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South-South and Triangular Cooperation

This editorial is based on “[South-South and Triangular Cooperation is more than a diplomatic phrase](#)”, which was published in *The Hindu* on 30/09/2025. The article emphasises that South-South and Triangular Cooperation is an essential, cost-effective, and innovative development model, with India's leadership and partnerships showing how it can create a more equitable and sustainable global future beyond traditional aid frameworks.

S Tag: GS Paper - 2, Regional Groupings, Bilateral Groupings & Agreements, Groupings & Agreements Involving India and/or Affecting India's Interests.

In a rapidly shifting global order, traditional aid frameworks alone can no longer address the intertwined challenges of inequality, climate change, and fragile development financing. South-South and Triangular Cooperation has emerged as a powerful platform of solidarity, mutual learning, and innovation, offering cost-effective and context-specific solutions. Yet, despite its promise, gaps in financing, institutional capacity, and broad-based partnerships highlight the urgent need to strengthen this model for a more equitable and sustainable future.

What is South-South and Triangular Cooperation (SSTC)?

💡 **About:** It is a partnership among developing countries ([Global South](#)) based on solidarity and mutual benefit, involving the exchange of knowledge, skills, resources, technology, and expertise to promote development.

- ✦ It complements traditional North-South aid, adhering to principles of national sovereignty, equality, non-conditionality, and mutual accountability.

✦ **Triangular Cooperation (TrC):** A collaborative model where two or more developing countries partner, supported by a developed country or multilateral organisation.

- 📌 It combines the contextual experience of Southern partners with the financial and technical support of Northern/multilateral partners for effective project implementation.

💡 **Origin:** The 1978 Buenos Aires Plan of Action (BAPA) formally defined South-South Cooperation, highlighting priority areas and support for least developed, landlocked, and small island developing countries.

- ✦ Over time, SSTC evolved to include Triangular Cooperation, where developed countries or multilateral organisations provide financial and technical support alongside Southern partners.
- ✦ The United Nations has adopted September 12 as the International Day for South-South and Triangular Cooperation (SSTC).

💡 **Guiding Principles of South-South Cooperation:**

- ✦ **Solidarity-driven:** Rooted in cooperation among developing countries to enhance national well-being and self-reliance.
- ✦ **Development-oriented:** Supports the attainment of internationally agreed development goals, including the 2030 Agenda for Sustainable Development.
- ✦ **South-led agenda:** Initiatives are determined by countries of the South themselves, ensuring autonomy in priorities.
- ✦ **Core Principles:** Guided by respect for national sovereignty, national ownership and independence, equality among partners, non-conditionality (assistance without imposing conditions), non-interference in domestic affairs, and mutual benefit through win-win cooperation.

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How is SSTC Transforming Global Development Cooperation?

- 💡 **Empowerment through Solidarity and Equality:** SSTC is based on principles of **mutual respect, solidarity, equality, and shared learning** among developing countries.
 - ✦ Unlike traditional aid models, it respects **national sovereignty** and **ownership** without conditionalities, fostering **genuine partnerships among equals**.
 - ✦ This approach builds **political and economic self-reliance** in the **Global South**, a key principle since the **1978 Buenos Aires Plan of Action**.
- 💡 **Driving Global Economic Growth:** Countries of the **Global South** have contributed to over **half of the recent global economic growth**.
 - ✦ **Intra-South trade** now accounts for more than **one-quarter of world trade**, and **foreign direct investment (FDI) outflows** from the South represent a **third of global flows**.
 - ✦ SSTC harnesses these dynamics for **shared development outcomes**.
- 💡 **Cost-effective, Scalable, and Context-specific Development Solutions:** SSTC offers **locally tailored solutions** to pressing challenges like **climate change, health, and digital finance**.
 - ✦ The cooperation enables replication of **cost-effective innovations** such as India's **Aadhaar digital ID system** and **UPI payments model** shared with other developing countries.

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- ✦ Such solutions are grounded in **local realities** and foster **sustainable development**.
- 💡 **Enhancing Institutional and Technical Capacities:** South-South partnerships strengthen **institutional capacities, technical knowledge, and resource mobilisation**.
 - ✦ For instance, the **India-UN Development Partnership Fund** has backed **75 projects in 56 countries**, advancing areas like **food security (rice fortification), supply chains in Nepal and Laos, and digital governance innovations**.
 - ✦ **Costa Rica, the Dominican Republic, and Germany** collaborate through a **triangular partnership** on **coral reef restoration**, combining **finance, technical expertise, and community practices** to boost **reef resilience and marine biodiversity** in the Caribbean region.
- 💡 **Complementing and Expanding Traditional North-South Cooperation:** SSTC is a **supplement, not a substitute**, for **North-South cooperation**.
 - ✦ **Triangular cooperation** involves **Southern partners** working with **developed countries or multilateral support**, leveraging **combined resources** for greater impact.
 - 📌 **India, France, and the UAE** have formed a **trilateral partnership** focusing on **solar and nuclear energy, climate change, biodiversity conservation, and defence cooperation** in the **Indian Ocean region**, leveraging **combined resources** for greater **regional impact**.
 - ✦ It enables **capacity building and innovation scaling** in a way that respects **Southern leadership and priorities**.
- 💡 **Mainstreaming SSTC within Global Development Agendas:** SSTC is increasingly **institutionalised** in **UN policies and development frameworks**, with over **60 resolutions and outcome documents** recognising its importance.
 - ✦ **United Nations entities** are integrating **SSTC strategies** globally to support **member states** in areas such as **health, climate action, social protection, and more**, reflecting rising **demand** from **developing countries**.

💡 **Fostering Regional Integration and South-South Networks:** SSTC promotes **regional integration and cooperation** among the **Global South** through enhanced **trade, technology exchange, and collective action**.

- ✦ It creates **collaborative networks** that amplify **shared knowledge and development solutions**, which is critical amid **geopolitical instability** and global challenges like the **COVID-19 pandemic**.

What Role does India play in Advancing South-South and Triangular Cooperation?

- 💡 **Leadership in Capacity Building and Knowledge Sharing:** India launched the **India-UN Global Capacity-Building Initiative** to share Indian best practices with other Global South nations.
 - ✦ It facilitates **skills training, knowledge exchanges, pilot projects, and institutional cooperation** to accelerate the **SDGs**.
 - ✦ Indian technical cooperation programs now support over **75 projects in 56 countries**, particularly in **least developed countries and small island states**.
- 💡 **Contributions through the India-UN Development Partnership Fund:** Established in **2017** with a contribution of **\$150 million**, the fund backs **demand-driven, transformational projects** across the Global South.
 - ✦ Thematic areas include **climate resilience, renewable energy, health, and gender equality**.
 - ✦ Funded projects span **Africa, the Caribbean, and Southeast Asia**, reflecting India's **financial and developmental commitment**.
- 💡 **Promotion of Digital Public Infrastructure for Equitable Development:** India leverages scalable **digital tools** like **Aadhaar and UPI** to support **digital finance** in partner countries.
 - ✦ Initiatives include **digital health platforms** in **Zambia and Lao PDR**, and **supply chain innovations** in **Nepal**, showcasing India's **technological leadership** in **inclusive development**.

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- ✦ Several **Global South** countries have adopted or piloted **UPI integrations**, including **Bhutan, Nepal, Sri Lanka, Mauritius, Maldives, and the UAE**, with ongoing expansions to **Qatar, Singapore, and Malaysia**.
- 💡 **Institutionalising and Strengthening Regional Networks:** India hosts **Voice of the Global South Summits**, reinforcing its role as a **voice for developing countries**.
 - ✦ During its **G20 presidency**, India secured the **African Union's permanent membership** in the G20, enhancing the **political and economic influence** of Africa and other southern countries.
- 💡 **Innovative Agricultural and Food Security Initiatives:** Through partnerships with **ICRISAT** and **DAKSHIN (Development and Knowledge Sharing Initiative)**, India promotes agricultural innovation and climate-smart farming.
 - ✦ Projects on **rice fortification, supply chain improvements, and sustainable dryland farming** demonstrate India's contribution to **food security and agricultural resilience** across the Global South.
 - ✦ For instance, in collaboration with **Germany**, **India** acts as the **knowledge provider** for **agriculture and climate resilience projects** in **Africa**.
- 💡 **Advocacy for Global South Priorities in Multilateral Forums:** India actively promotes initiatives such as the **UN Day for South-South and Triangular Cooperation (SSTC)**, emphasising **innovative collaborations, climate resilience, and socio-economic development**.
 - ✦ It advocates for **increased funding and inclusive governance**, proposing dedicated development funds with allocations exceeding **\$2.5 million for trade policy support**.
 - 📎 For instance, **India** was the **first country** to provide **written financial assurances** to the **International Monetary Fund (IMF)** to support **Sri Lanka's debt restructuring plan** in **January 2023**.

What are the Major Challenges Constraining the Effectiveness of SSTC?

- 💡 **Fragmentation and Lack of Coordination:** SSTC efforts often suffer from **fragmented initiatives** due to diverse **political systems, economic priorities, and historical contexts** among participating countries.
 - ✦ This fragmentation leads to a **lack of cohesive strategies, weak synergy among projects, and diluted impact** on **global development goals**.
 - ✦ **Shifts in national priorities or leadership changes** can disrupt ongoing SSTC projects or stall new proposals, affecting **long-term planning and implementation**.
 - 📎 For instance, the **Asia-Africa Growth Corridor (AAGC)** initiated by India and Japan was derailed **due to reduced political will following the change in government in Japan**.
- 💡 **Limited Institutional and Technical Capacity:** Many **developing countries** lack adequate **financial, technical, and institutional ability** to **design, implement, and sustain SSTC programs**.
 - ✦ **Capacity constraints** hamper effective **project execution and scalability**.
 - ✦ **Fiscal constraints**, combined with **geopolitical shifts**, create serious challenges for **coordinated and sustained collective action** across the **Global South**.
 - 📎 **India-Africa Forum Summit (IAFS)**, a platform for **India-Africa partnership**, has faced significant **scheduling delays**, notably **not being held since the third summit in 2015**.
- 💡 **Funding and Resource Gaps:** SSTC largely depends on **trust funds, voluntary contributions, and limited financial mechanisms** such as the **India-UN Development Partnership Fund** or the **IBSA Fund**.
 - ✦ These sources are often **unpredictable and insufficient** to meet rising **developmental demands**, particularly in priority sectors like **climate resilience, health, and digital infrastructure**.

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💡 **Geopolitical Tensions and Global Power Dynamics:** Rising **geopolitical tensions** and **competition for influence** between **major powers** pose risks to the **solidarity** underpinning SSTC.

- ✦ **External pressures** and **alliances** often complicate **autonomous** and **horizontal cooperation** among **Southern countries**, threatening the **mutual respect** and **equal footing** SSTC seeks to uphold.
- ✦ **China's expanding economic and security footprint** in **Africa** contrasts with the **U.S.'s strategic moves** in **West Asia**, complicating **South-South Cooperation's** goal of fostering **autonomous and equal partnerships**.

💡 **Digital Divide and Technological Gaps:** Despite progress in **digital public goods** shared in SSTC (e.g., India's **Aadhaar**, **UPI**), significant disparities remain in **technology access** and **innovation capacity**.

- ✦ Many **least developed countries** and **small island developing states (SIDS)** face challenges in **digital infrastructure**, **connectivity**, and **skilled human resources**, limiting their participation and benefits from **SSTC-led technological cooperation**.

💡 **Limited Integration of SSTC into Global Development Agendas:** Integrating SSTC into **national policies**, **UN frameworks**, and **multilateral development strategies** remains an ongoing challenge.

- ✦ While SSTC's prominence is rising with **UN resolutions** and growing **projects**, consistent **mainstreaming** with adequate **funding**, **reporting**, and **evaluation mechanisms** is required to solidify its role alongside **North-South cooperation**.

✍ For instance, **developed countries** failed to meet their **2009 pledge** to provide **\$100 billion annually** to the **Global South** for **climate finance**.

What Measures Can Enhance the Effectiveness of South-South and Triangular Cooperation?

💡 **Establishment of a South-South and Triangular Cooperation Solutions Lab:** The **UNOSSC Strategic**

Framework 2022–2025 advocates creating a dedicated **Solutions Lab** to facilitate **coordination**, **co-design**, and **scaling of initiatives**.

- ✦ This Lab fosters **innovation**, **knowledge exchange**, **capacity building**, and **technology transfer**, aligned with the **SDGs**.
- ✦ It will help overcome **fragmentation** by integrating **expertise** and **resources** regionally and globally.

💡 **Tailored Financing Mechanisms and Blended Finance:** To address **funding gaps**, **SSC stakeholders** emphasise the creation of **tailored financial instruments** such as **blended finance**, **debt swaps**, and **sustainable financing models**.

- ✦ **Funding modalities** like the **India-UN Development Partnership Fund** and the **IBSA Fund**, which mobilise **predictability** and **scale**, especially for **climate resilience**, **health**, and **digital infrastructure projects**.

💡 **Strengthening Institutional and Technical Capacities:** **Capacity building** is key to enhancing **project design**, **implementation**, and **sustainability**.

- ✦ **UN agencies** have launched **large-scale training programs** leveraging SSTC to enhance **technical know-how**, such as **joint certifications** in **disaster risk reduction**, **health emergency response**, and **digital governance**, engaging **thousands of participants globally**.

💡 **Mainstreaming SSTC into the Global Development Framework:** Integrating SSTC **international development agendas** enhances **alignment**, **coherence**, and **effectiveness**.

- ✦ **Progressive inclusion** is seen in many **UN resolutions** and **strategic plans** by **UN agencies**, promoting SSTC as a **complementary approach** alongside **traditional development cooperation**.

💡 **Expansion of Multi-Stakeholder Partnerships:** Building **partnerships beyond governments** to include the **private sector**, **civil society**, and **academia** expands **resources**, **innovation**, and **outreach**.

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✦ Examples include **collaborative digital platforms** and **renewable energy partnerships** presented by countries like **Türkiye** and **Portugal**, showcasing **tech-driven initiatives** and **scaling up impact**.

💡 **Digital Innovation and Technology Transfer:** Scaling **digital public goods** and **technology transfer** addresses **digital divides**.

✦ **Indian digital identity (Aadhaar)** and **payments (UPI)** models shared with partners illustrate successful **SSTC technological cooperation**.

✦ Increased emphasis on **digital infrastructure** and **inclusive data governance** enhances **development outcomes** in **less-connected regions**.

💡 **Empowerment of Women, Youth, and Vulnerable Groups:** Targeting **inclusion-focused SSTC** programs will foster **leadership, digital skills, and participation of marginalised groups**.

✦ Programs targeting **youth empowerment** and **women's leadership** leverage **SSTC** for wider **socio-economic benefits**, ensuring **cooperation** is **equitable and sustainable**.

✦ Special emphasis should be given to **Small Island Developing States (SIDS)** and the **least developed countries**, which are most vulnerable to **climate and economic shocks**.

Conclusion:

South-South and Triangular Cooperation (SSTC) embodies **solidarity** and **shared innovation** among **developing countries**, crucial for advancing **sustainable and resilient development** aligned with the **SDGs**. As **environmental expert Dima Al-Khatib, Director of UNOSSC**, observed, "Through **cooperative efforts**, we can pool our **resources** and **expertise** to better adapt to the consequences of **climate change** and pursue **sustainable energy alternatives**." Moving forward, **strengthening institutional capacities, scaling nature-positive solutions, and fostering inclusive partnerships** remain vital to harness **SSTC's full potential** for a **greener, equitable future**.

Building A Resilient and Future-Ready Startup Ecosystem

*This editorial is based on "**A startup revolution, the goal of 'innovation capital'**" which was published in The Hindu on 03/10/2025. The article brings into picture **Tamil Nadu's inclusive startup model**, where **state interventions** have spurred a **six-fold rise in ventures**, half led by **women**. It highlights how **India's startup story** is shifting beyond **metros**, with **regional hubs** and **targeted support** unlocking **new entrepreneurial potential**.*

Tag: GS Paper - 3, Employment, Growth & Development, IT & Computers, Mobilization of Resources

Tamil Nadu has emerged as a compelling case study in building **inclusive startup ecosystems** through **strategic state intervention**. In just 4 years, the state has witnessed a six-fold increase in registered startups to **over 12,100**, with **half being women-led**. While the country now boasts the **world's third-largest startup ecosystem**, the real transformation lies not in headline valuations but in how states are **systematically democratizing entrepreneurship**. India's startup story is increasingly being written beyond **Bangalore and Gurugram**, in tier-II and tier-III cities where **regional hubs, vernacular support systems, and targeted funds** for marginalized communities are unlocking previously untapped entrepreneurial potential.

What Factors are Driving the Growth of India's Startup Ecosystem?

💡 **Digital Public Infrastructure (DPI) & Financial Inclusion:** The massive rollout of India's **Digital Public Infrastructure (DPI)**, particularly the **Unified Payments Interface (UPI)** and **Aadhaar**, has radically reduced the cost of access and transaction friction, forming a fertile ground for **Fintech** and **E-commerce startups**.

✦ This **Fintech revolution** is driving financial inclusion for millions previously unbanked, allowing startups to instantly verify users and process small-value payments at scale, a unique advantage globally.

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✦ **UPI saw 19.63 billion transactions in September 2025** with a worth of ₹24.90 lakh crore, demonstrating unprecedented digital adoption that underpins new business models like **Quick Commerce**

✎ For instance, **Zepto's** scaled rapidly on the back of UPI-enabled microtransactions, showing how digital rails are directly powering new consumption models.

💡 **Supportive Government Policies and Regulatory Framework:** Government initiatives like **Startup India** and schemes like the **Fund of Funds for Startups (FFS)** have created a more enabling regulatory and financial environment, easing the path for new ventures with compliance simplification and targeted funding.

✦ This state support, alongside tax exemptions and fast-tracking of **Intellectual Property Rights (IPR)**, has de-risked entrepreneurship, especially in Tier-2 and Tier-3 cities.

✦ The number of DPIIT-recognised startups has surged from about 502 in 2016 to over **1,57,706 as of December 2024**, with over **51%** of new startups emerging from non-metro areas, showcasing the success of the decentralized support system.

💡 **Maturing Venture Capital and Private Equity Landscape:** Despite a cautious global market, India's VC ecosystem shows **strategic resilience**, with a shift towards backing companies with sound unit economics and a greater focus on early-stage and deep-tech investments.

✦ This maturing capital market ensures a sustained pipeline of funding, moving beyond a sole focus on late-stage megadeals, thereby nurturing the next wave of innovators.

✦ Indian VC funding saw a robust recovery in 2024, surging by **43% year-on-year to \$13.7 billion**, with **seed-stage startups recording the highest growth at 29%**, indicating investor confidence in nascent, quality ventures.

