 glacial lakes**, prioritised under four risk categories. **Five-pronged strategy**:

1. **Hazard assessment** – Bathymetry, slope stability, ice-core surveys using UAVs and ERT.
2. **Monitoring** – Installation of **Automated Weather and Water Stations (AWWS)** and early warning systems.
3. **Mitigation** – Risk reduction via water drawdown and retention structures.
4. **Community engagement** – Involving locals for credibility and sustainability.

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5. **Technology adoption** – Promoting **SAR interferometry** for high-resolution remote sensing.

b) Scientific Expeditions (2024): States like J&K, Himachal Pradesh, Sikkim, Arunachal Pradesh led surveys to 40 high-risk lakes. **ITBP** deployed as manual early warning relay systems in high-altitude, inaccessible zones. Local traditions respected—highlighting the need for **community inclusion** in governance.

Challenges in GLOF Governance

1. **Lack of transboundary coordination**: Nepal's July 2025 GLOF highlighted absence of early warnings from China. Regional cooperation under the **International Centre for Integrated Mountain Development (ICIMOD)** is needed.
2. **Monitoring gaps**: Limited weather stations; remote sensing is retrospective.
3. **Data voids** in rural cryosphere management.
4. **Funding inadequacy**: ₹20 crore insufficient for scale of threats across IHR.
5. **Private sector and innovation**: India lacks a strong ecosystem of cryosphere-focused tech providers and risk management startups.

Way Forward for Regional Resilience

1. Expand NDMA's programme post **16th Finance Commission** (FY2027–31).
2. Mandate GLOF EWS in all Himalayan hydropower projects.
3. Integrate GLOF risk in **State Disaster Management Plans (SDMPs)**.
4. Strengthen **Indo-Nepal, Indo-Bhutan, and Indo-China data-sharing protocols**.
5. Boost R&D and PPP for Himalayan disaster tech.
6. Leverage **Digital India** to improve last-mile alert systems via SMS and community radio.

Conclusion

GLOFs are intensifying under climate change, threatening fragile Himalayan ecosystems. India's NDMA-led, science-backed approach must be scaled and regionalised to ensure long-term resilience, cooperation, and sustainable disaster governance.

ICJ's non-binding climate opinion nudges rich nations towards greater action. Evaluate its significance for global climate justice, international environmental law, and the principle of common but differentiated responsibilities.

Introduction

The International Court of Justice's advisory on climate obligations, though non-binding, marks a pivotal moment in reinforcing global climate justice, environmental accountability, and the foundational principle of common but differentiated responsibilities.

ICJ's Advisory Opinion: A Judicial Signal of Climate Responsibility

In July 2025, responding to a resolution from the UN General Assembly initiated by small island nations such as Vanuatu, the **International Court of Justice (ICJ)** issued an advisory opinion asserting that **states are obligated to prevent environmental harm from climate change** and must **make adequate contributions** to limit global warming to **1.5°C**. Though not legally enforceable, this opinion carries significant **moral, diplomatic, and jurisprudential weight**.

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Implications for Global Climate Justice

1. **Empowering Vulnerable Nations**: Small Island Developing States (SIDS), facing existential threats from sea-level rise, sought the ICJ's help to shift the narrative from voluntary pledges to legal duties. The advisory affirms **developed nations' moral obligation** to act, empowering poorer countries to seek **compensation for climate-induced losses**.
2. **Litigation Leverage**: The ICJ opinion may open avenues for **climate litigation** in both national and international courts. Examples include cases like *Milieudefensie v. Shell* in the Netherlands, where Shell was ordered to reduce emissions by 45% by 2030.
3. **Moral Pressure on Rich Nations**: The advisory, coming at a time when **many developed countries have missed their $100 billion climate finance target**, reinforces public pressure for tangible action. The **U.S. withdrawal** from the Paris Agreement (2017, and again in 2024) without consequence highlights the need for stronger international accountability mechanisms.