💡 **Large and Rapidly Digitizing Domestic Market:** India's colossal and growing population, coupled with **deepening internet and smartphone**

penetration, presents an unparalleled consumer market opportunity that drives massive demand for digital services across all sectors.

✦ This vast market size allows startups to achieve scale rapidly, offering local solutions that can eventually be tailored for global markets, especially in retail-tech, health-tech, and ed-tech.

✦ **India is projected to account for 16% of global consumption at purchasing power parity (PPP) by 2050**, up from 4% in 1997, and sectors like Consumer Technology dominated funding in 2024, securing **\$5.4 billion** driven by this consumption tailwind.

💡 **Growing Focus on Deep-Tech and AI Innovation:** The ecosystem is experiencing a marked pivot towards **Deep-Tech, including Generative AI, CleanTech, and Spacetechnology**, driven by a need to solve complex, high-impact problems and supported by dedicated government policies like the **National Deep-Tech Startup Policy**.

✦ This focus on frontier technologies is boosting innovation quality and helping Indian startups create globally competitive Intellectual Property (IP).

✎ Startups like **Niramai**, which uses **AI for non-invasive breast cancer screening**, highlight how Indian deep-tech ventures are solving critical social problems while building defensible IP.

✦ Investments in the Deep-Tech segment increased by a significant **78% in 2024**, reaching **\$1.6 billion**, with **87% of this funding directed towards AI-led startups**, highlighting the strategic shift in the investment thesis.

💡 **Abundant and Skilled Talent Pool:** India's **demographic dividend**, a large, young, and increasingly educated workforce **emerging from engineering and management institutions**, provides an expansive talent pool at a competitive cost.

✦ This talent availability, particularly in software, data science, and engineering, is fundamental for sustaining the rapid growth of the tech and innovation sectors.

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- ✍ Platforms such as **Scaler** are addressing the **employability gap** by retraining engineers in emerging skills like **data science and AI**, creating a stronger pipeline of startup-ready talent.
- ✦ **India's working-age population is expected to grow to 1 billion by 2047**, and the country ranks as the **third-highest producer of research papers globally**, underpinning the human capital available for innovation.
- 💡 **Global Ecosystem Integration and Cross-Border Collaborations:** India is actively integrating its startup ecosystem with the global economy through initiatives like the **G20 Startup20 Engagement Group** and international funding and market access programs.
 - ✦ This facilitates knowledge exchange, attracts foreign investment, and provides Indian startups with platforms to scale their business internationally, enhancing the ecosystem's maturity and credibility.
 - ✦ **Foreign Venture Capital Investor (FVCI) registrations** have been simplified, and policy reforms like the **elimination of the Angel Tax** have improved investor confidence, making India the **second-largest VC destination** in the Asia-Pacific region in 2024.

What are the Key Issues Associated with India's Startup Ecosystem?

- 💡 **Prolonged Funding Winter and Valuation Correction:** The ecosystem is grappling with a severe "**funding winter**," marked by extreme investor caution and a sharp shift away from the previous "**growth-at-all-costs**" philosophy, leading to widespread **valuation correction** and extended runways.
 - ✦ This conservative approach severely impacts early and growth-stage companies, as VCs demand clear paths to profitability, slowing the pace of new Unicorn creation and increasing the risk of startup failure or distress sale.
- ✦ **Venture Capital inflows in the Indian startup ecosystem plummeted sharply**, with funding in 2023 dropping to roughly **\$10 billion (though recovered recently)**.
- 💡 **Critical Talent Shortage and Skill Gap in Deep-Tech:** Despite having a large graduate pool, a severe **skill mismatch** exists, particularly in emerging and Deep-Tech domains like **Artificial Intelligence (AI)**, **Machine Learning (ML)**, and **cybersecurity**.
 - ✦ The traditional education system is struggling to keep pace with industry demands, resulting in a scarcity of high-quality "**Day 1 ready**" talent needed for innovation-led startups.
 - ✦ This forces startups to incur high costs on reskilling or competing fiercely for a small pool of top-tier talent, which stunts deep-tech innovation.
 - ✦ **Only 42.6% of Indian graduates were found employable in 2024**, marking a decline from 44.3 percent in 2023.
 - ✍ Furthermore, according to a **2023 PwC report**, **77% of Indian CEOs cited skill shortages as a major barrier to growth**, underscoring the severity of the crisis.
- 💡 **High Geographic Concentration of Startup Activity:** Startup growth and investment are disproportionately concentrated in just a few metro cities, creating an uneven ecosystem that fails to harness the entrepreneurial potential of **Tier-2 and Tier-3 cities**.
 - ✦ This **geographic concentration** limits market access, mentorship, and funding opportunities for promising regional ventures, causing a significant "**brain drain**" towards established hubs like **Bengaluru, Delhi-NCR, and Mumbai**.
 - ✍ As of 2021, the three primary clusters, **Bengaluru, Delhi-NCR, and Mumbai**, accounted for a massive **83% of India's Unicorns**, illustrating the heavily centralized nature of high-value startup creation and capital deployment.
 - ✦ Though startups are increasingly emerging from **Tier-2 and Tier-3 cities**, their scalability remains limited.

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💡 **Persistent Gender Disparity and Funding Gap:** A significant **gender gap** persists in both startup leadership and capital allocation, hindering the ecosystem's potential for diverse innovation and economic inclusion.

✦ **Women-led ventures** receive disproportionately less funding compared to their male counterparts, often due to systemic bias in the venture capital pitch process and a lack of women in senior investor decision-making roles.

✦ **In 2022, only 18% of startups were founded or led by women**, and Venture Capital (VC) funding for women fell to **9.3% in 2023**.

💡 **Complex and Evolving Regulatory Landscape:** Despite the government's efforts to enhance the **Ease of Doing Business**, startups continue to face challenges navigating a complex and frequently evolving regulatory environment, particularly concerning taxation, data privacy, and sectoral compliance.

✦ The recent implementation of the **Digital Personal Data Protection (DPDP) Act, 2023**, while crucial, adds a new layer of stringent compliance requirements that disproportionately burden lean startup operations.

✦ **Startups face difficulties ensuring compliance with multiple statutes**, and historically, causing delays in funding and adding unnecessary compliance costs, especially for early-stage foreign investments.

💡 **Limited Exit Avenues and Investor Lock-in:** The ecosystem suffers from a relative scarcity of large-scale, consistent **exit opportunities**, such as robust **Initial Public Offerings (IPOs) or strategic Mergers and Acquisitions (M&A)**, which is crucial for VCs to return capital to their Limited Partners (LPs) and complete the funding cycle.

✦ This limited liquidity risks long-term **investor lock-in**, potentially discouraging future investments in the growth and late stages of the market.

✦ **While IPOs did surge after 2021**, the performance of several major tech listings led to a cautious public market.

✍ Indian startups saw over **\$5 billion in exits through secondary transactions, IPOs, and block deals in 2024**.

What Measures can India

Adopt to Enhance Startup Ecosystem?

💡 **Regulatory Simplification and Single-Window Clearance:** India needs a streamlined compliance architecture where startups can access all approvals, registrations, and reporting obligations through a **single-window digital platform**.

✦ This reduces regulatory uncertainty, lowers transaction costs, and accelerates time-to-market.

✦ A **graded compliance system** based on business size and stage can minimize burdens on early ventures while ensuring accountability as they scale. This would create a **predictable regulatory environment** fostering innovation.

💡 **Deep-Tech and R&D Innovation Hubs:** Beyond service-driven startups, India must invest in **deep-tech incubation clusters** focusing on AI, biotech, clean energy, and defense technologies.

✦ Establishing **university-industry innovation consortia** can bridge research and commercialization gaps.

✦ Tax incentives and flexible IP-sharing models would encourage **lab-to-market transitions**. Such hubs will make India a global center for **frontier technology entrepreneurship** rather than just consumer apps.

💡 **Decentralized Access to Capital:** While venture capital is urban-concentrated, India can develop **regional startup funds** with blended financing models combining government seed capital, private equity, and CSR funds.

✦ A **tiered financing mechanism** ensuring micro, early-stage, and growth-stage capital would widen inclusion.

✦ Democratizing investment through **regulated crowdfunding platforms** can mobilize retail

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investors safely. This would ensure **geographically balanced startup growth**.

💡 **Global Market Access Platforms:** Startups require structured **soft-landing programs** for international expansion. Government-led trade missions, preferential access under FTAs, and **India Startup Embassies** abroad could link startups with global incubators and investors.

✦ Building a **national cross-border e-commerce framework** will help smaller ventures access global demand.

✦ This ensures Indian startups evolve into **globally competitive unicorns** rather than being inward-looking.

💡 **Talent Mobility and Entrepreneurial Skilling:** A robust ecosystem requires fluid **talent mobility** across academia, corporates, and startups. Introducing **entrepreneurial sabbaticals**, gig-friendly labor laws, and academic credits for startup engagement would normalize risk-taking.

✦ National-level **entrepreneurship skilling programs** aligned with future technologies and design thinking can build resilient human capital. This creates a workforce attuned to **startup agility and innovation culture**.

💡 **Public Procurement as a Startup Catalyst:** The state can act as a **market-maker** by systematically integrating startups into public procurement through platforms like GeM.

✦ Dedicated quotas in smart cities, defense tech, and green mobility projects would provide startups with **stable demand visibility**.

✦ Transparent e-tendering platforms and lighter pre qualification norms can lower entry barriers. This transforms the government from a regulator into an **anchor customer**, giving startups credibility and scale.

✦ **For instance, Log9 Materials** secured government pilot projects for EV battery tech, demonstrating how public procurement can validate and scale indigenous innovation.

💡 **Sustainable and Inclusive Startup Policies:** To make the ecosystem resilient, India must embed **ESG-linked incentives** into startup policy.

✦ Encouraging circular economy models, green innovation, and women-led startups through targeted support fosters **inclusive entrepreneurship**. Linking credit access to sustainability compliance would align business incentives with global climate commitments.

✍ This ensures India's startup boom is **socially equitable and environmentally sustainable**.

Conclusion:

India's startup ecosystem is evolving from **metro-centric growth to a broad-based innovation movement powered by deep-tech, inclusion, and digital infrastructure**. As Aravind Srinivas, CEO of Perplexity aptly notes, "**Indians can build firms, not just manage them,**" highlighting the country's potential for **original value creation**. To achieve this, the ecosystem must embrace sustainability, diversity, and frontier technologies while ensuring equitable access to capital and talent. Strengthening these pillars will secure a self-reliant, globally competitive, and resilient future for Indian startups.

UPSC @100-Navigating Civil Services Reforms

This editorial is based on "A 100-year journey as the guardian of meritocracy", which was published in The Hindu on 01/10/2025. The article commemorates the UPSC's 100-year journey, highlighting its foundational role in upholding merit, integrity, and fairness in India's civil service recruitment while adapting to contemporary challenges and reforms.

Tag: GS Paper - 2, Role of Civil Services in a Democracy

As the **Union Public Service Commission** marks a **century** since its inception, the story of India's most esteemed **recruitment body** reflects the nation's enduring commitment to **merit, integrity, and equal opportunity**. The UPSC is currently undergoing critical reforms to modernize its processes, but the bigger challenge lies beyond selection: **can India transform its civil services to prioritize innovation, lateral expertise, and**

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performance over conformity and seniority? The next century of public administration will depend not just on who enters the system, but on whether the civil services evolve into agile, accountable institutions capable of delivering governance befitting India's aspirations as a global power.

What are the Major Themes Commemorated During UPSC's Centenary Year?

- 💡 **Launch of a Commemorative Logo and Tagline:** The centenary celebrations included the unveiling of the **new UPSC logo**, reflecting the Commission's role as a **guardian of trust** and **continuity**.
 - ✦ At its centre is the **national emblem**, symbolising **authority** and **service to the nation**, encircled by a **wreath of banyan leaves** representing **wisdom** and **resilience**. A **ribbon** inscribed with "**Sangh Lok Seva**" reinforces the ethos of **accountability** and **duty**.
 - ✦ The **Centenary Logo** complements this by representing **continuity** and **transformation**. Its **wave motif** signifies the UPSC's **progressive**, **enduring**, and **adaptive** journey over a century, culminating in the final '**0**' of '**100**', where the UPSC logo rests, highlighting its **centrality** to every milestone in India's **administrative evolution**.

UPSC Logo:



Centenary Logo:



- 💡 **Introduction of the PRATIBHA Setu Initiative:** **PRATIBHA Setu** is an **online platform** connecting candidates who **clear interviews** but do not make

the **final selection** with alternate **employment opportunities** in **public** and **private sectors**.

- ✦ This initiative reflects UPSC's commitment to **inclusive** and **pragmatic support** for **aspirants** beyond **examination results**.
- 💡 **Digital Transformation and Technology Adoption:** The UPSC **centenary year** has seen the introduction of advanced **digital technologies**, such as **face recognition** for applications, and the new **online portal** "**My UPSC Interview: From Dream to Reality**."
 - ✦ It will ensure greater **ease**, **security**, and **transparency** in **recruitment processes**, reflecting a **progressive modernisation** aligned with the demands of **21st-century governance**.
- 💡 **Engagement with Aspirants through Virtual Town Halls and Outreach:** The Present Chairman of UPSC conducted **live virtual sessions**, directly interacting with thousands of **UPSC aspirants** across **India**.
 - ✦ This **first-of-its-kind engagement** emphasised **motivational guidance** and **receptiveness** to aspirant concerns, reinforcing UPSC's role as a **facilitator** of the '**Indian Dream**' grounded in **meritocracy**.

What is the Historical Background and Constitutional Provisions Related to the Union Public Service Commission?

- 💡 **Formation of Public Service Commissions:** The **Government of India Act, 1919**, provided for the establishment of a **Public Service Commission** in India to manage recruitment and control of public services.
 - ✦ On the recommendations of the **Lee Commission (1924)**, the **Public Service Commission** was created in 1926, with **Sir Ross Barker** as the first Chairman.
 - ✦ Further, the **Government of India Act, 1935**, established a **Public Service Commission for the Federation** and a **Provincial Public Service Commission** for each province or group of provinces.

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✍ With the implementation of the Act, the Public Service Commission became the Federal Public Service Commission.

💡 **Post-Independence Reforms and Consolidation:** On 26th January 1950, with the adoption of the Indian Constitution, the Federal Public Service Commission became the **Union Public Service Commission**.

✦ The Chairman and Members of the former Commission transitioned to the new body under **Article 378(1) of the Constitution**.

💡 **Constitutional Provisions:** Article 312 of the Indian Constitution allows Parliament to create All India services, with recruitment handled by the UPSC. At the state level, recruitment is managed by **State Public Service Commissions (SPSC)**.

✦ The UPSC and the SPSC are independent constitutional bodies. **Articles 315 to 323 (Part XIV)** of the Indian Constitution govern their composition, appointment, removal of members, and their powers and functions.

Constitutional Provisions Regarding Union Public Service Commission

Article 315

Establishes Public Service Commissions for the Union and States.

Article 316

Defines appointment and term of office for UPSC and SPSC members.

Article 317

Outlines removal and suspension procedures for UPSC and SPSC members.

Article 318

Grants power to regulate service conditions for Commission members and staff.

Article 319

Prohibits members from holding office after their term ends.

Article 320

Specifies the functions of Public Service Commissions.

Article 321

Allows for extending the functions of Public Service Commissions.

Article 322

Covers the expenses of Public Service Commissions.

Article 323

Mandates reports from Public Service Commissions.

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What are the Recent Advancements and Reforms in the Indian Civil Services?

- 💡 **Mission Karmayogi:** Launched to enhance the capacity and competency of civil servants, it provides continuous, personalized training on ethics, leadership, and digital skills through the iGOT-Karmayogi platform.
 - ✦ The programme supports a shift from rule-based to role-based human resource management, allocating jobs and training based on an officer's competencies rather than fixed rules.
 - ✦ This initiative aims to make officers adaptive, efficient, and aligned with modern governance requirements.
 - ✦ Additionally, **National Civil Services Day** celebrates exemplary officers annually, encouraging ethical governance and recognising innovations that improve public administration.
 - 📝 Officers like **Armstrong Pame**, known as the "Miracle Man," mobilised community resources to construct essential infrastructure like roads in remote Northeast India, demonstrating leadership, innovation, and public participation beyond conventional governance channels.
- 💡 **Lateral Entry Scheme:** Introduced to bring in domain experts at mid and senior levels, it complements the generalist bureaucracy with specialized knowledge in critical sectors like technology, health, and the economy.
 - ✦ This ensures that policy implementation benefits from both administrative experience and technical expertise.
- 💡 **Enhanced Focus on Digital Governance and Transparency Tools:** Platforms such as **e-Samiksha**, **CPGRAMS**, and the **Aspirational Districts Program** leverage technology for efficient service delivery and citizen engagement.
 - ✦ **CPGRAMS** alone handles over 20 lakh grievances annually, ensuring timely redressal and enhanced transparency.

- ✦ **Civil Services' Role in Governance Innovation and Public Service Excellence** has led key governance reforms, including initiatives like Madhya Pradesh's "Cyber Tehsil" digital land record management, which increased transparency and reduced case backlogs by 25%

- 💡 **360-Degree Appraisal System:** This system was introduced to replace the archaic **Annual Confidential Report (ACR)** that was often based solely on the superior's review.
 - ✦ The 360-degree appraisal includes confidential feedback from peers, subordinates, and stakeholders, providing a more holistic and objective assessment of an officer's performance, work-related attitude, and behaviour.
- 💡 **Assistant Secretary Programme:** It is an essential component of induction training for newly recruited IAS officers.
 - ✦ Launched in 2015, the programme aims to expose young IAS officers to the Union Government's policy-making processes and governance framework.
 - ✦ The objective is to develop a national perspective and a citizen-centric approach among officers before they undertake field duties.

What are the Major Issues Hindering the Effectiveness of the Indian Civil Services?

- 💡 **Political Interference Undermining Neutrality:** Frequent political meddling compromises bureaucratic independence and meritocracy.
 - ✦ For instance, Maharashtra witnessed frequent IAS officer transfers in 2023, with multiple reshuffles involving 8-10 officers at a time, highlighting political pressures impacting bureaucratic stability.
 - ✦ A notable instance is that of **Ashok Khemka**, the IAS officer known for his steadfast integrity, who faced an extraordinary 57 transfers over his 34-year career.

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✦ The **Supreme Court's Prakash Singh ruling (2006)**, emphasising **UPSC consultation** in appointing **State Police Chiefs**, is often bypassed, eroding the system's **impartiality**.

💡 **Corruption and Administrative Inefficiency:** **Corruption scandals** and **red tape** persist, slowing **public service delivery**.

✦ Instances like **manipulation in educational appointments** and **grant approvals** illustrate systemic **inefficiencies** impeded by **political interference** and **bureaucratic inertia**.

✦ The **Prevention of Corruption Act (PCA), 1988**, lacks a clear definition of **collusive corruption**, which involves secret collaboration for mutual benefit, often harming the public interest. This legal gap weakens efforts to effectively address such corruption.