Advancing International Environmental Law

1. **Filling Legal Gaps**: While the **Paris Agreement** is legally binding in procedural terms (e.g., submitting NDCs), it lacks enforcement for non-compliance. The ICJ's declaration that **GHG emissions constitute transboundary harm** invokes customary international law, reinforcing **states' duty of care and no-harm principles** (as per Trail Smelter Arbitration and Stockholm Declaration, 1972).
2. **Precedent for Future Treaties**: The advisory could influence the design of future climate agreements, embedding **legal accountability** for both mitigation and adaptation. It may also affect **corporate responsibility**, especially in transnational litigation concerning fossil fuel companies.
3. **Environmental Jurisprudence**: It adds a judicial voice to the emerging field of **climate lawfare**, strengthening legal arguments under **rights-based frameworks**, such as the **Right to a Clean and Healthy Environment**, now recognized by the UN General Assembly (2022).

Upholding the Principle of Common but Differentiated Responsibilities (CBDR)

1. **Core of Equity in Climate Action**: CBDR, first formalized in **Principle 7 of the Rio Declaration (1992)** and enshrined in the **UNFCCC (1992)** and **Paris Agreement (2015)**, recognizes that while all countries share climate responsibility, **developed nations bear historical accountability**.
2. **ICJ Reaffirmation**: The advisory reiterates the need for **differentiated contributions**, re-emphasizing that **climate justice must reflect historic emissions, economic capabilities, and developmental disparities**.
3. **Operationalizing CBDR**: This may encourage a re-evaluation of global climate finance, pushing developed nations to **scale up loss and damage contributions**, particularly through the **Loss and Damage Fund operationalized at COP28 (Dubai)**.

Challenges Ahead

1. **Non-binding Nature**: No enforcement mechanism deters immediate state action.
2. **Sovereignty Concerns**: Major emitters like China and the U.S. may resist external judicial influence on domestic policies.
3. **Need for Implementation Mechanism**: Without institutional follow-up, the advisory risks being symbolic.

Conclusion

The ICJ's climate opinion reinforces the global climate justice discourse and strengthens legal and moral

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accountability. It can catalyze reforms in environmental governance if integrated with meaningful international cooperation.

Five years into NEP, reforms face Centre-state tussles and institutional delays. Examine how these impediments impact equitable educational transformation and holistic human capital development in India.

Introduction

The National Education Policy (NEP) 2020 envisioned a radical shift in India's education system. However, Centre-state frictions and institutional inertia threaten its promise of inclusive, equitable, and transformative learning outcomes.
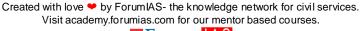
Vision of NEP 2020: A Paradigm Shift

1.   NEP 2020 aimed to overhaul India's education system by promoting flexibility, inclusivity, and multidisciplinary learning from early childhood to higher education.

2.   Key pillars included foundational literacy, universal early childhood care, mother tongue instruction, credit-based higher education, and teacher training — all aimed at unlocking India's human capital potential and achieving SDG-4 (Quality Education).

What Has Worked

1. **Foundational Reform in Schooling**: The shift from 10+2 to the 5+3+3+4 model has been initiated. NCERT textbooks under the new **National Curriculum Framework for School Education (NCFSE)** have been introduced for classes 1–8.
2. **Early Childhood Education**: Initiatives like *Jaadui Pitara* and the ECCE curriculum show promise, with Delhi, Kerala, and Karnataka enforcing the minimum entry age of 6 for class 1.
3. **Digital Credit System**: The *Academic Bank of Credits (ABC)* and *National Credit Framework (NCrF)* enable multi-entry-exit options and foster lifelong learning.
4. **Global Engagements**: Institutions like IITs and IIMs establishing campuses abroad reflects India's growing educational soft power.

What's Lagging and Why

1.   Centre–State Tussles and Three-Language Formula: States like Tamil Nadu and West Bengal oppose it, citing cultural and linguistic imposition.

2.   **Four-Year UG Degree Resistance**: Tamil Nadu and Kerala oppose the new undergraduate framework, calling it central overreach. Karnataka scrapped it mid-course, and is drafting its own State Education Policy.

3.   **PM-SHRI Schools**: States refusing to adopt the NEP framework are denied **Samagra Shiksha** funds, leading to litigation in the Supreme Court (e.g., Tamil Nadu).

4.   *Impact*: These disputes undermine the policy's **federal spirit** (Article 246) and obstruct **equitable access** to progressive models, especially in backward regions.