📎 **Article 311** offers broad protection to civil servants, often delaying action against corruption.

💡 **Lack of Domain-Specific Expertise:** **Generalist officers** face difficulty managing **technical portfolios** like **health** or **infrastructure**.

✦ Despite **lateral entry schemes** introduced since **2019**, only about **63 experts** have joined, highlighting ongoing **expertise gaps**.

💡 **Resistance to Administrative Reforms:** A survey found that many **officers** resist **power devolution** to **local governments**, limiting **grassroots responsiveness**.

✦ This **resistance** slows the adoption of **decentralisation**, vital for **federal governance**.

💡 **Vacancies and High Job Stress:** Significant **vacancies** exist, e.g., approximately **1,500 IAS posts** remain unfilled, affecting **governance efficiency**, especially in critical roles in **Railways** and **law enforcement**, with **20% vacancies**.

✦ Officers face constant **public pressure**, long **work hours**, and **emotional stress**, contributing to **burnout** and **attrition**.

📎 Over the last decade, **853 Indian Revenue Service officers** opted for **voluntary retirement**, reflecting **stress** and **dissatisfaction factors**.

✦ Limited **institutional support** for **mental well-being** exacerbates the problem.

💡 **Lengthy UPSC Exam Cycle and Aspirant Challenges:** The **UPSC exam** spans over a **year**, with a vast **syllabus** and low **success rates (less than 1%)**, causing **financial** and **emotional strain** on aspirants, potentially limiting **civil service diversity** and **access**.

✦ The **low success rate** fosters a "**fear of failure**" and a dangerous '**sunk cost fallacy**' where **aspirants** continue preparing despite **diminishing returns**, simply because they've already **invested years** of their **prime professional life**.

✦ This often results in **burnout**, **anxiety**, and **social isolation**, representing a significant **loss of human capital** for the **nation**.

What Reforms Can be Adopted to Strengthen Civil Services in India?

💡 **Introduce Fixed Tenures and Civil Services Boards:** **Fixed tenure norms** for **officers** reduce **political interference** and **arbitrary transfers**, protecting **bureaucratic neutrality**.

✦ Ensure **protection from political interference** while holding civil servants accountable through clear service rules and a strong **Civil Services Board (CSB)**.

💡 **Expand Lateral Entry and Domain Expertise Recruitment:** Institutionalising **lateral entry** for **mid-career experts** addresses **skill gaps** in specialised sectors like **technology**, **economy**, and **health**.

✦ Currently, limited **lateral hires** are augmented by fresh proposals to boost **diversity** and **expertise** within the **services**.

✦ The **2nd Administrative Reforms Commission (ARC), 2005** recommended lateral entry into the civil services to **infuse specialised knowledge and expertise** that traditional generalist officers might lack.

📎 **Global Examples:** The UK and Singapore civil services regularly induct professionals from academia and the private sector.

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💡 **Enhance Capacity Building and Continuous Performance Review: Mission Karmayogi** and periodic **360-degree appraisals** ensure continuous **skill upgradation** and **accountability**, making **officers** adaptive to evolving **governance demands**.

- ✦ Both the **Surendranath Committee (2003)** and the **Baswan Committee (2016)** recommended the promotion of domain specialisation by identifying and grooming officers for sectoral leadership in areas such as health, infrastructure, and education.

💡 **Implement UPSC 2.0 Reforms for Exam Modernisation:** Building on proposals like those from former **RBI Governor Duvvuri Subbarao**, **provisions related to recruitment** should evolve to reduce **upper age limits**, limit **attempts**, and introduce **mid-career entry points** for **experienced professionals** in their **40s** in a **gradually phased manner**.

- ✦ This reform compresses **lengthy preparation cycles**, saving **valuable years** and diversifying **talent** by blending **youth energy** with **seasoned expertise**.
- ✦ Ensure representation of women and persons with disabilities not only in entry-level but also in leadership roles
 - 💡 Effectively implement Initiatives like **PRATIBHA Setu for Mains-qualified but unselected candidates** with **employment opportunities** in **public/private sectors** recognise their **merit** and reduce **preparation-related uncertainties**.

💡 **Promoting Ethics and Integrity:** Establish **Ethics Commissions** at the central and state levels to guide officers.

- ✦ Introduce regular modules on public service values through the **National Learning Week under the Mission Karmayogi**, where civil servants take an annual oath to uphold integrity, ethics, and constitutional values.
- ✦ Strengthen institutions like the **Lokpal and Central Vigilance Commission (CVC)** to curb corruption.

- ✦ The **2nd ARC, 2005** recommended shifting to Article 309 for reasonable safeguards, enabling quicker disciplinary action.

- ✦ The **UK's Nolan Committee (1994)** outlined seven core principles to guide public officials' ethical conduct, which includes **selflessness, integrity, objectivity, accountability, openness, honesty, and leadership** aimed at **upholding ethics in public life**.

💡 India must institutionalise such values to strengthen ethical standards in governance.

💡 **Improving Work Culture and Grievance Redressal:** Foster a people-centric and service-oriented work culture.

- ✦ Digitise grievance redressal through platforms like **Centralised Public Grievance Redress and Monitoring System (CPGRAMS)**, and strengthen feedback loops.
- ✦ Encourage innovation and risk-taking by rewarding performance and protecting against vindictive action for bona fide decisions.
- ✦ Ensure leveraging technology for transparency and ease, like **UPSC's new online application portals** with **face-recognition** and **real-time updates** streamline **candidate management** and curb **impersonation**.

Conclusion :

Sardar Vallabhbhai Patel famously called civil servants the "steel frame of India," emphasising their vital role in holding the nation's administration together. To honour this legacy, India's civil services must now be tempered with transparency, strengthened by reforms, and empowered to serve with integrity and adaptability. Only then can they continue to drive India's progress as the resilient backbone of its democracy.

Conclusion :

Sardar Vallabhbhai Patel famously called **civil servants** the "steel frame of India," emphasising their **vital role** in holding the nation's **administration** together. To honour this **legacy**, India's **civil services** must now be tempered with **transparency**, strengthened by **reforms**, and empowered to serve with **integrity** and **adaptability**. Only then can they continue to drive India's **progress** as the **resilient backbone** of its **democracy**.

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Advancing Disaster Resilience in India

*This editorial is based on “[India’s direction for disaster resilience](#)” which was published in *The Hindu* on 06/10/2025. The article brings into picture India’s shift from relief-centric to risk-reduction-focused disaster management, highlighting the ₹2.28 lakh crore allocation, community-based initiatives like *Apda Mitras*, and nature-based solutions that position India as a global leader in climate-resilient infrastructure.*

Tag: GS Paper - 3, Disaster Management, Environmental Impact Assessment (EIA), Environmental Pollution & Degradation

India faces multiple natural hazards requiring comprehensive [disaster management](#) strategies that extend beyond post-disaster relief. The [15th Finance Commission](#) marked a paradigm shift by allocating ₹2.28 lakh crore for disaster risk reduction. The government has adopted [nature-based solutions](#), established early warning systems, and created specialized volunteer networks to build community resilience. Through programs like modernizing fire safety, training lakhs of *Apda Mitras*, India is mainstreaming disaster preparedness at the grassroots level. This multi-faceted approach, guided by the [PM’s Ten Point Agenda on Disaster Risk Reduction](#), positions India as a global leader in climate-resilient infrastructure development.

What are the Major Advancements India has Made in Disaster Management?

- 💡 **Significant Reduction in Cyclone Mortality:** India has demonstrated a monumental success in achieving a **near-zero casualty target** for major cyclones by leveraging advanced early warning and meticulous evacuation protocols.
 - ✦ This outcome is a direct result of the continuous improvement in **Impact-Based Forecasting (IBF)** and the effective use of **Common Alerting Protocol (CAP)** for last-mile dissemination.
 - ✦ For instance, when [Cyclone Biparjoy](#) hit the Gujarat coast in 2023, the proactive evacuation

of over 100,000 people and livestock ensured zero human and animal casualties.

- 💡 **Professionalization and Global Role of NDRF:** The [National Disaster Response Force \(NDRF\)](#) has evolved into a highly **professional, multi-skilled, and rapidly deployable** specialized rescue and response unit, earning significant international recognition.
 - ✦ The NDRF’s swift, coordinated, and successful deployment for ‘[Operation Dost](#)’ in Turkey and Syria following the devastating February 2023 earthquake highlighted India’s capability in [Humanitarian Assistance and Disaster Relief \(HADR\)](#).
- 💡 **Institutionalization of Resilient Infrastructure through CDRI:** India has cemented its global leadership in disaster resilience by spearheading the [Coalition for Disaster Resilient Infrastructure \(CDRI\)](#), now involving **more than 40 countries**, mainstreaming resilience in development planning.
 - ✦ This initiative is translating into domestic action by integrating **risk assessment** into major projects like the [National Infrastructure Pipeline \(NIP\)](#).
 - ✦ CDRI’s recent collaboration with **DoT (Department of Telecommunications)** led to a **Disaster Risk and Resilience Assessment Framework** for over **0.77 million telecom towers**, ensuring the continuity of critical communication networks during disasters.
- 💡 **Leap in Technology-Driven Early Warning Systems:** The integration of advanced technology like **AI/ML, GIS mapping, and the CAP system** has made forecasting highly granular, moving from conventional weather warnings to **sector-specific, impact-based alerts**.
 - ✦ Mobile applications like **FloodWatch, Mausam, Meghdoot, KISAN and Damini (for lightning)** provide real-time, actionable alerts to citizens and farmers, enhancing community readiness.
 - ✦ The network of **seismic observatories** has more than **doubled from 80 in 2014 to 168 by early 2025**, significantly improving the

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monitoring capability for earthquake-prone regions.

💡 **Enhanced Financial Preparedness and Allocation:**

The financial framework for disaster management has been significantly strengthened with substantially increased, dedicated allocations for both response and long-term mitigation.

- ✦ The total allocation for the **State Disaster Response Fund (SDRF)** was sharply increased to **₹1.24 lakh crore** for the 2014-2024 period, compared to approximately **₹38,000 crore in the preceding decade**.
- ✦ Additionally, the **creation of a National Disaster Mitigation Fund** with a substantial corpus underscores a committed shift toward financing large-scale, preemptive infrastructure works and mitigation projects.

💡 **Legislative and Governance Reforms at Urban Level:**

Recent legislative proposals, such as the **Disaster Management (Amendment) Act, 2025** aim to address urban vulnerabilities and institutional gaps by mandating localized governance.

- ✦ The amended Act envisions the establishment of an **“Urban Disaster Management Authority”** for state capitals and major cities with municipal corporations.
- ✦ This move is crucial for strengthening the hands of Municipal Commissioners to **implement risk-informed urban planning** and prepare local disaster management plans at the city level.

What are the Key Disaster Challenges Undermining India's Resilience and Preparedness?

💡 **Cascading Climate-Induced Disasters in Fragile Ecosystems:**

The **Himalayan region** is increasingly vulnerable to **cascading hazards** where one extreme weather event triggers a series of secondary disasters, overwhelming local capacity.

- ✦ This is due to rising climatic variability and rampant **unregulated infrastructure projects**. An IIT-R study on the 2023 events in Himachal

Pradesh and Uttarakhand noted that each primary event, like a **cloudburst**, spawned **2.3 secondary hazards**, such as **landslides and flash floods**.

- 📌 Also, the **South Lhonak Lake GLOF (Glacial Lake Outburst Flood)** in Sikkim in October 2023 exemplifies the fragile ecosystem.

💡 **Failure of Urban Governance and Infrastructure:**

Rapid, **unplanned urbanization** has severely **compromised natural drainage**, resulting in chronic urban flooding and massive economic losses, demonstrating a failure in governance and resilient infrastructure planning.

- ✦ Due to poor regulation enforcement, more than **80% of India's population lives in districts highly vulnerable to extreme hydro-met disasters**.
- ✦ A recent report stated that **Bengaluru may need nearly 28 billion rupees (\$339 million)** to restore a drainage network damaged by rapid real estate development as repeated floods threaten to disrupt work and life in the IT hub.

💡 **Institutional Over-Centralization and Grassroots Gaps:**

Disaster management efforts remain **over-centralized** and often **reactive**, with insufficient functional autonomy, technical capacity, and fund flow to the District and local levels.

- ✦ The delays and complexities in fund disbursement from the **NDRF (National Disaster Response Fund)** and **SDRF (State Disaster Response Fund)** post-disaster severely **hinder timely recovery** and effective relief.

💡 **Technological Deficiencies in Early Warning Systems:**

Early Warning Systems often lack the **granularity** and **last-mile connectivity** necessary for non-cyclonic, localized, and rapidly evolving threats, resulting in delayed community response.

- ✦ An estimated **72% of Indian districts** are exposed to extreme flood events, but only about **25% have functional river-level flood forecasting stations**.

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✦ The absence of robust, localized Early Warning Systems was a key factor in the high casualties and infrastructure loss during the disasters.

💡 **Deepening Socio-Economic Vulnerability:** Pre-existing **socio-economic inequalities** and **poverty** significantly amplify disaster impact, as vulnerable populations are forced to inhabit high-risk, marginal lands with minimal resilient housing and safety nets.

✦ In India, recent heatwaves and floods disproportionately affect **daily wage laborers** and residents of **low-lying informal settlements**, who lack adaptive resources.

✦ In a report in 2024, the **International Labour Organization (ILO)** warned that more than 70% of all workers worldwide are at risk of exposure to excessive heat.

✍ It added that **India lost an estimated \$100 billion from heat-induced productivity losses.**

✍ Small businesses and informal workers like construction workers, farmers, street vendors and food delivery partners bore the brunt.

💡 **Deficient Enforcement of Building Codes and Land Use:** Lax enforcement of the **National Building Code (NBC), 2016**, and **unscientific land-use planning** in hazard-prone areas increase structural vulnerability, particularly in seismic zones and floodplains.

✦ Around **59% of the landmass of India** (covering all states) is prone to earthquakes of different shaking intensities yet the lack of strict retrofitting policies for old buildings and informal construction practices dramatically raise fatality risks.

✦ The risk of **building collapse** is chronic in densely populated metros, underscoring the poor regulatory oversight.

💡 **Reactive, Relief-Centric Approach Over Mitigation:** India's framework, despite its paradigm shift **post-2005**, still leans heavily toward **post-disaster response and relief** rather than **proactive risk**

reduction and long-term mitigation investments in infrastructure and ecological buffers.

✦ Natural catastrophes caused significant losses of **\$12 billion (over Rs 1 lakh crore) in India in calendar year 2023**, highlighting insufficient investment in preemptive measures like **protective embankments, resilient infrastructure, and coastal ecological restoration projects.**

Indian Prime Minister's Ten Point Agenda on Disaster Risk Reduction:

1. Integrate disaster risk management principles across all sectors of development.
2. Ensure comprehensive risk coverage for everyone, from vulnerable households to businesses and nations.
3. Promote women's leadership and active participation in disaster risk management.
4. Invest in global risk mapping to enhance understanding of natural hazards and disaster risks.
5. Harness technology to improve the effectiveness and efficiency of disaster risk management.
6. Establish a network of universities dedicated to research and action on disaster-related issues.
7. Use social media and mobile technologies to support disaster risk reduction efforts.
8. Strengthen local capacities and initiatives to boost disaster resilience at the community level.
9. Conduct systematic studies after each disaster to learn lessons and improve preparedness.
10. Foster greater international coordination and cohesion in disaster response.

What Measures Should India Implement to Improve Disaster Preparedness and Response?

💡 **Mandating and Empowering Grassroots Disaster Governance:** The **District Disaster Management Authorities (DDMAs)** must be legislatively strengthened, ensuring **full functional autonomy**, dedicated expert staff, and ring-fenced budgetary powers for local mitigation.

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✦ This requires making the preparation of **multi-hazard-specific Village and Ward-level Contingency Plans** a legally mandated, time-bound compliance measure for all Panchayats and Urban Local Bodies (ULBs).

✦ Decentralization must be operationalized by devolving a **fixed percentage of State Disaster Mitigation Fund (SDMF) to DDMA**s for exclusive use in local risk-reduction projects like drainage de-silting and retrofitting, overcoming central inertia.

💡 **Creating a National Disaster Resilience and Audit Framework:** An overarching **National Disaster Resilience Audit** framework should be institutionalized, making it mandatory for all major public infrastructure (power grids, highways, railway bridges) to undergo a triennial, **independent multi-hazard vulnerability assessment** and structural retrofitting plan.

✦ This framework must link central and state funding for infrastructure development (e.g., in the National Infrastructure Pipeline) to strict **Disaster-Resilient Construction Codes**, penalizing non-compliance and ensuring that all new construction adheres to high seismic and flood-resistant standards.

💡 **Integrating Climate-Risk into Financial and Urban Planning:** Disaster Risk Reduction (DRR) must be **fully mainstreamed into national and state financial planning** by making **risk-informed budgeting** an essential component of all five-year development and urban master plans.

✦ This involves introducing **Floodplain Zoning Regulations** as non-negotiable legal tools, classifying high-risk informal settlements as no-development zones, and strategically investing in **Nature-Based Solutions (NbS)** like restoring urban wetlands and mangroves to function as natural disaster buffers.

💡 **Developing Hyper-Local, Multi-Hazard Early Warning Systems (MHEWS):** The current early warning model must transition to a **hyper-local MHEWS**, capable of delivering **impact-based forecasts** for rapid-onset, localized hazards like

flash floods, intense rainfall, and **Glacial Lake Outburst Floods (GLOFs)**.

✦ This requires a massive, **time-bound deployment of a dense network of IoT-enabled micro-sensors** (for river levels, soil moisture, and slope stability) across vulnerable regions like the Himalayas and Western Ghats, ensuring last-mile alerts via the **Common Alerting Protocol (CAP)** directly to individual mobile phones with geo-tagging accuracy.

💡 **Institutionalizing Private Sector and Community Surge Capacity:** Establish a formal mechanism for the **private sector's systematic integration** into the disaster management cycle, moving beyond mere **Corporate Social Responsibility (CSR)** by legally mandating large firms to contribute pre-identified, specialized surge capacity (e.g., heavy machinery, drone fleets, emergency logistics).

✦ Simultaneously, strengthen **'Aapda Sakhi' initiative to train a million women from Self-Help Groups (SHGs) in high-risk zones** as certified, **First-Responder Psychosocial Support** and basic trauma care providers, leveraging existing social capital for faster post-disaster recovery.

💡 **Strengthening Disaster Health and Psycho-Social Readiness:** A dedicated **Disaster Health Management System** must be established, integrating the **National Health Mission (NHM)** with NDMA to ensure universal **Telemedicine and Mobile Medical Unit** capabilities that remain functional immediately post-disaster.

✦ This involves setting up specialized **Trauma and Critical Care Centers** in vulnerable districts and mandating the training of all healthcare staff, including those in primary health centres, in **Psychological First Aid (PFA)** to address the immediate and long-term mental health burden of survivors.

💡 **Enforcing Techno-Legal Compliance for Critical Infrastructure:** A stringent **Techno-Legal Regime** must be implemented to enforce compliance with all disaster safety standards, specifically mandating the **seismic retrofitting** of all pre-2005 critical

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government buildings, schools, and hospitals in Seismic Zones III, IV, and V.

- ✦ This compliance must be overseen by a newly created **National Disaster Safety Inspectorate**, empowered to issue heavy penalties and **"Stop Work" orders** for non-compliant infrastructure projects, making safety a legal and financial liability for developers and government agencies.

Conclusion:

India has made significant strides in disaster risk reduction through technological innovation, community engagement, and institutional strengthening. The multi-dimensional approach, from **hyper-local early warning systems to resilient infrastructure**, reflects a shift from **reactive relief to proactive preparedness**. By aligning its strategies with the **Sendai Framework for Disaster Risk Reduction**, India emphasizes education, capacity-building, and risk-informed development planning.

Reforming the Euthanasia Framework in India

This editorial is based on "Reforming passive euthanasia in India", which was published in The Hindu on 07/10/2025. The article explains that the UK has passed a bill allowing terminally ill adults to choose assisted dying under strict safeguards, while India, facing cultural and systemic challenges, continues to permit only passive euthanasia and should focus on making its existing laws more practical and humane.

Tag: GS Paper - 2, Government Policies & Interventions, Health, Issues Relating to Development, Issues Related to Disability

The **UK's Terminally Ill Adults (End of Life) Bill**, recently passed by the **House of Commons**, would legalise **assisted dying for terminally ill adults with less than six months to live**, subject to **strict safeguards** and **multiple medical approvals**. This **legislation** aims to provide **dying individuals choice and dignity** while ensuring **protection against coercion**. It contrasts with **India's cautious approach**, which limits euthanasia to **passive forms** and

faces challenges of **accessibility** and **ethical complexities**.

What is Euthanasia?

- 💡 **About:** **Euthanasia**, derived from the **Greek words 'eu' (good) and 'thanatos' (death)**, means **"good death"** or the **intentional act** of ending a **life** to relieve **unbearable suffering** caused by **incurable** or **terminal illness**.

- ✦ It often refers to a **painless, deliberate intervention** to end **life** with the primary aim of alleviating **physical, emotional, or spiritual distress**.

- 💡 **Types:** **Euthanasia** is broadly classified into the following **types** based on **consent** and **method**.

✦ Based on consent :

📌 **Voluntary Euthanasia:** Performed with the **informed consent** of a **mentally competent patient** who **requests** to end their life.

📌 **Non-voluntary Euthanasia:** Conducted when the **patient** is unable to give **consent** (e.g., **unconscious** or **mentally incapacitated**), and a **surrogate decision-maker** authorises it.

📌 **Involuntary Euthanasia:** Done against the **patient's will** or **without asking**, considered **illegal** and **ethically unacceptable**.

✦ Based on method:

📌 **Active Euthanasia:** **Direct action** to cause **death**, such as **administering a lethal injection**.

📌 **Passive Euthanasia:** **Withholding** or **withdrawing life-sustaining treatment**, allowing **death** to occur naturally.

💡 Legal Aspects Globally:

- ✦ Countries like the **Netherlands, Belgium, Canada**, and some **U.S. states** legally permit **voluntary active euthanasia** or **physician-assisted suicide** under **strict safeguards**.
- ✦ In most countries, **active euthanasia** remains **illegal** and may be considered **homicide**.
- ✦ **Assisted suicide** differs as the **patient self-administers lethal medication**, while **euthanasia** involves a **third party causing death**.

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Legal Status in India:

- ✦ **Active Euthanasia:** Deliberately causing death through acts like administering lethal substances was considered illegal and punishable under the Indian Penal Code (IPC).
 - 📌 The newer BNS continues this stance, criminalising active euthanasia to prevent misuse and protect life.
 - 📌 Sections 100 and 101 of the Bharatiya Nyaya Sanhita (BNS) define culpable homicide and murder, meaning that any act of killing, including euthanasia, is considered a crime unless it falls under certain legal exceptions.
- ✦ **Passive Euthanasia:** Legally permitted since the landmark Supreme Court judgment in Aruna Shanbaug v. Union of India (2011) and further clarified in Common Cause v. Union of India (2018), passive euthanasia involves withholding or withdrawing life-supporting treatment, allowing natural death.

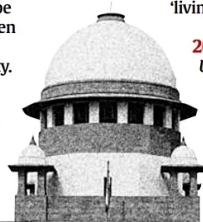
IN THE SUPREME COURT

2011: *Aruna Shanbaug v. Union of India* recognised that life-sustaining treatment could legally be withheld/withdrawn even from persons without decision-making capacity.

2018: *Common Cause v. Union of India* recognised the right to die with dignity as a fundamental right under Article 21 of the Constitution

of India, and legalised the use of advance medical directives or 'living wills'.

2023: *Common Cause v. Union of India* simplified the process for making living wills and withholding/withdrawing life-sustaining treatment by removing bureaucratic hurdles.



What are the Key Arguments Supporting the Legalisation of Euthanasia?

- 💡 **Respect for Patient Autonomy:** Legalising euthanasia affirms an individual's right to make decisions about their own body and life, including the right to choose a dignified death when facing unbearable suffering.
 - ✦ This aligns with modern views on personal freedoms and self-determination.
 - ✦ The Supreme Court of India's 2018 ruling in *Common Cause vs Union of India* recognised the "right to die with dignity" under Article 21, allowing patients to create advance medical directives or living wills.

- 💡 **Relief from Suffering:** Many patients with terminal illnesses endure intense physical or psychological pain that cannot be fully alleviated by palliative care.
 - ✦ Euthanasia offers a compassionate choice to end such suffering humanely.
 - ✦ For example, over 60% of euthanasia deaths in countries where it is legal relate to cancer patients experiencing severe pain.

- 💡 **Reduction of Prolonged and Futile Treatment:** Euthanasia can prevent unnecessary medical interventions that prolong suffering without reasonable hope of recovery, reducing emotional and financial burdens on families and healthcare systems.
 - ✦ Passive euthanasia is legally permitted in India under strict guidelines (such as in the Aruna Shanbaug case, 2011), enabling withdrawal of futile treatment.

- 💡 **Improved Quality of End-of-Life Care:** Legalisation encourages better hospice and palliative care frameworks by bringing euthanasia into regulated medical practice, emphasising patient comfort and dignity.
 - ✦ In India, where palliative care access remains limited, euthanasia can provide a compassionate option to end prolonged suffering.

- 💡 **Global Practices as a Reference:** Nations such as the Netherlands, Belgium, and Canada have established comprehensive legal frameworks for euthanasia that incorporate strict safeguards, multi-tier medical oversight, and consent verification mechanisms.
 - ✦ India can draw lessons from these models to design a balanced approach that upholds patient autonomy while preventing misuse.

What are the Major Concerns that Argue Against the Legalisation of Euthanasia?

- 💡 **Ethical and Moral Opposition:** Many in Indian society view euthanasia as morally wrong, believing in the sanctity of life as inviolable.

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- ✦ **Religious and cultural beliefs** strongly oppose **active ending of life**, considering it equivalent to **murder**.
- 💡 **Risk of Abuse and Coercion:** Vulnerable groups such as the **elderly, disabled, and financially dependent** are at risk of being **pressured or coerced** into choosing euthanasia.
 - ✦ In India, where **socioeconomic disparities** and **uneven healthcare access** exist, families or caregivers may influence decisions for **financial, emotional, or practical reasons**, compromising the patient's true autonomy.
 - ✦ Such coercion could lead to **unethical practices** and undermine the principle of **voluntary choice**.
- 💡 **Difficulty in Assessing Mental Capacity:** **Psychiatric assessments** are essential to ensure that patients requesting euthanasia are **mentally competent** and are making informed decisions.
 - ✦ However, many **psychiatrists in India** report **lacking confidence** in diagnosing **depression** or detecting **subtle coercion**, especially in terminally ill patients.
 - ✦ This increases the likelihood of **inappropriate euthanasia approvals**, potentially resulting in **ethical and legal complications** for medical professionals.
- 💡 **Legal Ambiguities and Criminalisation:** Under the Indian Penal Code, active euthanasia and assisted suicide are considered criminal acts.
 - ✦ Acts amounting to active euthanasia or assisted suicide can be prosecuted under the **Bharatiya Nyaya Sanhita (BNS), 2023**.
 - ✦ **Sections 100 and 101 of the BNS** define **culpable homicide and murder**, rendering any act of **killing**, including **euthanasia**, a **criminal offence** unless it falls under **specified exceptions**. Additionally, **Section 108** criminalises **abetment of suicide**, further complicating the **legal framework** surrounding **active euthanasia**.
 - ✦ The **legal framework** lacks **clear legislation** to regulate **euthanasia**, generating **ambiguity** and **risk for practitioners**.

- 💡 **Procedural Complexity and Judicial Burden:** Even **passive euthanasia** requires **court approval** and **multiple medical boards** per **Supreme Court guidelines**, rendering the **process slow** and **inaccessible** for many **families**, thereby limiting **practical application**.
- 💡 **Public Awareness and Attitude Variability:** Studies from regions like **Kerala** indicate varied **public knowledge** and **mixed attitudes** toward **euthanasia**, with less than **40% supporting ending life voluntarily**.
 - ✦ This gap complicates **policy acceptance**.
- 💡 **Concerns Over Impact on Palliative Care:** Critics argue that **legalising euthanasia** might reduce **efforts** and **resources** devoted to **palliative care**, which remains **underdeveloped in India**.
 - ✦ **Medical professionals** emphasise improving **pain management over ending life**.
 - ✦ According to the **World Health Organisation (WHO)**, over **40 million people worldwide** require **palliative care** annually, yet only **14%** actually receive it.
 - ✦ In **India**, an estimated **7 to 10 million people** need **palliative support** each year, but access remains extremely limited, reaching barely **4%** of those in need, highlighting significant **healthcare gaps** and the urgent need to **strengthen palliative infrastructure**.

What Measures Can India Adopt to Ensure Dignified End-of-Life Care?

- 💡 **Streamline Passive Euthanasia Procedures:** In **January 2023**, the **Supreme Court of India** simplified the process for **passive euthanasia** by removing the mandatory requirement of **judicial magistrate attestation** for **advance medical directives (living wills)**, allowing **notarization** or **gazetted officer attestation** instead.
 - ✦ Integrating **living wills** into the **National Health Digital Record** ensures **easy access** by **medical professionals nationwide**, expediting **decision-making**.
- 💡 **Develop a Clear Legislative Framework:** The **Supreme Court** has laid down **guidelines** but

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emphasised **Parliament** should enact **comprehensive legislation**, especially to clearly distinguish **active** and **passive euthanasia** and regulate **advance directives**.

- ✦ A **robust law** will reduce **ambiguity**, protect **medical practitioners** from **legal risks**, and provide **procedural clarity**.

💡 **Institutionalise Hospice and Palliative Care:** Expanding and strengthening **palliative care infrastructure** is critical, as current **access in India** is much less than that of those in need.

- ✦ **International models** (e.g., **Holland's palliative networks**) highlight how **palliative care** reduces demand for **euthanasia** by alleviating **pain effectively**.

💡 **Create Multidisciplinary Hospital Ethics Committees:** **Hospitals** should establish **ethics committees** comprising **doctors**, **legal experts**, and **social workers** to oversee **euthanasia decisions**, ensuring **patient consent**, **mental capacity checks**, and **ethical compliance**.

- ✦ This **decentralises oversight** and reduces **delays** caused by **court involvement**.

💡 **Train Medical and Legal Professionals: Specialised training programs** on **end-of-life care**, **legal aspects of euthanasia**, and **psychiatric evaluation** can improve the **diagnosis of patient capacity** and **ethical decision-making**.

- ✦ This reduces **misuse risks** stemming from **improper assessments**.

💡 **Enhance Public Awareness and Education:** Promote **awareness campaigns** about **living wills**, **end-of-life choices**, and **euthanasia's legal status** to encourage **informed patient decisions** and **family support**.

- ✦ Incorporate **cooling-off periods**, **mandatory psychological counselling**, and **review by independent medical boards** to prevent **coercion** and **wrongful euthanasia**.

Conclusion:

The **debate on euthanasia in India** balances **individual autonomy** with **ethical, cultural, and legal values**. **Supreme Court rulings** recognise the **right to die with**

dignity via passive euthanasia and **advance directives**, yet **procedural complexity**, **societal diversity**, and **healthcare disparities** remain challenges. As **Mahatma Gandhi** noted, "The true measure of any society can be found in how it treats its **most vulnerable members**." Strengthening **laws**, **palliative care**, and **public education** provides a **compassionate, regulated path forward**.

Unleash the Strategic Power Of Indian Diaspora

This editorial is based on "[Don't blame Indian-Americans for India's diplomatic failures](#)", which was published in The Indian Express on 07/10/2025. The article points out that while the Indian-American diaspora has actively contributed to India's interests through advocacy and leadership, the larger challenge lies in India's own approach to diplomacy and narrative-building, which could benefit from greater strategic engagement and support for its diaspora community.

Tag: GS Paper-2, Effect of Policies & Politics of Countries on India's Interests, Indian Diaspora, Government Policies & Interventions, Welfare Schemes.

In today's **interconnected world**, India's **diplomatic effectiveness** hinges not only on its **economic clout** but also on its ability to **strategically engage with global narratives**. Despite the **Indian diaspora's rising influence**, India faces significant **challenges in leveraging this asset fully**, largely because "**India has never learned to tell its own story**," whereas other nations like **Pakistan** effectively **mobilise and cultivate diaspora networks** to shape **international policy**. This underscores the urgent need for more **professional and sophisticated diplomacy** that complements **diaspora potential** with robust **statecraft**. What is the Contemporary Status and Influence of the 'Indian Diaspora'?

- 💡 **About:** The **Indian Diaspora** refers to **people of Indian origin** who live **outside the territorial boundaries of India**, either **temporarily or permanently**, while maintaining **cultural, social, or emotional ties** to their homeland.

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✦ Types:

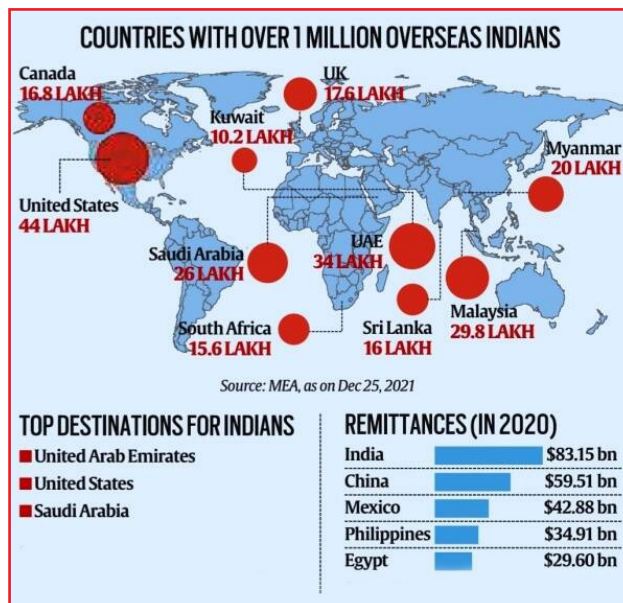
- ✦ **Non-Resident Indians (NRIs):** Indian citizens residing abroad for more than **182 days in a financial year** but retaining Indian citizenship.
- ✦ **Persons of Indian Origin (PIOs):** Individuals who are **foreign citizens** but can trace their **ancestry or heritage to India**.
- ✦ **Overseas Citizens of India (OCI):** Persons granted a **special residency status**, allowing **lifelong visa-free travel to India** and certain rights, but not **full citizenship**.
- ✦ In 2015, the **Persons of Indian Origin (PIOs)** and OCI categories were merged to streamline documentation and benefits.

💡 Historical Evolution:

- ✦ **Ancient Movements:** Indian **traders, craftsmen, and religious leaders** migrated to **Southeast Asia, Africa, the Middle East, and Europe** centuries ago.
- ✦ **Colonial Era:** Large-scale migration during **British rule** sent Indians as **indentured labourers** to sugarcane plantations in **Mauritius, Fiji, Trinidad, South Africa, and the Caribbean**.
- ✦ **Post-Independence:** **Skilled professionals** moved to developed nations (**USA, UK, Canada, Australia**), while **workers** migrated to **Gulf countries** under **contract labour arrangements**.

💡 Scale and Diversity:

- ✦ According to **UNFPA 2023**, India leads the **world in emigration**, hosting a **massive diaspora** across the globe.
- ✦ As of **May 2024**, the total number of **overseas Indians** worldwide is approximately **35.42 million**, according to **India's Ministry of External Affairs**.
- ✦ They are spread across **more than 200 countries**, representing **diverse regions, languages, religions, and caste backgrounds**.



What is the Role of the Indian Diaspora in Shaping India's Development and Global Influence?

- 💡 **Economic Support Through Remittances:** India has consistently remained the world's largest recipient of remittances for over a decade.
 - ✦ India received a record **\$135.46 billion** in **diaspora remittances** in FY25, a **14% increase** from the previous year.
 - ✦ These remittances cover **47% of India's \$287 billion merchandise trade deficit**, acting as a **stabilizing force** for India's external finances.
 - ✦ **Remittances** alone contribute a significant share to states like **Kerala**, where they account for about **20% of the state's GDP**.
 - ✦ With **35.42 million overseas Indians** concentrated mainly in **10 countries**, including the **US, UAE, Malaysia, and Canada**, the diaspora wields considerable **economic influence globally**.
- 💡 **Diaspora Investments Driving India's Economy:** **Diaspora members** actively invest in **India's stock markets and businesses**, facilitated by government schemes such as **NRE accounts** and **double-taxation treaties**.

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✦ From April to September 2024, investments via NRI deposit schemes nearly doubled to \$7.8 billion, fueling India's economic development and entrepreneurship.

💡 **Skilled Workforce and Knowledge Exchange:** The Indian diaspora includes a large pool of highly skilled professionals who contribute globally and bring back expertise through return migration or collaborations, significantly impacting sectors like IT, pharmaceuticals, and academia.

✦ Indian immigrants have significantly impacted global business, with over 20 CEOs of Indian origin leading Fortune 500 companies as of 2024, including Sundar Pichai (Google & Alphabet) and Satya Nadella (Microsoft).

💡 **Political Influence:** Diaspora groups supported key initiatives like the US-India Civil Nuclear Agreement (2008) and Justice Dalveer Bhandari's ICJ re-election (2017).