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Institutional Delays

1. **Delayed Frameworks**: The **National Curriculum Framework for Teacher Education** is yet to be released, affecting the quality of teacher training and the rollout of ITEP.
2. **Holistic Report Cards**: Despite PARAKH's creation, few boards have implemented comprehensive evaluation mechanisms beyond marks.
3. **HECI Bill Pending**: The proposed **Higher Education Commission of India** remains stalled, delaying streamlined governance and quality assurance in higher education.

4. **Impact**: Fragmented policy execution weakens institutional capacity, affecting **education-to-employment pipelines** and long-term productivity gains.

Nutrition and Inclusion Deficit

1. **No Breakfast Scheme**: Despite NEP recommendations, the Finance Ministry rejected proposals to provide breakfast in schools — impacting **nutrition, learning outcomes**, and attendance, particularly in rural and tribal belts.
2. **Mother Tongue Instruction**: Though NEP promotes instruction in regional languages till class 5, implementation remains partial due to lack of content and teacher readiness.

3. **Impact**: These gaps disproportionately affect **marginalised communities**, widening the rural-urban and socio-economic learning divide.
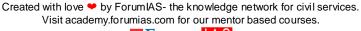
Consequences for Human Capital Development

1. **Stunted Learning Gains**: Surveys under NIPUN Bharat report only 64% language and 60% math proficiency by class 3 — far from NEP's universal foundational literacy target.
2. **Inequitable Access**: Credit frameworks and CUET remain urban-centric; digital divide and lack of institutional readiness marginalise SC/ST/OBC and rural learners.
3. **Brain Drain vs Brain Gain**: While India exports education through international campuses, domestic challenges in affordability, quality, and equity persist.

Way Forward

1. **Cooperative Federalism**: Create **NEP State Adaptation Cells** for contextual implementation while respecting linguistic and cultural diversity.
2. **Accelerate Teacher Education Reform**: Notify and implement the long-delayed **teacher curriculum framework** to ensure pedagogical quality.
3. **Bridge Nutritional Gaps**: Integrate NEP with **Poshan 2.0** to provide breakfast, especially in tribal and aspirational districts.
4. **Monitor with Data**: Deploy **Unified District Information System for Education (UDISE+)** for real-time tracking of NEP outcomes.

Conclusion
Without consensus and systemic capacity, NEP's transformative goals risk fragmentation. Bridging Centre-state divides and institutional inertia is crucial to building an equitable and skilled India through inclusive education reform.

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India's multidimensional poverty fight leverages inclusive programs to target vulnerability hotspots. Examine how such initiatives enhance governance effectiveness and promote equitable development, fostering social justice across states.

Introduction

India's fight against poverty is undergoing a paradigm shift—from income-based metrics to a multidimensional approach. Targeted, inclusive programmes like Samaveshi Aajeevika are enabling states to bridge deprivation gaps and ensure social justice.

Multidimensional Poverty: Redefining the Paradigm

1. Poverty in India is no longer viewed through the narrow lens of income deprivation alone. The **Multidimensional Poverty Index (MPI)** developed by NITI Aayog and aligned with global metrics, considers deprivations across **health, education, and standard of living** — comprising 12 indicators such as nutrition, housing, clean cooking fuel, education, and sanitation. A person is poor if deprived in at least one-third of these indicators.

2. While India lifted **270 million people out of extreme poverty between 2011 and 2023** (World Bank, 2024), **around 200 million remain multidimensionally poor**, often experiencing clusters of overlapping deprivations, such as lack of nutrition, sanitation, and healthcare.

3. Addressing such "**vulnerability hotspots**" calls for coordinated, inclusive, and multi-sectoral interventions.
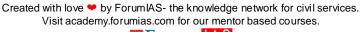
Graduation Approach: A Global Blueprint

1. The **Graduation Approach**, pioneered by Bangladesh's BRAC and backed by evidence from J-PAL (Abhijit Banerjee & Esther Duflo), offers an integrated package: Asset transfers (e.g., livestock or trade items), temporary income support, financial literacy and skills training and mentorship

2. Implemented in **43 countries**, it has shown success in enhancing **food security, financial resilience, housing conditions, and children's education**. For example: **In Afghanistan**, diarrhoea among under-five children declined by 8 percentage points, **In Yemen**, families invested in housing upgrades, **In India**, 99% of beneficiaries reported improved food security and increased asset ownership.