✦ Leaders of Indian origin, such as Vivek Ramaswamy (USA), Leo Varadkar (Ireland), and Antonio Costa (Portugal), strengthen diplomatic ties with host nations.

✦ Diaspora lobbying has promoted India's permanent UN Security Council membership, shaping global perceptions.

💡 **Cultural Diplomacy:** The diaspora serves as cultural ambassadors, promoting Indian heritage, festivals, cuisine, yoga, classical arts, and languages abroad.

✦ Key initiatives include Pravasi Bharatiya Divas, Promotion of Cultural Ties with Diaspora (PCTD), Know India Programme (KIP), and Festival of India events organised by Indian missions worldwide.

📎 Observed on June 21, International Yoga Day was declared by the UN in 2014 following India's proposal to promote yoga's holistic benefits worldwide.

✦ Diaspora communities in countries like Mauritius, Trinidad, Fiji, the UK, and the US celebrate Diwali, Holi, Eid, and organise Indian classical music and dance festivals, preserving cultural identity.

What are the Key Challenges Currently Confronting the Indian Diaspora?

💡 **Economic Vulnerability of Low-skilled Workers:** Indian migrant workers in Gulf Cooperation Council (GCC) countries face significant job insecurity due to volatile oil prices and evolving labour regulations.

✦ For example, the oil price dip in 2024 led to layoffs and non-renewal of contracts for many low-wage workers in Saudi Arabia and the UAE, disrupting remittance flows temporarily.

✦ The "Kafala" system in Gulf countries still exposes workers to exploitative practices like confiscation of passports, restricting their movement and livelihood security.

💡 **Brain Drain and Talent Loss:** India continues to witness a steady outflow of skilled professionals, as a significant number of medical graduates and engineering postgraduates migrate abroad in pursuit of better remuneration, research opportunities, and advanced career prospects.

✦ According to the Ministry of External Affairs (MEA), as of January 1, 2024, over 11.6 lakh Indian students were enrolled in higher education institutions abroad, highlighting India's growing global academic footprint and educational mobility.

✦ While recent years have seen a modest rise in return migration due to changing global economic conditions and immigration norms, the continued outflow of skilled professionals poses a long-term challenge to India's innovation ecosystem, particularly in high-tech sectors like biotechnology and information technology.

💡 **Racism and Xenophobia:** Recent years have witnessed a surge in hate crimes against Indians, particularly in countries like Australia, the US, and parts of Europe.

✦ In 2024, multiple attacks on Indian students in Australian universities raised concerns about safety and social inclusion.

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✦ These incidents dampen diaspora morale and raise challenges for Indian consulates to manage community welfare abroad effectively.

💡 **Restrictive Immigration and Visa Policies:** Countries including the US, UK, and Canada tightened visa norms in 2023-25, restricting skilled worker and student visas, impacting Indian professionals' mobility.

✦ The US has raised the **H-1B visa fee** to \$100,000 from \$1,000–\$5,000 (effective 21 Sept 2025) to curb misuse and prioritise high-skilled, high-paid workers, impacting Indian tech professionals, who made up 71% of recipients in 2024, in terms of costs, mobility, and earnings.

💡 **Limited Political Participation and Voting Rights:** NRIs remain constrained by the requirement of physical presence in India for voting, despite repeated calls for postal or online voting alternatives, which have been delayed.

✦ This limits diaspora influence on Indian elections and policy formulation, affecting their interests, causing a democratic deficit for millions of Indians living overseas.

💡 **Gaps in Policy Framework and Data Management:** The absence of a unified and updated database on overseas Indians hampers targeted welfare and diplomatic engagement.

✦ Though portals like e-Migrate exist, their scattered nature and bureaucratic red tape deter effective grievance redressal.

What Key Initiatives has the Indian Government implemented for the Indian Diaspora Globally?

💡 **Overseas Citizenship of India (OCI) Scheme, 2005:** Provides lifelong visa-free travel to India for Persons of Indian Origin (PIOs), allowing them to live, work, own property, and invest in India without restrictions.

✦ This scheme strengthens ties by facilitating ease of access to India for the diaspora.

💡 **Pravasi Bharatiya Divas (PBD):** An annual event since 2003, it celebrates the contributions of the Indian diaspora to India's development.

✦ The biennial convention, such as the 18th PBD held in Odisha in 2025, themed "Diaspora's Contribution to a Viksit Bharat," offers a platform for dialogue, cultural exchange, and showcasing investment opportunities in Indian states.

💡 **Pravasi Bharatiya Samman Award:** The highest honour conferred on outstanding NRIs, PIOs, or diaspora organisations for exemplary contributions in various fields, encouraging further engagement with India.

💡 **Pravasi Bharatiya Bima Yojana (PBBY), 2006:** A mandatory insurance scheme for Indian migrant workers under the Emigration Check Required (ECR) category, providing coverage against accidental death or disability during overseas employment.

💡 **Know India Programme (KIP):** A flagship initiative aimed at young diaspora members (aged 18-30), familiarising them with India's culture, development, and opportunities through a three-week orientation and immersion program.

💡 **Visiting Advanced Joint Research (VAJRA) Faculty Scheme:** Invites overseas scientists to collaborate with Indian institutions, promoting high-quality research in cutting-edge scientific fields.

💡 **Promotion of Cultural Ties with Diaspora (PCTD) Scheme:** Supports Indian missions abroad to organise cultural programs promoting India's heritage and strengthening the diaspora's cultural identity overseas.

💡 **Voting Rights for NRIs:** Through the Representation of the People (Amendment) Act, 2010, NRIs are allowed to vote in Indian elections, enhancing their political participation in India's democratic process.

💡 **Madad Portal:** Provides a grievance redressal mechanism for Indians abroad, offering legal assistance, emergency repatriation, and timely support to distressed citizens.

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Recent Evacuation Programs :

- ✦ **Operation Sindhu (2025):** Successfully evacuated over **4,400 nationals** from Iran and Israel amid escalating hostilities, including **3,500 from Iran** and **800 from Israel**.
- ✦ **Operation Kaveri (2023, Sudan):** Evacuated more than **3,000 Indians** during Sudan's conflict, including **professionals** and **families**, leveraging **Indian Navy** and **Air Force** support.
- ✦ **Operation Ajay (2023, Israel):** Over **1,300 Indians** evacuated in response to **intensified violence**, showcasing **rapid crisis response capabilities**.
- ✦ **Operation Ganga (2022):** During the **Russia-Ukraine war**, India **airlifted over 18,000 nationals**, mostly **students**, through **neighbouring countries** using **military and commercial flights**.

What Additional Measures Should be Adopted to Empower the Indian Diaspora?

- 💡 **Establish a Unified, Updated Diaspora Database:** To address **data inconsistencies**, the government should create a **unified, real-time diaspora database** linking the **Ministry of External Affairs**, **immigration**, **tax**, and **consular data**.
 - ✦ This would ensure better **targeting** and **implementation of welfare schemes**.
 - ✦ The **Standing Committee's 2025 report** advocated for a **national migration database** and **streamlined policy measures** to better **integrate the diaspora's aspirations** and **protect vulnerable groups**.
- 💡 **Enact a Diaspora Protection Act:** Codify rights of **OCIs and NRIs** to create a **legal framework** ensuring their **welfare** and **grievance redressal**.
 - ✦ This would resolve current **legal fragmentation** and **eligibility ambiguities** noted in recent reports.
 - ✦ The Act could draw from **diaspora protection laws** in countries like **Israel** or **China**.

- 💡 **Facilitate Political Inclusion through Voting Reforms:** Implement **postal** or **online voting** for **NRIs**, as recommended by the **Election Commission** and **parliamentary committees**.
 - ✦ This would enhance **democratic participation** without the **physical presence barrier**.
- 💡 **Expand Skill Development and Pre-Departure Orientation:** Scale up training under the **Pravasi Kaushal Vikas Yojana** and **Pre-Departure Orientation Training**.
 - ✦ Equip **overseas Indian workers** with **skills attuned to host country workplace norms**, reducing **vulnerability** and **exploitation**.
- 💡 **Enhance Consular and Legal Support Services:** **Indian embassies** should establish **multi-lingual legal aid desks** and robust **grievance redressal mechanisms**.
 - ✦ This addresses **language barriers** and improves **protection for vulnerable diaspora members**, especially in the **Gulf**.
- 💡 **Promote Diaspora Investment with Tax Incentives and Simplified Processes:** Offer targeted **tax benefits**, **green bonds**, and easier **compliance** for **diaspora investments**.
 - ✦ Showcase **investment opportunities** during **Pravasi Bharatiya Divas** and **state-specific diaspora programs**.
 - ✦ This fosters **economic linkage** and supports **India's growth goals**.
- 💡 **Institutionalise Regular Impact Audits and Policy Reviews:** Conduct **annual audits** of **migration MoUs**, **diaspora schemes**, and **consular services**.
 - ✦ Use **transparent metrics** to evaluate **outcomes** and **refine strategies**, following recommendations from the **2025 Lok Sabha Report**.
- 💡 **Fostering Retention, Return, and Growth of Talent:** India needs a **comprehensive strategy** to **counter brain drain** and **shift towards talent retention** and attraction by transforming systemic weaknesses into attractive opportunities for its **global talent**.

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- ✦ This involves not merely welcoming back the **diaspora**, but proactively upgrading the **domestic ecosystem** with **global-standard research infrastructure** and **competitive incentives**.
- ✦ **Targeted re-entry schemes**, combined with a focus on improving the **quality of life** and minimising **bureaucratic hurdles**, aim to foster a **dynamic environment** where India's **brightest minds** can find fulfilling **growth** and contribute directly to the nation's **development goals**.

Conclusion:

Prime Minister Modi describes the **Indian diaspora** as “**India’s ambassadors**,” emphasising their unique role in advancing both **soft power** and **hard power**. Through contributions to **democracy promotion**, **social harmony**, and **economic development**, the diaspora serves as a vital **bridge between India and the world**. Embracing this **community** with robust **engagement**, guided by the **Ministry of External Affairs’ 4Cs framework** of **Care, Connect, Celebrate, and Contribute**, will accelerate India's **journey** toward becoming a truly **global and developed nation**.

Advancement Of Women's Empowerment in India

*This editorial is based on “**Short dresses, long lectures: Why men are still asking women to ‘go home’**” which was published in The Indian Express on 07/09/2025. The article describes how a group disrupted a Miss Rishikesh pageant rehearsal in Uttarakhand, attempting to police women's clothing and choices in the name of culture. The contestants resisted, challenging moral policing and highlighting the ongoing struggle against patriarchal control in India.*

Tag: GS Paper - 2, Issues Related to Women, GS-Paper 1, Role of Women.

In recent years, India has witnessed a significant rise in **women's empowerment**, reflected in greater participation in **education**, **politics**, **entrepreneurship**,

and **social activism**. However, this progress has also sparked debates over **culture**, **morality**, and **autonomy**. Incidents like the disruption of the **Miss Rishikesh pageant rehearsal** in Uttarakhand reveal persistent **moral policing** and **patriarchal control**, challenging women's **right to self-expression**. Addressing these tensions is essential to promote **gender equality**, **individual freedom**, and a society that genuinely respects women's **choices and aspirations**.

What are the Key Factors Driving the Growth of Women's Empowerment in India?

- 💡 **Increasing Female Literacy:** India's **female literacy rate** was projected at around **70.3% in 2025**, showing a steady upward trend thanks to government schemes like **Beti Bachao Beti Padhao**.
 - ✦ **Female youth literacy** is even higher at **96%** for ages 15-24, reflecting growing **educational access**.
 - ✦ However, **rural-urban** and **state-wise disparities** persist, with states like **Kerala** and **Mizoram** having close to universal female literacy, while **Bihar** and **Rajasthan** lag behind considerably.
- 💡 **Rising Workforce Participation:** **Female labour force participation rate** has shown encouraging growth, reaching **41.7% in 2023-24**, up from under 30% a decade ago.
 - ✦ Women's participation is increasing, particularly in the **formal sectors**, the **gig economy**, and **skilled jobs** such as **IT** and **healthcare**.
 - ✦ **Self-employment** among women rose from **51.9% in 2017** to **67.4% in 2024**, indicating growing **economic independence** and **entrepreneurship opportunities**.
- 💡 **Entrepreneurship and Economic Independence:** **Women-led Micro, Small, and Medium Enterprises (MSMEs)** have nearly doubled over the last decade to about **1.92 crore enterprises in 2023-24**.
 - ✦ The **share of women-owned proprietary establishments** in India has risen significantly from **17.4% in 2010-11** to **26.2% in 2023-24**, reflecting growing **female entrepreneurship**.

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and economic participation, driven by initiatives like **PM Mudra Yojana**, **Stand-Up India**, and **Mahila E-Haat**.

💡 **Political Representation:** As of 2025, women constitute approximately **13.6% of the Lok Sabha**, with **74 women** elected to the **18th Lok Sabha**, reflecting a slight dip from **14.4% in the 17th Lok Sabha (78 women)**.

✦ Despite this, **women's representation in local governance** remains robust, with nearly **46% of elected representatives** at the **Panchayati Raj Institutions** being women, supported by several **state-level provisions** for up to **50% reservation**.

✦ The landmark **Nari Shakti Vandan Adhiniyam (2023)** mandates a **33% reservation for women in Parliament and State Assemblies**, currently awaiting **implementation post-delimitation**.

✍ Increasingly, women politicians are influencing **policies on gender equality and social welfare**.

💡 **Health and Safety Improvements:** Key **health indicators** for women have improved, with the **maternal mortality rate** declining to **97 per 100,000 live births** and **institutional deliveries** reaching over **88%**.

✦ Enhanced access to **healthcare** and government programs focusing on **maternal and child health** have reduced **mortality and morbidity**, contributing to women's overall **empowerment and life quality**.

✍ **Maternal Support Schemes** like the **Pradhan Mantri Matru Vandana Yojana (PMMVY)** provide **financial assistance to pregnant and lactating women**, improving **maternal healthcare, nutrition, and overall quality of life**, thereby contributing significantly to **women's empowerment**.

💡 **Legal and Social Reforms:** Awareness and implementation of **laws against violence and discrimination** have strengthened.

✦ Laws like the **Protection of Women from Domestic Violence Act**, **Nirbhaya Act**, and

amendments to **sexual harassment laws** provide **legal support and deterrence**, although **enforcement gaps** remain.

✦ **Social campaigns** have further increased **reporting** and empowered women to seek **justice**, fostering **safer environments**.

💡 **Cultural and Societal Shifts:** Changing **societal attitudes, urbanisation, and media representation** have challenged traditional **patriarchal norms**. Women's increased visibility in various fields—**politics, business, sports, and entertainment**—and **civil society activism** contribute to shifting **mindsets**.

✦ Campaigns on **gender equality and women's rights** are slowly redefining **cultural expectations** and encouraging **self-confidence** among women.

✦ For example, in **cricket**, stars like **Smriti Mandhana** and **Harmanpreet Kaur** led India to its historic **T20I series win against England in 2025**, inspiring a new generation.

✦ **Olympic performances** by Indian women athletes elevate **national pride** and **gender equality** discussions. Prominent business leaders like **Falguni Nayar (Nykaa)**, **Roshni Nadar Malhotra (HCL Technologies)**, and **Shanti Ekambaram (Kotak Mahindra Bank)** are **trailblazers**, empowering **women entrepreneurs**.

✦ Political leaders like **Nirmala Sitharaman**, **Mamta Banerjee** and rising women's presence in **local governance** highlight this **transformative shift**, collectively **breaking stereotypes** and fostering **self-confidence** among women.

What are the Key Barriers Hindering the Progress of Women's Empowerment in India?

💡 **Labour Force Exclusion and Informalisation:** Women face **systemic exclusion** from **formal employment**, confining many to **low-wage informal work** or **unpaid domestic roles**.

✦ Over **90% of working women** are in the **informal sector**, lacking **social security** and

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career growth, while India's female labour force participation remains nearly half that of men and below the global average of 48.7%. This entrenches economic dependency and vulnerability.

- ✦ The feminisation of agriculture in India is a significant developmental trend, with women now constituting over 42% of the agricultural workforce in 2025, a 135% increase over the past decade.

💡 **Political Underrepresentation and Tokenism:** Women hold only about 14% of seats in Parliament (18th Lok Sabha), with even fewer in state legislatures.

- ✦ Political power is further diluted by practices like the "sarpanch-pati" system, where male relatives act on behalf of elected women.
- ✦ Though the Nari Shakti Vandan Adhiniyam 2023 promises 33% reservation, delays in implementation undermine genuine representation.

💡 **Health Inequality and Gendered Neglect:** Despite improvements, systemic health barriers persist. NFHS-5 reports 57% of women aged 15–49 are anaemic, contributing to poor physical well-being.

- ✦ Maternal malnutrition and inadequate preventive healthcare limit women's longevity and workforce productivity, impacting overall national development.

💡 **Educational Disparities and Skill Disconnect:** While enrollment has increased, learning outcome gaps, high dropout rates, and underrepresentation in STEM remain challenges.

- ✦ Gross Enrollment Ratio in higher education is only 28.5%, compounded by early marriages and inadequate support for women in technical/professional fields, perpetuating limited opportunity cycles.

💡 **Digital and Infrastructure Exclusion:** Digital access gaps, especially in rural areas, limit women's participation in education, employment, and financial services.

- ✦ The NSO survey reveals that 51.6% of women aged 15 years and above in rural areas do not

own a mobile phone, highlighting a significant digital gender divide.

- ✦ This limits women's access to education, financial inclusion, e-governance services, and employment opportunities, thereby hindering progress toward comprehensive empowerment.

- ✦ Also, the rise of digital platforms has introduced new forms of abuse, such as cyberbullying, online harassment, and doxing. This creates a pervasive chilling effect that restricts women's use of digital tools for education and employment, linking back to Digital Exclusion.

💡 **Socio-Cultural Patriarchy and Stereotypes:** Entrenched patriarchal norms restrict women's choices around education, careers, and personal freedoms.

- ✦ Harmful practices like child marriage (23.3% of women aged 20–24 married before 18) and dowry continue despite legal prohibitions, reinforced by gender biases that undervalue women's labour and agency.

- ✦ Moreover, women disproportionately shoulder unpaid care work, including household chores, child caregiving, and eldercare, resulting in chronic time poverty that limits their participation in education, employment, and public life.

- ✦ Critiques argue that instances of social vigilance highlight persistent patriarchal control over women. Events like the Miss Rishikesh pageant disruption, backlash in Rajasthan and Haryana, Sabarimala protests, and attacks on female cyclists reveal societal enforcement of restrictive norms. These underscore the need for cultural change, legal protection, and awareness campaigns for empowerment.

💡 **Gender-Based Violence and Safety Concerns:** With over 445,000 cases reported in 2022, crimes against women, including domestic violence, sexual assault, and dowry deaths, remain pervasive.