India's Response: Samaveshi Aajeevika Initiative

1. Launched in 2024 by the **Ministry of Rural Development**, the **Samaveshi Aajeevika Initiative** pilots the Graduation Approach across **11 states** in collaboration with BRAC, The Nudge Institute, and J-PAL South Asia. Its focus is on **rural women entrepreneurship**, social protection, and financial independence.

2. The initiative leverages **MPI data to identify vulnerability hotspots** and targets them through bundled services, enhancing last-mile governance and integrated service delivery.

Enhancing Governance Effectiveness and Equity

1. Evidence-Based Targeting: MPI-based targeting allows **precision governance**, directing interventions where overlapping deprivations are severe. For instance, 34 million Indians lack access to nutrition, sanitation, clean fuel, and housing—deprivations often concentrated in tribal and aspirational districts.

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2. Convergence of Schemes: Samaveshi Aajeevika aligns ministries' efforts (e.g., **Poshan Abhiyan**, **PMAY**, **Jal Jeevan Mission**) into a single implementation window, reducing fragmentation and bureaucratic overlap.

3. Decentralised and Gender-Inclusive Model: By empowering rural women, the initiative fosters **gender-equitable growth**. It aligns with the **Deendayal Antyodaya Yojana-NRLM**, strengthening self-help groups and enabling bottom-up entrepreneurship.

4. Cooperative Federalism: States are empowered to adapt the programme to local needs. Kerala and Tamil Nadu, which already have strong welfare infrastructures, can integrate such models with **state poverty action plans** for greater impact.

Challenges and the Way Forward

1. **Sustained Funding**: Integrated interventions require long-term fiscal commitment from both Centre and states.
2. **Capacity Building**: Training local implementation agencies and SHGs is crucial for scaling.
3. **Robust Monitoring**: Expanding **real-time dashboards** and **geospatial poverty mapping** can ensure data-driven governance.
4. **Institutional Convergence**: Strengthening inter-ministerial coordination remains a key enabler for holistic impact.
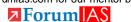
Conclusion

Targeted, inclusive models like Samaveshi Aajeevika deepen the fight against poverty by transforming governance, empowering citizens, and operationalising social justice—ensuring no one is left behind in India's development journey.

SC staying well-reasoned acquittals based on state assertions raises concerns. Critically examine how this impacts judicial independence, the rule of law, and fair trial principles in India's criminal justice system.

Introduction

The Supreme Court's stay on the Bombay High Court's acquittal in the 2006 Mumbai blasts case, solely based on state assertions, raises vital concerns regarding judicial autonomy, due process, and legal precedent.

1. Undermining Judicial Independence and Hierarchical Authority: High Courts, under Article 226/227 and as appellate courts under CrPC, exercise autonomy in fact-finding and legal reasoning. Staying such a detailed 671-page acquittal verdict — without hearing both sides or citing legal flaws — undermines their authority and constitutional status. **Example**: Supreme Court stayed precedential effect of Bombay HC acquittals, July 2025.

2. Breach of Natural Justice and Procedural Fairness: The SC did not follow basic principles like audi alteram partem (hear the other side), nor did it apply standard stay criteria — prima facie case, irreparable harm, or balance of convenience. The absence of reasoned order violates natural justice. **Example**: No counter-hearing before SC stay on acquittal judgment.

3. Erosion of Rule of Law through Executive Deference: The judiciary is expected to check arbitrary state action. Accepting Solicitor General's assertions without scrutiny or legal counterweight compromises

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separation of powers and may enable executive overreach. **Example**: ADM Jabalpur (1976) as a cautionary precedent of judicial deference.

4. Weakening Due Process and Fair Trial Norms in Terror Cases: The Bombay HC exposed torture-based confessions, misuse of MCOCA, and procedural violations. Setting aside such findings risks reinforcing flawed prosecutions and sets a dangerous trend where terror charges override constitutional safeguards. **Example**: Confessions extracted after invoking MCOCA, held inadmissible by Bombay HC.

5. Precedential Vacuum Threatens Legal Certainty: The SC order prevented the HC judgment from becoming precedent. This stalls the development of criminal jurisprudence, especially regarding safeguards under UAPA, MCOCA, and custodial rights in high-stakes trials. **Example**: Judgment barred from use in other pending cases as legal precedent.

6. Demoralizing Constitutional Courts and Judicial Officers: When exhaustive legal reasoning gets summarily stayed, it deters judicial officers from exercising independence, especially in sensitive cases. It affects morale and may lead to risk-averse or populist judgments in the future. **Example**: HC termed conviction a "false appearance of justice" and warned against scapegoating.

7. Impact on Justice for Victims and Real Offender Prosecution: Wrongful prosecutions provide false closure while real perpetrators remain free. The Bombay HC highlighted how a flawed investigation misled justice and misused anti-terror laws, risking further harm to society. **Example**: Masterminds of 2006 blasts remain unidentified even after 19 years.

8. Public Trust in Judiciary and Constitutional Safeguards Eroded: High-profile acquittals, if suspended arbitrarily, create public perception of state-influenced judicial processes. For minorities and marginalized groups overrepresented among undertrials (76% as per India Justice Report 2022), this undermines faith in impartial justice. **Example**: India Justice Report: 76% of undertrials are SC/ST/OBC and Muslims.
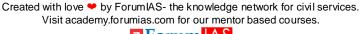
Conclusion

Staying reasoned acquittals based on executive claims weakens judicial credibility, due process, and legal safeguards. To uphold justice, courts must resist pressure and preserve rule-of-law foundations in criminal jurisprudence.

The 'West vs. Rest' narrative is challenged by Western soft power's enduring appeal. Critically analyze its implications for global ideological competition and the evolving dynamics of international relations in a multipolar world.

Introduction

The enduring allure of Western soft power questions simplistic "West vs. Rest" binaries, highlighting the deeper ideological, institutional, and normative continuities that shape evolving international relations in a rapidly multipolar world.

1. Soft Power as a Continuum, Not a Contender: Joseph Nye's concept of soft power — the ability to attract through values, culture, and institutions — remains the West's strongest tool in the global arena. Despite economic stagnation and political turbulence in the West, global migration, education flows, and cultural

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consumption remain tilted westward. **Example**: Over 1.1 million international students study in the US (2023), including 250,000 from India.

2. Multipolarity Doesn't Mean Post-Western: Although power is diffusing globally — with China, India, ASEAN, and others asserting themselves — it has not erased the West's influence. The post-Cold War Liberal International Order (LIO), while contested, still provides the institutional grammar of global governance — from the UN to the IMF. **Example**: BRICS countries use SWIFT, WTO, and UN frameworks despite criticising them.

3. The Myth of a Unified "Rest": The so-called "Rest" is fragmented — politically, ideologically, and civilisationally. The promise of a unified Global South often unravels due to competing nationalisms, border disputes, and differing visions of development and governance. **Example**: China–India rivalry, intra-Arab splits, and ASEAN's non-alignment over Taiwan or Ukraine.

4. Western Ideals Still Define Global Legitimacy: Enlightenment values — secularism, science, individual liberty — remain aspirational benchmarks even among authoritarian regimes. The continuing demand for migration, education, and even asylum in the West underlines this normative pull. **Example**: Global South's elites consistently prefer Western education, with 38% of global scientific research still originating from the US alone (Nature Index 2023).

5. Authoritarianism and Internal Contradictions in the East: The East's rise is constrained by democratic deficits, curbs on dissent, and religious/ethnic majoritarianism. This undermines its ability to present a credible ideological alternative to the West's liberal framework. **Example**: China's social credit system and internet censorship versus global digital freedom benchmarks.

6. The Multiplex World: Beyond Binary Narratives: As Amitav Acharya argues, the future may lie not in replacing Western dominance but in creating a multiplex order — a negotiated, pluralistic system with multiple civilizational inputs and shared rule-making. However, this requires humility, institutional innovation, and deeper commitment to universal norms. **Example**: India's G20 presidency promoted "One Earth, One Family, One Future" as an inclusive civilizational vision.