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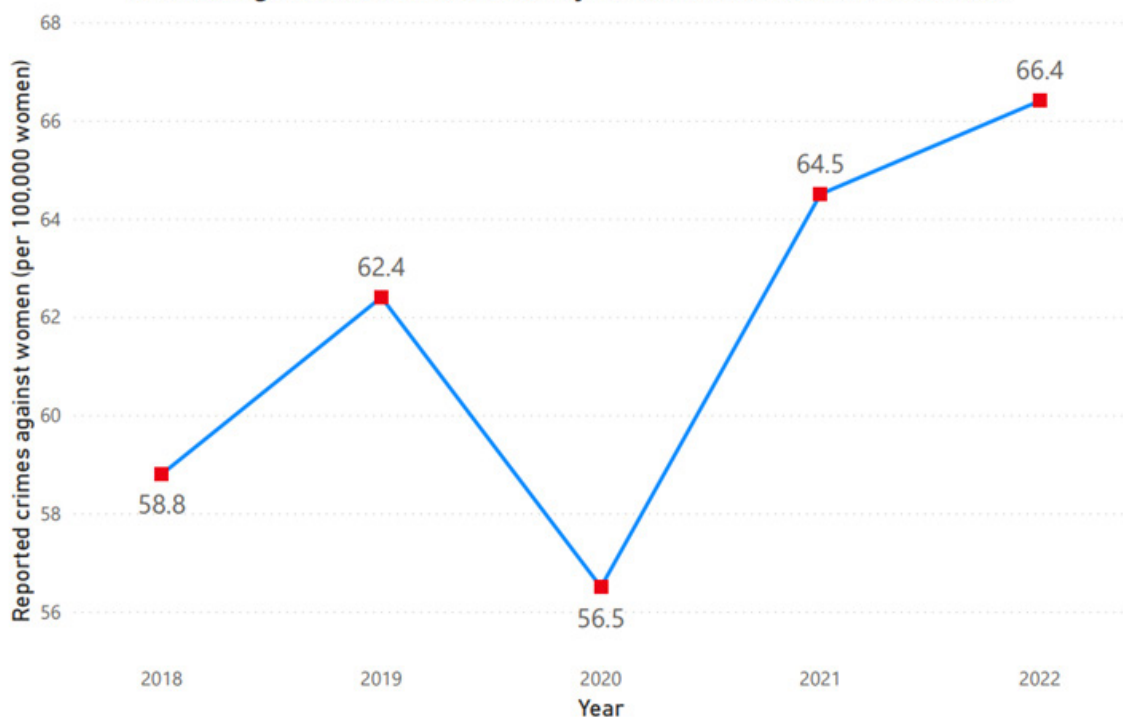


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- ✦ **Inadequate law enforcement and deep-rooted societal attitudes** hinder **effective protection**, instilling fear that affects women's **public participation** and **mobility**.

Violence against women increased by 12.9% from 2018 to 2022 in India



What are the Key Provisions & Initiatives Supporting Women's Empowerment in India?

💡 Legal/Constitutional Measures:

- ✦ **Article 14:** Equality before law; prohibits sex-based discrimination.
- ✦ **Article 15(3):** Permits special provisions for women and children.
- ✦ **Article 16:** Equal opportunities in public employment.
- ✦ **Article 39(d):** Equal pay for equal work.
- ✦ **Article 42:** Humane working conditions and maternity relief.

💡 Government Initiatives:

- ✦ **Pradhan Mantri Mudra Yojana:** Credit support for women entrepreneurs.
- ✦ **Beti Bachao Beti Padhao:** Promotes girls' education and welfare.
- ✦ **Mahila E-Haat:** Online platform for women-led businesses.
- ✦ **Mahila Shakti Kendra:** Village-level skill development programs.
- ✦ **Working Women Hostels & PM Awas Yojana:** Safe housing.
- ✦ **Maternity Benefit (Amendment) Act 2017:** 26 weeks paid maternity leave, crèche facilities.
- ✦ **Mission Shakti:** Aimed at strengthening interventions for women's safety, security and empowerment.
- ✦ **Drone Didis:** Promotes rural women's digital entrepreneurship and technology adoption.

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International Conventions/Agreements:

- ✦ **CEDAW (1980/1993):** End discrimination; ensure equal rights.
- ✦ **Beijing Declaration & Platform for Action (1995):** Economic participation and empowerment.
- ✦ **UN SDG 5:** Gender equality and women's empowerment by 2030.

Other Important Initiatives for Women Safety



What Measures can be Adopted to Further Strengthen Women's Empowerment in India?

- ✦ **Strengthen Legal Frameworks and Ensure Swift Justice:** Implement **fast-track courts** dedicated to crimes against women as recommended in the **Nirbhaya Committee report**.
 - ✦ Expand **One Stop Centres (OSCs)** under **Mission Shakti** for **integrated support services**—legal aid, medical help, counselling—with over **725 centres operational** across India as of 2025.
 - ✦ Improve **police sensitivity** through **gender-sensitisation training** and **accountability mechanisms**.
- ✦ **Promote Gender-Responsive Education:** Enhance **Beti Bachao Beti Padhao** outreach for improving **girl child enrollment** and **retention**.
 - ✦ Scale up **STEM scholarships** like those offered by the **Ministry of Women and Child Development** to increase **girl students** in **technical fields**, addressing the **STEM gender gap**.
 - ✦ Introduce **gender sensitisation modules** in **school curricula** nationwide.
- ✦ **Expand Women's Political Representation and Leadership:** Expedite the implementation of **Nari Shakti Vandan Adhiniyam 2023**, which mandates **33% reservation** for women in **Parliament** and **state assemblies**.
 - ✦ Develop **Model Women-Friendly Gram Panchayats initiative** (started **March 2025**) that trains **women leaders** in **governance** and builds **leadership capacity** at the **grassroots level**.
 - ✦ Promote **capacity-building programs** for women in **corporate boards** under **SEBI's rule** for **mandatory women directors**.
- ✦ **Ensure Comprehensive Healthcare Services for Women:** Leverage **digital health tools** like **Madhya Pradesh's SUMAN SAKHI chatbot** to provide **real-time support** to **expecting mothers**.
 - ✦ Strengthen **Janani Suraksha Yojana** and **PM Matru Vandana Yojana** by expanding **coverage** and **financial incentives** for **institutional deliveries** and **antenatal care**.
 - ✦ Address **anaemia** and **nutrition** through expanded **ICDS** and **Poshan Abhiyan** programs, prioritising **adolescent girls** and **pregnant women**.

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💡 **Enhance Digital Literacy and Financial Inclusion:** Expand **PMGDISHA's** digital literacy training (over 60 million trained as of 2025), focused on rural women, linked with skill development and employment.

- ✦ Support the **banking correspondents model** "Bank Sakhis" that empowers over 6,000 women to provide financial services locally.
- ✦ Increase financing of **women-led micro-enterprises** through Pradhan Mantri Mudra Yojana (68% of loans issued in 2024 were to women entrepreneurs).

💡 **Support Women in the Gig and Informal Economy:** Launch a **national social security code extension** to cover gig workers, with maternity benefits and health insurance, as recommended by the Code on Social Security.

- ✦ Empower **self-help groups** under Deendayal Antyodaya Yojana-NRLM, connecting 10 crore women in 9 million SHGs and providing microcredit access.
- ✦ Programs like **Lakshpati Didis** foster **digital entrepreneurship** among rural women, complementing initiatives such as **Stand-Up India**, which prioritises funding for **women-led enterprises**, enhancing financial independence and economic empowerment.

💡 **Develop Women-Centric Urban Infrastructure:** Build new "Sakhi Niwas" hostels for safe accommodations of working women in busy urban centres, launched under Mission Shakti 2024.

- ✦ Deploy **safer public transport solutions** with **women-only compartments** and **real-time monitoring systems**, piloted in Delhi and Mumbai.
- ✦ Increase the availability of **affordable childcare centres** aligned with the **National Creche Scheme** to reduce **time poverty** and support working mothers.

Conclusion:

As Jawaharlal Nehru famously noted, "To awaken the people, it is the women who must be awakened."

Once she is on the move, the family moves, the village moves, the nation moves." This underscores that **empowering women triggers transformative change** across society. To achieve true equality, **persistent barriers** must be addressed via **holistic policies, quality education, accessible healthcare, and robust infrastructure**. A sustained, **inclusive commitment** will enable women to become **equal architects of India's future**, driving both **social transformation and economic growth**.

Towards Fast, Fair, and Transparent Judiciary

*This editorial is based on "**Calling out the criticism of the Indian judiciary**" which was published in The Hindu on 07/07/2025. The article brings into picture the growing debate over India's judiciary being seen as a hurdle to development, while emphasizing that the real issue lies in systemic flaws across institutions. It argues that only coordinated reforms can align justice delivery with the nation's developmental goals.*

Tag: GS Paper - 2, Judiciary, Fundamental Rights, Judicial Review, Separation of Powers, Judgements & Cases

India's judiciary has increasingly found itself at the center of debates surrounding the nation's developmental trajectory, with prominent voices within policy circles identifying it as a **principal impediment to growth**. This criticism, while reflecting genuine concerns about judicial delays and procedural complexities, often presents an **incomplete picture of a deeply interconnected systemic challenge**. The courts operate within constraints largely shaped by legislative drafting, executive litigation practices, and chronic resource deficits, factors that lie beyond judicial control. While the need for judicial reform is undeniable, meaningful progress requires a comprehensive approach. Only through such coordinated institutional reform, can India build a legal system that truly serves both justice and development.

What are the Key Advancements Transforming the Indian Judiciary?

- 💡 **Robust Digital Transformation via e-Courts Project:** The implementation of the **e-Courts**

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Mission Mode Project Phase III is rapidly transforming justice delivery by leveraging technology for speed, accessibility, and transparency.

- ✦ This initiative is critical for transitioning to a **paperless, digitally-enabled court system**, streamlining judicial administration.
- ✦ The government allocated **₹7,210 crore** for e-Courts Phase III (2023-2027).
 - 📌 As of October, 2024, **Indian Virtual Courts had handled over 6 crore traffic challan cases across 21 states and Union Territories**, collecting over ₹649.81 crore in online fines.

💡 **Live-Streaming of Constitutional Bench Hearings:** The Supreme Court's decision to **live-stream proceedings**, particularly those involving constitutional matters, is a landmark step towards achieving true **judicial transparency and public scrutiny**.

- ✦ This allows citizens to witness court functioning, demystifying the process and enhancing accountability.
- ✦ Rules for **Live Streaming** were framed in 2022, with the Supreme Court emerging as a global leader by conducting over **7.54 lakh virtual hearings from March 2020 to June 2024**, facilitating open access to justice.

💡 **Expansion of Digital Infrastructure and Information Access:** The development of the **National Judicial Data Grid (NJDG)** and ancillary services has vastly improved information access for all stakeholders, making real-time case status and judgment data publicly available.

- ✦ This digital backbone is crucial for **data-driven decision-making** in judicial administration.
- ✦ NJDG covers **18,735 District and Subordinate Courts** and provides case status information for **over 21.99 crore cases**, alongside the **establishment of 1,814 eSewa Kendras** to bridge the digital divide for litigants.

💡 **Proactive Judicial Activism in Constitutional Rights:** The Supreme Court continues its tradition of **robust judicial activism**, expansively interpreting fundamental rights to protect marginalized groups

and uphold democratic values against legislative or executive inaction.

- ✦ This proactive role reinforces the judiciary as the ultimate **custodian of the Constitution**.
- ✦ Landmark rulings like **Navtej Singh Johar v. Union of India** decriminalized **Section 377 IPC**, and the **expansion of Article 21 (Right to Life)** to include the **right to dignity, health, and a clean environment** demonstrates this activism.

💡 **Prioritization of Alternative Dispute Resolution (ADR):** There's a strong institutional push to promote and formalize **ADR mechanisms** like mediation and arbitration, which are vital for **reducing the judicial backlog** and offering citizens faster, more cost-effective solutions for disputes.

- ✦ This strategy unburdens the formal court system from manageable cases. Legislative amendments like the **Commercial Courts Act, 2015**, made **Pre-Institution Mediation mandatory for commercial disputes**, with Lok Adalats resolving a high volume of cases, demonstrating a concerted effort to scale ADR.

📌 The **Mediation Act, 2023** is also a significant step in the right direction.

💡 **Legislative Measures to Decriminalize and Reduce Litigation:** The Executive and Legislature are engaging in key **legal reforms** to reduce the judicial burden from non-serious offenses and government-led litigation, acknowledging the judiciary's capacity constraints.

- ✦ This inter-branch coordination is essential for long-term systemic relief.
- ✦ The **Jan Vishwas (Amendment of Provisions) Act, 2023**, decriminalized **183 provisions** across **42 Central laws**, directly aimed at decreasing the inflow of minor cases into the courts.

What are the Major Challenges Confronting the Indian Judiciary?

💡 **Massive Case Pendency and Backlog:** The colossal **case backlog** represents the most visible failure,

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severely delaying justice delivery and violating the right to a speedy trial under **Article 21**.

- ✦ This systemic stress is compounded by a consistent inflow that perpetually outpaces the rate of case disposal.

- ✦ **Over 5 crore cases** are pending across all courts, including an all-time high of **88,417 cases** in the Supreme Court as of **September 2025**.

- ✦ This delay contributes to a high number of **undertrial prisoners**, constituting **76%** of the jail population.

- 💡 **Chronic Judicial Vacancies and Low Judge-to-Population Ratio:** A severe shortage of judges at all tiers critically **limits the court's functional capacity**, directly fueling the mounting backlog and overworking the sitting judges.

- ✦ This structural deficit undermines the constitutional goal of accessible justice for all citizens.

- ✦ According to the latest data from the Department of Justice, India's 25 High Courts have a combined sanctioned strength of 1,114 judges.

- ✦ As of now, **only 769 judges are in position**, leaving 345 posts, or over 30%, vacant.

- ✦ Subordinate courts alone face nearly **5,000 vacancies** against a **sanctioned strength of over 25,000**.

- 💡 **Lack of Transparency and Accountability in Appointments:** The **Collegium system's** **opaqueness** and delays in judicial appointments raise serious concerns about **accountability, favoritism, and meritocracy**, leading to the persistent allegation of an '**Uncle Judge Syndrome**.'

- ✦ The lack of clear, published criteria for selection dilutes public confidence in the integrity of the process.

- ✦ The absence of a statutory disciplinary mechanism means the '**In-House Procedure**' for misconduct is secretive and non-binding, evidenced by the fact that **women judges in High Courts stand at a mere 14.27% as of March 2025**, highlighting poor diversity.

- 💡 **Inadequate Judicial Infrastructure and Technology Adoption:** The **physical and technological infrastructure** in lower courts remains severely deficient, hindering efficiency and preventing the full utility of e-courts initiatives like **e-filing and video-conferencing**.

- ✦ This gap creates operational bottlenecks and slows down the judicial process.

- ✦ **Centre for Research and Planning of Supreme Court of India** in its 2023 report highlighted how there is an acute shortage of 4,200 courtrooms for judges across the country, while **e-Courts** projects still struggle with **poor connectivity** and inadequate equipment in many rural courts.

- 💡 **Over-Centralization and Selectivity in the Supreme Court:** The Supreme Court's role as both an apex constitutional court and a final court of appeal on routine matters leads to **over-centralization of workload**, causing critical delays in hearing urgent constitutional matters.

- ✦ The alleged **selective listing of cases** further compounds concerns over equitable access to the highest court.

- ✦ The Supreme Court's backlog hit a peak of **88,417 cases** in September 2025, with an institution rate of **7,080 cases** in August alone, drastically reducing the time for Constitution Bench hearings. (**28 main and 265 connected Constitution Bench matters are pending as of May 2025**)

- 💡 **Government as the Largest Litigator:** The **excessive litigation initiated by government bodies** places an enormous, often avoidable strain on judicial resources, consuming a significant portion of the courts' time and financial resources across all levels.

- ✦ **Government agencies are responsible for approximately 50% of all litigation in India**, with numerous cases tying up public revenue and stalling vital infrastructure projects.

- ✦ The amendment of laws like the **Jan Vishwas Act, 2023**, to **decriminalize provisions attempts to ease this burden**.

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What Measures can be Undertaken to Further Strengthen Indian Judiciary?

💡 **Institutionalizing a National Judicial Infrastructure Authority:** Establishing an independent authority with **statutory backing can ensure coordinated planning, financing, and maintenance of judicial infrastructure across all levels.**

- ✦ It would standardize digital and physical court facilities, ensuring parity between urban and rural jurisdictions.
- ✦ This institutional mechanism should work on **lifecycle-based infrastructure management rather than ad-hoc grants.**
 - 📎 It can integrate architecture, technology, and accessibility parameters into all court design frameworks.
 - 📎 Such an empowered body would **depoliticize infrastructure funding and promote long-term capacity building.**

💡 **Comprehensive Judicial Cadre and Human Resource Reform:** Creation of an **All India Judicial Service (AIJS)**, coupled with periodic performance audits, can enhance efficiency, uniform recruitment standards, and professionalism in the lower judiciary.

- ✦ Specialized service tracks for technology, research, and court management would complement traditional judicial roles.
- ✦ Continuous judicial education through structured training modules can upgrade capacity for complex, tech-driven cases.
 - 📎 **A transparent appraisal and transfer policy** will ensure accountability and motivation. This holistic HR ecosystem can modernize judicial functioning from the grassroots level.

💡 **Rationalizing Case Flow and Introducing Judicial Case Management Systems:** Implementing structured case-flow management with defined timeframes for each stage of litigation can drastically reduce pendency.

- ✦ Courts should adopt differentiated case-handling tracks, fast-track, regular, and complex, based on nature and urgency.

✦ **Integration of AI-assisted scheduling tools** can ensure optimal distribution of judicial time and equitable workload.

- 📎 Regular publication of case disposal metrics would enhance transparency. This move institutionalizes efficiency without compromising procedural fairness.

💡 **Strengthening the Collegium through Transparency and Institutional Accountability:** The appointment process must evolve towards greater transparency by publishing shortlists, evaluation parameters, and timelines.

- ✦ Introducing an independent secretariat to assist the Collegium can reduce delays and subjectivity.
- ✦ **A hybrid model involving a restructured National Judicial Commission with limited executive representation** can balance autonomy with accountability.

- 📎 Periodic diversity audits will ensure inclusion of women and marginalized communities. This reform will strengthen public trust while retaining judicial independence.

💡 **Institutionalizing Pre-Litigation Resolution Ecosystems:** Creating mandatory, tech-enabled pre-litigation mediation and conciliation platforms across districts can filter out non-serious cases.

- ✦ **Embedding legal aid clinics, mediation centers, and online dispute portals into Gram Nyayalayas** would democratize access to early resolution.
- ✦ Trained community mediators can resolve local disputes at source, reducing dependence on formal courts.