7. Western Crisis, Not Collapse: While Western democracies face polarization, economic inequality, and challenges to global leadership, they remain resilient due to internal correctives — media freedom, judicial autonomy, and electoral competition — which many Eastern states lack. **Example**: US Supreme Court checks on executive power vs. China's opaque CCP-driven decision-making.

8. The Future: Coexistence and Cross-Pollination, Not Conquest: Rather than replacing one hegemon with another, the emerging global order will likely be shaped by hybrid models — Western institutional norms combined with Eastern philosophies and practices of governance and cooperation. **Example**: Digital Public Infrastructure models like India's UPI and Aadhaar gaining global traction within Western regulatory frameworks.

Conclusion

The West's soft power endurance amidst multipolarity suggests global ideological competition is not zero-sum. A more plural, negotiated order may emerge — blending Western frameworks with non-Western innovation and legitimacy.

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To become a developed nation by 2047, India needs new economic ideas beyond the IT sector. Examine the potential new drivers of growth and policies required for inclusive and sustainable economic transformation.

Introduction

India's aspiration to become a developed nation by 2047 necessitates transcending IT-driven growth. This demands identifying new growth drivers aligned with global shifts and crafting a robust, inclusive, and sustainable policy ecosystem.

Why IT-Led Growth Has Plateaued

1. The IT sector created a robust middle class and powered exports (~$250 billion in 2023).
2. However, automation, AI, and global protectionism are reducing low-end service jobs.
3. According to NASSCOM, India may lose up to 30% of IT jobs due to AI by 2030.
4. Heavy regional and class concentration limited the sector's trickle-down effects.

Emerging Global Context: New Constraints and Opportunities

1. **Geoeconomic fragmentation**: Weaponisation of trade (e.g., rare earth bans by China, US-China decoupling) calls for diversified global supply chains.
2. **De-globalisation**: Trade-to-GDP ratio has stagnated globally; India must look inward to grow domestic capabilities.
3. **Technological transitions**: From green hydrogen to semiconductors, new sectors are emerging.
4. **Climate transition**: Green industrial policy can attract capital and create jobs.

Potential New Drivers of Growth

1. **Manufacturing-Led Industrialisation:** PLI schemes aim to build capabilities in electronics, pharma, solar, autos. But they must broaden to MSMEs and labour-intensive sectors. **Example**: Vietnam's textile sector thrived due to global integration + local capability.

2. **Green Economy and Energy Transition:** India targets 500 GW non-fossil capacity by 2030. Solar, wind, green hydrogen, EVs can create jobs, reduce imports, and meet climate targets. **IRENA** estimates India can generate 3 million new green jobs by 2030.

3. **Digital Public Infrastructure (DPI):** UPI, Aadhaar, and ONDC offer scalable, inclusive platforms for micro-entrepreneurship, rural commerce, and governance. India Stack model is now being exported to other developing nations.

4. **Agritech and Rural Transformation:** Boosting productivity, reducing post-harvest loss, and improving market access via FPOs, digitization, and irrigation. **Example**: PM-KISAN + eNAM + drone tech = rural digital revolution. Agri exports (e.g., Basmati, spices) can be enhanced with better logistics and branding.

5. **Tourism and Cultural Economy:** With G20 hosting and soft power (Yoga, Ayurveda), India can scale tourism and creative sectors. Tourism adds 6.8% to GDP but remains underdeveloped.

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6.   **Care Economy and Services:** India's demographic dividend includes a growing elderly population, needing health, caregiving, and social services. Expanding education and healthcare infrastructure can create 20–25 million jobs by 2030 (NITI Aayog estimates).

Policy Priorities for Inclusive and Sustainable Transformation

1. **Human Capital Investment**: NEP 2020, skilling in AI, green tech, and vocational education.
2. **Labor and Regulatory Reforms**: Ease of doing business, formalization of workforce, and labor code rationalization.
3. **Decentralization and State-Level Growth Models**: States must be empowered as growth labs.
4. **Urbanization and Infrastructure**: Smart cities, logistics corridors, mass transit, and housing need long-term investment.
5. **Innovation Ecosystem**: Strengthening startups, R&D (currently <1% of GDP), and patent pipelines.