- 📎 **Incentivizing resolution through reduced fees and enforceable settlement certificates** will improve participation. This approach transforms dispute resolution into a multi-tiered ecosystem.

💡 **Judicial Federalism through Decentralized Benches:** Establishing **regional benches of the Supreme Court and circuit benches of High Courts** can improve access and reduce over-centralization in Delhi.

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✦ Such decentralization respects federal balance while easing litigant burden. Specialized benches for constitutional, commercial, and social justice cases will optimize judicial specialization.

✦ Enhanced geographical distribution ensures equitable access to apex justice. It will also decongest the Supreme Court docket and enhance focus on constitutional jurisprudence.

💡 **Strategic Litigation Management and Government Dispute Resolution Cells:** Institutionalizing litigation management units within ministries and public enterprises can minimize repetitive and frivolous government litigation.

✦ Pre-clearance mechanisms before filing appeals would ensure that only policy-significant cases reach courts.

✦ **Regular inter-departmental coordination meetings** can resolve inter-agency disputes outside courtrooms.

✦ Use of technology dashboards can track case status and accountability for delay. This proactive litigation governance will **convert the government from a “compulsive litigator” to a “responsible disputant.”**

💡 **Mainstreaming Judicial Ethics and Accountability Framework:** Adopting a codified **Judicial Standards and Accountability Code** can enhance integrity and consistency in conduct.

✦ Mandatory declaration of assets, recusal norms, and conflict-of-interest guidelines can fortify public trust.

✦ An independent **Judicial Ethics Commission** can be constituted for inquiry into misconduct allegations without impinging on judicial independence.

💡 **Periodic sensitization on gender, diversity, and constitutional morality** will humanize adjudication. Institutionalized ethics will anchor judicial credibility.

✦ **Bangalore Principles** outline six core values for judges: **Independence, Impartiality, Integrity, Propriety, Equality, and Competence and Diligence.**

💡 It provides a framework for regulating judicial conduct to ensure fairness, public confidence, and the proper administration of justice

💡 **Enhancing Citizen-Centric Justice and Legal Empowerment:** Justice delivery must become more participatory and user-friendly through multilingual digital portals, simplified court procedures, and legal literacy drives.

✦ Integration of legal aid services with technology can empower marginalized citizens to navigate the system effectively.

✦ Court communication units should provide accessible updates to litigants on case status and next steps.

💡 A citizen feedback framework on service quality can guide future reforms. This participatory orientation will convert the judiciary from an institution of access to one of inclusion.

Conclusion:

The Indian judiciary is embracing reforms that blend technology, transparency, and efficiency to serve justice better. Strengthening infrastructure, human resources, and decentralized mechanisms can tackle systemic challenges effectively. True progress requires balancing speed, fairness, and inclusivity. **“A strong judiciary builds not only verdicts, but also the confidence of a nation.”**

Towards Environmental Justice in India

This editorial is based on **“A verdict that misses the fine print,”** which was published in *The Hindu* on 09/10/2025. The article discusses the Supreme Court’s 2025 ruling declaring post-facto environmental clearances illegal, the resulting legal and socio-economic confusion, and the need for a balanced compliance approach that protects the environment without harming livelihoods.

Tag: GS Paper 3, Environmental Pollution & Degradation, Environmental Impact Assessment (EIA), Sustainable Development, Climate Change

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India's **environmental justice framework** faces a **watershed moment** after the **Supreme Court's 2025 ruling** outlawing **post-facto clearances** for **projects** built without **prior approval**. While upholding **ecological accountability**, the **verdict** has unleashed uncertainty, risks of **mass demolitions**, and **economic disruption**. From **coastal regulation ambiguities** to **livelihood threats**, the challenge lies in balancing **strict environmental compliance** with **sustainable development**, ensuring that the **protection of nature** does not come at the cost of **societal** and **economic stability**.

What is Environmental Justice and Its Framework in India?

💡 **About: Environmental justice** refers to the principle that **all individuals and communities, regardless of socio-economic status, caste, or location, have the right to a healthy, safe, and sustainable environment**.

- ✦ It ensures **equitable distribution of environmental benefits and burdens**.
- ✦ It promotes **accountability of polluters**, access to environmental decision-making, and protection of vulnerable populations.
- ✦ It aligns with **sustainable development**, balancing ecological protection with human and economic well-being.

💡 **Constitutional Provisions:**

- ✦ **Article 21 – Right to Life:** Includes the right to a healthy environment; courts have expanded this to environmental protection.
- ✦ **Article 48A – Directive Principle:** Mandates the state to protect and improve the environment and safeguard forests and wildlife.
- ✦ **Article 51A(g) – Fundamental Duties:** Obligates citizens to protect the environment.

💡 **Key Environmental Laws:**

- ✦ **Environment (Protection) Act, 1986:** Provides overarching powers to the central government to protect and improve environmental quality.
- ✦ **Water (Prevention and Control of Pollution) Act, 1974:** Regulates water pollution and establishes State Pollution Control Boards.

- ✦ **Air (Prevention and Control of Pollution) Act, 1981:** Addresses air pollution and empowers regulatory authorities.
- ✦ **Forest Conservation Act, 1980:** Regulates diversion of forest land for non-forest purposes.
- ✦ **Wildlife Protection Act, 1972:** Protects wildlife and habitats.
- ✦ **Coastal Regulation Zone (CRZ) Notification, 2011:** Regulates development in coastal areas.
- ✦ **EIA Notification, 2006:** Mandates Environmental Clearance (EC) for developmental projects.

💡 **Regulatory and Institutional Mechanisms:**

- ✦ **Ministry of Environment, Forest and Climate Change (MoEFCC):** Formulates policies, grants ECs, and oversees environmental compliance.
- ✦ **Central and State Pollution Control Boards:** Monitor air and water pollution, enforce regulations.
- ✦ **National Green Tribunal (NGT):** Specialised judicial body for the speedy resolution of environmental disputes and the enforcement of environmental laws.

💡 **Judicial Interventions:**

- ✦ **Public Interest Litigation (PIL):** Citizens can approach courts for environmental protection.
- ✦ **Landmark Cases:**
 - 📎 **MC Mehta v. Union of India (1986 & subsequent rulings)**– The Supreme Court explicitly recognised the **“Polluter Pays Principle”** and the **“Precautionary Principle”** as key tenets of environmental jurisprudence in India.
 - 📎 **T.N. Godavarman Thirumulpad v. Union of India (1995)** – The Supreme Court directed states and central agencies to conserve forests, protect biodiversity, and maintain ecological balance.
 - 📎 **S.P. Muthuraman v. Union of India (2025)** – In this recent Supreme Court ruling, the Court categorically banned post-facto environmental clearances, reinforcing

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that no developmental project can receive retrospective EC to bypass environmental safeguards.

What are the Key Factors Driving the Growth of Environmental Justice in India?

💡 **Legal and Constitutional Safeguards:** The Supreme Court of India has expansively interpreted Article 21 (Right to Life) to include the right to a clean environment.

✦ Similarly, the 2025 judgment outlawing post-facto environmental clearances upholds environmental accountability.

✦ The NGT has enforced strict compliance with environmental laws, ensuring that the Environmental Impact Assessment (EIA) process is followed.

📌 Between 2010 and 2021, the NGT disposed of 33,619 out of 35,963 cases, demonstrating efficiency despite resource constraints.

✦ Analysis of 12,615 environmental court cases in India reveals that approximately 35% of rulings are favourable to the environment, with significant variations across courts and case types.

✦ Environmental Public Interest Litigations (PILs) have led to landmark judgments mandating pollution control in cities like Delhi.

💡 **Climate Justice and India's Global Advocacy:** India's leadership in COP 28 and its "common but differentiated responsibilities" principle highlights the focus on climate justice.

✦ India has surpassed 50% non-fossil installed capacity and achieved its conditional NDC target (50% by 2030) well ahead of schedule and committed to net zero by 2070, ensuring fairness in emission responsibilities.

✦ Participation in the International Solar Alliance facilitates renewable energy adoption in developing countries.

✦ India urges developed nations to fulfil the annual climate finance commitment under the UNFCCC, supporting vulnerable sectors.

📌 As of 2025, at UNFCCC COP29 in Baku, Azerbaijan, developed countries agreed on a New Collective Quantified Goal (NCQG) for climate finance, setting a target of at least USD 300 billion per year by 2035 to support climate action in developing countries.

📌 South-South cooperation through alliances like the Coalition for Disaster Resilient Infrastructure helps transfer green technologies equitably.

💡 **Focus on Vulnerable and Marginalised Communities:** Environmental degradation impacts marginalised communities disproportionately.

✦ The Fifth Schedule and Sixth Schedule provisions of the Indian Constitution protect tribal populations by granting autonomy and safeguarding their land, forest resources, and cultural identity.

✦ Forest Rights Act (FRA), 2006 protects the land, forest resources, and cultural rights of tribal communities and forest dwellers, ensuring legal recognition and autonomy over their traditional territories.

✦ Indigenous communities' efforts, such as the Save Mahan campaign in Madhya Pradesh, used radio to mobilise resistance against destructive coal mining, exhibiting grassroots environmental justice activism.

💡 **Public Participation and Inclusive Governance:** Initiatives like the government's LiFE (Lifestyle for Environment) campaign encourage eco-friendly individual behaviour, while large-scale plantation drives have planted 70 lakh trees in Delhi since 2023.

✦ Women's environmental leadership in forest councils has led to natural resource restoration, e.g., the 2003 revival of the Mesar Kund reservoir by women in Uttarakhand's Sarmoli-Jainti Van Panchayat.

💡 **Equitable Policy Formulation and Implementation:** Policies such as PM-KUSUM (solar pumps for farmers), and the National Adaptation Fund for Climate Change ensure access to sustainable

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technology and financial aid for marginalised groups.

- ✦ The participatory design of State Action Plans mainstreams climate adaptation with social justice.

💡 **Technological and Analytical Advances for Accountability:** AI-assisted analysis of environmental court rulings supports more effective monitoring, showing varied judicial support across regions, informing policy and public advocacy.

- ✦ Use of GIS and digital environmental audits is improving transparency and rapid response, as seen through the Environment Audit Rules (2025) which require third-party verification.

What are the Significant Challenges in Advancing Environmental Justice in India?

💡 **Weak Enforcement and Regulatory Capacity:** Many projects proceed without proper Environmental Impact Assessments (EIA) or disregard clearance conditions due to weak State Pollution Control Boards (SPCBs) and monitoring bodies.

- ✦ The Supreme Court in *MC Mehta v. Union of India (2024)* noted more than 60% vacancy rates in some SPCBs, crippling enforcement.

💡 **Dilution of Public Participation and Transparency:** The 2020 EIA draft notification exempted significant sectors from public hearings and allowed ex post facto clearances, diluting environmental democracy.

- ✦ Judicial rulings have condemned such post-facto clearances as “anathema” to environmental jurisprudence.
- ✦ Similarly, the Forest Conservation (Amendment) Act, 2023 expanded exemptions for infrastructure and defense projects on forest land, raising concerns over forest and tribal rights; the Supreme Court barred its implementation without compensatory afforestation and safeguards.

💡 **Overlapping Institutional Mandates and Judicial Delays:** Overlapping roles of NGT, CPCB, SPCBs,

and environmental authorities cause jurisdictional confusion and delays.

- ✦ The NGT operates with fewer judicial and expert members than mandated, slowing case resolution.

💡 **Environmental Degradation Exacerbated by Unsustainable Growth:** Rapid urbanisation and industrialisation have worsened air and water pollution; Delhi, Mumbai, and Kolkata suffer hazardous air quality due to vehicle emissions, construction dust, and stubble burning.

- ✦ As per CPCB’s 2022 report, there are 311 polluted river stretches across 279 rivers in India.

💡 **Climate Vulnerability and Ecological Fragility:** A University of Leeds study found that Himalayan glaciers have lost about 40% of their area over the last 400–700 years, with ice melting in recent decades occurring ten times faster than the historical average, threatening freshwater availability.

- ✦ Climate-related disasters in India have increasingly impacted millions of people and caused over \$120 billion in damages since 2000, highlighting the urgent need for robust climate adaptation and mitigation strategies.

💡 **Social and Environmental Inequities:** Marginalised groups such as Adivasis, small farmers, and urban poor disproportionately bear the brunt of environmental harms but often lack meaningful participation in decision-making.

- ✦ Land acquisition disputes and displacement from development projects fuel social unrest, especially in tribal areas.
- ✦ For example, in Odisha’s Niyamgiri Hills, Vedanta’s bauxite mining plans displaced tribal communities who fiercely resisted to protect their sacred land.
- ✦ Large dam projects like the Sardar Sarovar and Polavaram have submerged thousands of tribal villages, while infrastructure corridors cut across tribal heartlands, exacerbating dispossession.

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💡 **Lack of Comprehensive Climate-Inclusive Environmental Policies:** EIA processes often fail to integrate climate change considerations (carbon footprint, resilience), limiting sustainable development foresight.

- ✦ **Renewable energy adoption** is growing but coal still provides about **70% of electricity generation in India**, complicating mitigation efforts.
- ✦ The **carbon market in India** is yet to be fully operational and that too only to specific sectors.

What Comprehensive Measures Can be Undertaken to Strengthen Environmental Justice in India?

💡 **Make Environmental Rights Fundamental and Enforceable:** States must explicitly recognise and implement the **right to a clean and healthy environment** as a fundamental right, as affirmed by the Supreme Court.

- ✦ **Legislative action** is needed to codify climate justice principles—such as **intergenerational equity** and **polluter accountability**, into law.
- ✦ Drawing inspiration from countries like **Kenya** and the **UK**, with dedicated **climate laws**, can guide **India's national climate legislation**.

💡 **Revamp and Enforce Rigorous Environmental Impact Assessments (EIA):** The EIA process must be **non-negotiable** and **inclusive**, ensuring all projects—**industrial, educational, or infrastructure**, undergo **full impact evaluation** with **mandatory public consultations**.

- ✦ **Systems like PARIVESH** should be strengthened with better **rural internet connectivity** and **transparency** to prevent **loopholes** and **retrospective clearances**.

💡 **Enhance Institutional Coordination and Governance:** India requires a **high-level, cross-ministerial climate authority** to harmonise efforts across **environment, energy, urban, and industry ministries**, thus reducing **fragmentation** and promoting coherent **climate justice policies**.

✦ This **body**, potentially under the **Prime Minister's Office**, should oversee **policy design, implementation, and compliance monitoring**.

💡 **Utilise Advanced Technology and Environmental Audits:** Integrate **AI, IoT sensors, satellite monitoring**, and **third-party audits** mandated by the **Environment Audit Rules, 2025**, to detect violations early.

- ✦ **AI-supported analytics** help **courts and policymakers** identify **enforcement gaps** and **direct resources** effectively.
- ✦ **Real-time data dashboards** for **air, water, and soil quality** will empower both **regulators and communities**.

💡 **Institutionalise Inclusive and Participatory Approaches:** **Marginalised communities—tribals, farmers, urban poor—**must be prioritised in **decision-making** through **formal mechanisms** and **empowerment programs**.

- ✦ Initiatives like the **Van Dhan Vikas Kendras** exemplify integrating **livelihood** and **conservation objectives**.
- ✦ Strengthening **environmental democracy** helps address **socio-environmental inequities** and fosters **resilience**.

💡 **Accelerate Renewable Energy and Just Transition Frameworks:** India should expand **financial and policy incentives** for **decentralised clean energy—solar pumps, biomass, microgrids—**especially in **vulnerable rural areas**.

- ✦ **Phasing out coal dependency** must be coupled with **social safety nets, retraining, and job creation** for **coal workers in Jharkhand, Odisha, and Chhattisgarh** to ensure a **just transition**.

💡 **Align Domestic Policies with International Climate Norms:** India must fully implement **commitments** under the **Paris Agreement** and leverage **global platforms** like the **International Solar Alliance** to secure **climate finance, technology transfer, and collaborative adaptation strategies**.

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- ✦ The Green Mandate 2025 agenda should institutionalise Environmental, Social, and Governance (ESG) principles, reflecting global best practices.

Conclusion:

India's pursuit of environmental justice aligns deeply with several Sustainable Development Goals (SDGs), emphasising the integration of ecological sustainability and social equity. India's evolving environmental governance strives to fulfil SDG 6 (Clean Water and Sanitation), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 16 (Peace, Justice, and Strong Institutions). Moving forward, inclusive governance, stringent enforcement, and climate-resilient policies are essential to achieve a just, sustainable future, leaving no one behind.

The Roadmap for Demographic Mission in India

This editorial is based on "The real need is a holistic demographic mission," which was published in *The Hindu* on 11/10/2025. The article argues that India's proposed Demography Mission must move beyond tracking immigration to adopt a holistic approach that addresses regional inequalities, migration rights, ageing, and human capability development for inclusive and sustainable population planning.

Tag: GS Paper 1, Population and Associated Issues, Demographics, GS Paper 2, Issues Relating to Development, Human Resource.

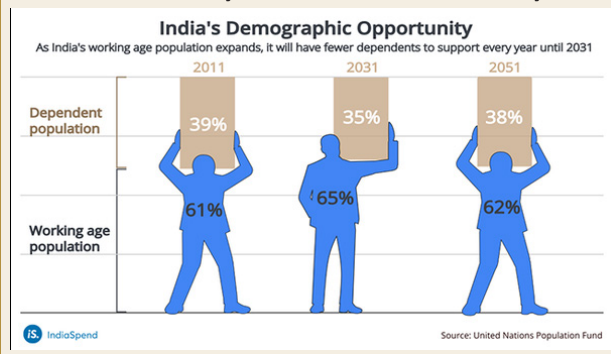
India stands at a demographic crossroads as the world's most populous nation with immense youth potential but deep regional and social imbalances. The recent announcement of a Demography Mission has reignited debate on how population data can guide inclusive development. Beyond counting numbers, India must address unequal opportunities, migration rights, and ageing to transform demographic insights into a blueprint for equitable growth and sustainable national progress.

What is India's Proposed Demographic Mission?

💡 **About:** The Demographic Mission (announced on August 15, 2025, by the Indian government) is a comprehensive national initiative tasked with monitoring, managing, and interpreting the country's complex demographic transitions.

💡 **Core Objectives of the Demography Mission:**

- ✦ Counter illegal immigration that undermines national integrity and internal security.
- ✦ Prevent demographic imbalances that could alter regional and cultural identities.
- ✦ Safeguard livelihoods and rights of vulnerable groups, including tribal and backward communities.
- ✦ Assess the socio-economic and cultural impact of migration on public resources, welfare systems, and border stability.



What is the Need of the Demographic Mission?