Conclusion

Becoming a developed nation by 2047 demands bold new economic thinking, strategic investments, and an elite development compact focused on inclusive growth beyond IT — rooted in sustainability, innovation, and equity.

The NASA-ISRO NISAR satellite is the most powerful Earth observation satellite. Examine its potential applications in environmental monitoring, disaster management, and scientific research for India's sustainable development.

Introduction

The NISAR satellite, a joint mission by NASA and ISRO, heralds a new era in Earth observation. With dual-frequency SARs, it promises transformative applications in environment, disaster response, and research.

What is NISAR and Why it Matters

1. **NISAR** stands for **NASA-ISRO Synthetic Aperture Radar**. It is the first satellite globally to carry **dual-frequency SARs**: L-band (NASA) and S-band (ISRO).
2. Once deployed, it will become **the most powerful Earth observation satellite**, generating **80 TB of data daily**, three times more than any existing system.
3. It is designed for **real-time, all-weather, day-night monitoring** using microwaves, enabling superior earth imaging capabilities.

Applications in Environmental Monitoring

1.   Forest Cover and Biomass Estimation: The **L-band radar** penetrates dense vegetation, enabling accurate mapping of forest ground, tree trunks, and biomass. Useful for **carbon stock estimation** crucial to India's **Nationally Determined Contributions (NDCs)** under the **Paris Agreement**. Can assist in tracking progress under the **Green India Mission** and **REDD+** strategies for carbon credit markets.

2.   Monitoring Glacier Retreat and Ice Mass: High-resolution temporal imagery helps assess **Himalayan glacier retreat**, essential for understanding **GLOFs (Glacial Lake Outburst Floods)**. Can

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complement the efforts of **ISRO's National Remote Sensing Centre (NRSC)** and **National Centre for Polar and Ocean Research (NCPOR)**.

3.   Soil Moisture and Agricultural Productivity: S-band SAR provides imagery on soil moisture, crop cycles, and land use. It can aid **crop yield prediction**, irrigation planning, and insurance schemes like **PM-Fasal Bima Yojana (PMFBY)**. Enhances precision farming and supports **AgriStack** initiatives under **Digital Agriculture**.

Role in Disaster Management

1.   Earthquake and Landslide Monitoring: NISAR can track **surface deformation**, predicting fault movements and assessing post-disaster damage. Especially critical for **Himalayan states**, earthquake-prone **Northeast**, and **Western Ghats**.

2.   Flood Mapping and Mitigation: With the ability to see through clouds, it enables real-time flood mapping during monsoons or cyclones. Will improve flood forecasting in partnership with **CWC**, **IMD**, and **NDMA**.

3.   Volcanic Activity Tracking: Surface heat and deformation data can pre-warn of volcanic eruptions. Though rare in India, it holds relevance in **Andaman & Nicobar Islands**.

Scientific Research and Climate Change

1.   Carbon Cycle and Global Warming Studies: Tracks land-use changes, deforestation, afforestation, and biomass changes contributing to **IPCC assessments**. Will feed into **National Carbon Accounting Systems** and India's Climate Action Plan.

2.   Coastal and Wetland Monitoring: SAR data helps monitor **mangroves, estuaries**, and **coastal erosion**. Will assist in **blue economy policies**, marine biodiversity conservation, and CRZ compliance.

3.   Urban Planning and Land Subsidence: Detects subsidence in megacities like **Delhi or Kolkata**, improving **urban risk planning** and infrastructure design. Supports **Smart Cities Mission** and **AMRUT 2.0** by enabling GIS-based planning.

Strategic and Technological Significance

1. First **joint ISRO-NASA mission**—marks India's emergence as a trusted global space partner.
2. Will strengthen India's **space diplomacy** and **Artemis Accords** participation.
3. Demonstrates indigenous radar tech capability (ISRO's S-band), advancing **Atmanirbhar Bharat** in space tech.

Conclusion

NISAR is more than a satellite—it's a catalyst for India's sustainable growth. By integrating cutting-edge science with policy imperatives, it promises resilient, informed responses to environmental and developmental challenges.

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