- 💡 **Unchecked Immigration and Border Security:** Unchecked undocumented immigration, especially from Bangladesh, alters regional identities and strains border region resources.
 - ✦ For instance, Assam, West Bengal, and Northeast India have seen demographic shifts due to significant cross-border flows, with local outcry over cultural and resource implications.
- 💡 **Internal Migration:** Internal migration is at an all-time high, fueling urban growth and redistributing labour. Over 45 crore (450 million) Indians are estimated to be migrants nationwide.
 - ✦ However, migrants face disenfranchisement, loss of welfare access, and identity struggles.

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✦ Migrants face **social exclusion**, **identity crises**, and a **lack of political representation**.

💡 **Youth Bulge and Human Capital Potential:** India is now the **world's most populous nation**, with a **median age of just 29 years**.

✦ This vast **youth population** offers both a **demographic dividend** and a **risk** if their **potential** is not realised.

💡 **Ageing and Longevity:** **Life expectancy** has increased significantly, from **63 years (2000)** to over **72 years (2025)**.

✦ By **2050**, India's **elderly (60+)** will rise to over **320 million**, up from **154 million in 2025**.

✦ This raises urgent questions about **social security**, **productive ageing**, and **rethinking retirement norms**.

💡 **Policy Myopia:** Traditional focus on **population numbers** and **per capita indicators** ignores **composition**, **age structure**, and **capability inequalities**.

✦ A **holistic mission** advocates for **mainstreaming demographic sensitivity** across all policy, **education**, **urbanisation**, **health**, **social welfare**, and more, core to **inclusive national planning**.

💡 **Technological Integration in Demographic Governance:** There is a need to leverage **AI-based surveillance**, **biometric data**, and **big-data platforms** for **real-time monitoring** and **predictive planning**.

✦ **Institutional reforms** include a **National Refugee Law**, **NRC**, and **federal demographic councils**, showing a shift to **data-driven governance** and **region-specific strategies**.

What are the Key Challenges Surrounding India's Current Demographic Trends?

💡 **Border Management Deficiencies:** India's borders with **Bangladesh (4,096 km)** and **Myanmar (1,643 km)** face significant **management weaknesses**, affecting **national security**.

✦ Along the **India-Bangladesh border in West Bengal (2,216.7 km)**, only **1,647.7 km** is **fenced**, leaving **~569 km unfenced** due to land

acquisition issues and **state-level non-cooperation**.

✦ The **India-Myanmar border** has less than **2% fencing**, with **challenging terrain** and **insurgent presence** impeding **surveillance**.

✦ **Coordination among security agencies** remains **fragmented**, and **border infrastructure** like **roads and outposts** suffers from **funding and administrative bottlenecks**.

✦ These gaps facilitate **illegal immigration**, **cattle smuggling**, **narcotics trade**, and **insurgent activities**.

💡 **Political Sensitivities Around Migration and Identity:** The **Demographic Mission** was announced partly to address **undocumented immigration from Bangladesh**, sparking debates on **security and inclusivity**.

✦ **Border states** like **Assam** and **West Bengal** report **social tensions** from **migration-driven demographic shifts**.

✦ Balancing **national integrity** with **humane migration policies** is a delicate challenge.

💡 **Issue of Regional Fertility Duality and Inequality:** India exhibits stark **regional disparities** in **fertility and human capital indicators** that complicate **uniform policy formulation** and **resource distribution**.

✦ States like **Bihar**, **Jharkhand**, and **Uttar Pradesh** continue to have **high fertility rates**. **Bihar's Total Fertility Rate (TFR)** stands at around **2.8 to 3.0**, well above the **replacement level of 2.1**, while states like **Kerala**, **Delhi**, and **Tamil Nadu** record **TFRs below replacement**, some as low as **1.2**.

✦ This disparity is fueled by contrasting **socio-economic factors** such as **education** and **poverty** such as **Kerala's literacy rate exceeds 96%**, boosting **women's empowerment** and **reproductive choices**, whereas **Bihar's literacy rate lags below 70%**, correlating with higher fertility and limited access to **family planning**.

✍ These disparities also complicate **resource allocation**, affecting **Finance Commission devolution** and **equitable development**.

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- ✦ Higher fertility in **poorer, less literate states** strains **health infrastructure** and **economic progress**, perpetuating **inequality**, while **low-fertility states** face challenges of **ageing populations** and **workforce decline**.
- 💡 **Limited Social Security:** India's **elderly population (60+)** is projected to rise from **154 million in 2025** to over **320 million by 2050**, yet **formal pension coverage is minimal**, leaving many dependent on family or personal savings.
 - ✦ **Multi-pillar social security systems**, which integrate **government, employer, and individual contributions**, are largely underdeveloped.
 - ✦ Informal sector workers (constituting ~90% of total employment) lack **pension, health insurance, or unemployment benefits**, creating vulnerability to economic shocks.
- 💡 **Youth Employment Crisis and Skill Mismatch:** Although India has a **vibrant youthful population**, **83% of the unemployed population in 2022 were youth**.
 - ✦ Only around **42-45% of graduates** are considered **job-ready**, and **informal sector employment** dominates with **low wages** and **insecurity**.
 - ✦ **Skill India Mission** attempts to bridge this gap, but **uneven quality** and **access across regions** remain barriers.
- 💡 **Gender Disparities:** **Female labour force participation** is low at **41.7% overall**, with **urban participation lagging** significantly.
 - ✦ **Gender norms and caregiving burdens** affect **reproductive decisions** and **workforce inclusion**.
 - ✦ Programs like **Beti Bachao Beti Padhao** and **NAMO Drone Didi** work toward **women's empowerment** but require scaling.
- 💡 **Strain on Resources and Environment:** India occupies just **2.4% of the world's land** but supports nearly **18% of the global population**, creating intense **pressure on natural resources** like **water and land**.
 - ✦ **Rapid urbanization** and **agricultural expansion** have caused **deforestation** and **loss of fertile**

land, while **climate vulnerabilities** such as **floods and droughts** threaten **livelihoods** and **sustainability**.

- ✦ **Uncontrolled immigration** further increases demand on scarce resources, and **inflation** raises the cost of essentials, exacerbating challenges in **access** and **investment** for **sustainable resource management**.

What are the Key Government Initiatives for Harnessing India's Demographic Dividend?

- 💡 **Skill India Mission:** The scheme aims to **skill, reskill, and upskill India's youth** by providing **industry-relevant training** through a **wide network of centers and programs**.
- 💡 **PM Kaushal Vikas Yojana (PMKVY):** Provides **short-term, industry-relevant skill training**, boosting workforce readiness in **manufacturing, IT, and services**.
- 💡 **Startup India & Mudra Yojana:** Promotes **entrepreneurship** and **access to credit** for **micro and small enterprises**, creating jobs and harnessing **youth innovation**.
- 💡 **Make in India:** Positions India as a **global manufacturing hub**, generating **mass employment** to absorb the growing workforce.
- 💡 **Ayushman Bharat:** Health insurance for **over 41 crore families**. Improving **demographic health outcomes** is crucial for **productivity**.
- 💡 **One Nation One Ration Card:** Ensures **welfare portability** for **migrants**, supporting **internal migration** and **urban workforce sustainability**.
- 💡 **New Education Policy (NEP) 2020:** Reforms **quality education**, building **human capital** to maximise demographic potential.
- 💡 **Digital India:** Enhances **digital literacy** and **infrastructure**, enabling youth access to **education, government schemes, and gig economy opportunities**.

What Measures Can Be Adopted for India's Holistic Demographic Future?

- 💡 **National Demographic Intelligence Framework:** Link and integrate **datasets** from **Census, NFHS,**

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Labour Bureau, and Aadhaar to create real-time, granular demographic monitoring.

- ✦ Enables **data-driven policy targeting, migration management, and resource allocation.**
- ✦ Proposal for digitised and **AI-based Census 2027**, using satellite and biometric data for accuracy, is a significant step in the right direction.

💡 **Border Management and Immigrant Crisis Handling:** Strengthen **border security** by enhancing **surveillance, fencing, and inter-agency coordination** along **porous borders** with **Bangladesh and Myanmar** to control **illegal immigration and trafficking.**

- ✦ However, simultaneously formulates policies for **humane migrant treatment**, enforcing **legal migration frameworks**, and establishing **crisis management mechanisms** for **migrant inflows.**
- ✦ The use of **sensor-based monitoring systems, night-vision cameras, motion sensors, and drones** (such as **Nishant, Ghatak, Rustom**) will provide **real-time surveillance and situational awareness.**
- ✦ **Ensuring Comprehensive Integrated Border Management Systems (CIBMS)** will integrate **manpower, sensors, intelligence, and command control** to enable **swift and coordinated responses.**

💡 **Skill Development and Youth Employability Enhancement:** Scale **Skill India's mission** reach, emphasising **vocational training** in **backward regions** to close **capability gaps.**

- ✦ Collaborate with **industry** for **job-ready curricula and apprenticeships.**
- ✦ India added over **17 crore formal jobs** in six years till 2024; **robust skilling** is critical to sustain growth.

💡 **Regional Equity in Education, Health, and Infrastructure:** Implement **state-wise Human Capability Indices** to identify **lagging regions.**

- ✦ Direct resources to **rural and backward areas**, improving **literacy and healthcare.**
- ✦ **Kerala's exemplary literacy and health outcomes** provide a model for **targeted investment.**

💡 **Migration Policy Reform and Portability of Rights:** Expand **welfare portability schemes** like **"One Nation One Ration Card"** for **migrants.**

- ✦ **Legal framework** for **political representation** (remote voting) and **social security.**
- ✦ Ensure **humane management** of **undocumented migration** without compromising **rights.**

💡 **Ageing and Social Security Overhaul:** Develop **multi-pillar pension systems** integrating **government, employer, and individual contributions.**

- ✦ Promote **lifelong learning** and **flexible retirement.**
- ✦ Prepare **healthcare infrastructure** for the projected **elderly population of 320 million by 2050.**

💡 **Institutional Reform and Federal Cooperation:** Establish a **High-Powered National Commission for Demography and Migration** to coordinate **policy** across **centre and states.**

- ✦ Foster **demographic sensitisation** among **policymakers** to embed **population data** in all **planning sectors.**
- ✦ Coordination in the **Clean Ganga Mission** and **state-level urban development plans.**

💡 **Environmental and Urban Sustainability Integration:** Link **demographic plans** with **urban resilience strategies, water body revival, and pollution control.**

- ✦ India can integrate **demographic plans** with **urban sustainability** through flagship initiatives like the **Smart Cities Mission** and **AMRUT**, which promote **energy-efficient infrastructure, urban water body restoration, AI-driven pollution control, and nature-based solutions**, enhancing **urban resilience** and **citizen well-being.**

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Conclusion:

India's **demographic mission** is a defining opportunity to shape its **destiny** by harnessing **youth potential**, bridging **inequalities**, embracing **migration**, and planning for **ageing populations**. As sociologist **Auguste Comte** said, "**Demography is destiny**." The meaningful way forward lies in **institutional reforms**, **technology adoption**, and **citizen participation** to ensure India's **demographic diversity** translates into **equitable**, **resilient**, and **future-ready growth** for all generations.

Strengthening India-Afghanistan Ties

This editorial is based on "Talking to Taliban: On India-Afghanistan ties," which was published in The Hindu on 14/10/2025. The article examines India's measured engagement with the Taliban through the visit of Afghanistan's Acting Foreign Minister, weighing strategic, security, and humanitarian priorities alongside ethical and regional diplomatic considerations.

Tag: GS Paper 2, India and its Neighbourhood, Groupings & Agreements Involving India and/or Affecting India's Interests, Effect of Policies and Politics of Countries on India's Interests

India's **diplomatic engagement** with the **Taliban** marks a critical juncture in **regional geopolitics**. The visit of Afghanistan's **Acting Foreign Minister** signals New Delhi's **pragmatic approach** to safeguarding **strategic interests**, **security**, and **humanitarian commitments**, even as **ethical dilemmas** and **historical mistrust** loom large. Balancing the need for **regional stability**, protection of **investments**, and **human rights advocacy** presents a complex challenge, testing India's capacity for **nuanced diplomacy** in a volatile and rapidly evolving **South Asian landscape**.

What are the Recent Developments in India-Afghanistan Relations?

- 🔦 **Direct Diplomatic Engagement with the Taliban-led Government:** The visit of Afghan Acting Foreign Minister **Amir Khan Muttaqi** marked the first direct **diplomatic engagement** with the **Taliban-led government** since 2021, signalling **thawing ties** and enhanced **dialogue**.

- ✦ The **UN Security Council's Sanctions Committee** lifted **travel restrictions** on **Muttaqi**, enabling his **visit**, indicating **international diplomatic accommodation**.

- 🔦 **Upgrade of Indian Mission in Kabul:** India and Afghanistan agreed on mutual exchanges of **diplomats**, facilitating continuous **diplomatic communication**.

- ✦ Transition from a **technical mission** to a **full-fledged embassy** demonstrates India's intent to **deepen diplomatic presence** and **official recognition steps**.

- 🔦 **Commitments on Sovereignty and Security:** Both nations affirmed **respect for sovereignty** and **territorial integrity**, with Afghanistan pledging not to permit **use of its soil against India**, a crucial **security reassurance**.

- 🔦 **Enhanced Trade Relations:** Both governments are committed to **boosting bilateral trade**, aiming to **rejuvenate economic ties** despite political uncertainties.

- ✦ Both sides welcomed the **commencement of the India-Afghanistan Air Freight Corridor**, which will further enhance direct trade and commerce between the two countries.

- 🔦 **Humanitarian and Development Initiatives:** India announced **infrastructure projects**, including **hospital construction** and extended **humanitarian aid**, reflecting **soft power** and **developmental diplomacy**.

- ✦ India expressed willingness to assist the Afghan government in **reconstructing residential buildings** in **earthquake-affected areas**.



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What is the Significance of India-Afghanistan Relations?

- 💡 **Strategic Geopolitical Partnership:** India considers Afghanistan vital for **regional security** and countering adversarial influence, particularly **Pakistan's**.
 - ✦ Deterioration in **Afghan-Pakistan relations** influenced India's **strategic calculus** for engaging the **Taliban** as a **counterbalance** to Pakistan's **regional influence**
 - ✦ India's support for the **Northern Alliance** in the 1990s and its role as one of Afghanistan's **largest regional development partners** showcase a long-term **strategic commitment**.
- 💡 **Counterterrorism Collaboration:** Post-2001, India actively engaged in **capacity building** of Afghan security forces to prevent Afghanistan from becoming a **terror hub**.
 - ✦ The recent pledge by the **Taliban-led Afghan government** not to allow the use of Afghan soil against India marks evolving **counterterrorism cooperation** amid shifting realities.
- 💡 **Development and Reconstruction Contributions:** India has invested heavily in **infrastructure projects**: **Salma Dam**, Zaranj-Delaram highway (strategic trade route bypassing Pakistan), Kabul's parliament building, hospitals, and power substations, showing India's commitment to **Afghan development** as a form of **soft power**.
 - ✦ Initiatives such as **humanitarian assistance during droughts and COVID-19** exemplify India's commitment to Afghan development.
- 💡 **Economic and Trade Connectivity:** With Afghanistan's **mineral wealth** valued between \$1-3 trillion, India sees **economic opportunities** in mining and trade.
 - ✦ Enables India to participate in regional forums and infrastructure projects such as **Chabahar Port** (Iran-Afghanistan-India corridor) to bypass Pakistan and facilitate trade.
- 💡 **Deep Rooted Cultural Bonds:** India and Afghanistan share **deep-rooted historical, cultural, and**

civilizational ties dating back to ancient times, reflected in **shared religions, languages, and cultural exchanges**.

- ✦ **Bollywood's popularity** in Afghanistan and **Indian scholarships for Afghan students** highlight ongoing **cultural diplomacy**.
- 💡 **Diplomatic Engagement Amid Political Shifts:** India's recent **diplomatic outreach** to **Taliban-led Afghanistan**—including **upgrading its Kabul mission to full embassy status** and hosting **Taliban diplomats**—demonstrates **pragmatic diplomacy** balancing **recognition hesitancy** with ground realities.
 - ✦ India-Afghanistan ties counterbalance **China's growing Central Asian influence** and **Pakistan's destabilizing activities**. India's participation in regional forums like the **Heart of Asia – Istanbul Process** further reinforces its role in promoting **political cooperation** and **regional connectivity**.



What are the Major Challenges Facing India-Afghanistan Relations?

- 💡 **Security Concerns and Terrorism:** Despite **diplomatic engagement**, **terrorism** remains a grave challenge.
 - ✦ The **Taliban's historic links** with terrorist groups like **Lashkar-e-Taiba** and **Jaish-e-Mohammed** raise fears of **Afghanistan serving as a safe haven** for anti-India militants.

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✦ Although the Taliban pledged in 2025 not to allow **Afghan soil** to be used against India, **scepticism** persists due to incomplete disengagement from **terror outfits**.

💡 **Pakistan's Influence and Proxy Dynamics:** Pakistan's **strategic rivalry** with India plays out deeply in Afghanistan.

✦ **Pakistan's Inter-Services Intelligence (ISI)** has historically supported the **Taliban** and **proxy groups**, complicating **peace and security**.

✦ The Taliban's refusal to crack down on **Tehrik-i-Taliban Pakistan (TTP)**, who wage insurgency in Pakistan, has soured **Afghan-Pakistan ties** but remains a risk for **cross-border instability**.

💡 **Political Instability and Governance Issues:** The Taliban's **non-democratic regime** conflicts with India's support for an **inclusive, Afghan-led political process**.

✦ Lack of **women's rights**, **minority protections**, and suppression of **dissent** undermine India's **values-based engagement**.

✦ The 2025 controversy over the exclusion of **women journalists** at Taliban-led **press events** in India exemplifies the difficulties of **engaging** a regime with a poor **human rights record**.

💡 **Economic and Infrastructure Challenges:** Afghanistan remains one of the world's **poorest countries**.

✦ **Security concerns** impede India's **multiple investment projects**, such as the **Salma Dam** and the **Kabul parliament**.

✦ The Taliban's governance and **international sanctions** create hurdles in **project continuity** and **trade**. However, India's push to trade via **Chabahar port** and **mining sector invitations** suggest cautious optimism.

💡 **Growing Chinese Influence:** China's **expanding role** in Afghanistan, including **dialogue with the Taliban** and **infrastructure investments**, presents a **strategic challenge** for India.

✦ The evolving **China-Afghanistan-BRI nexus** presents a **strategic challenge** for India by

potentially consolidating **Beijing's control** over vital **resource corridors** and **regional connectivity**, thereby limiting India's leverage in **South Asia's geopolitics**.

💡 **Drug Trafficking and Narcotics:** Afghanistan's **position** as the world's largest **opium producer**, forming the core of the **Golden Crescent** (Afghanistan, Iran, Pakistan), fuels **regional instability**.

✦ The **narcotics trade** harms India, especially regions like **Punjab**, facing **drug addiction crises**, and finances **terrorist activities**.

✦ Controlling **drug trafficking** from the **Golden Crescent** remains a **cross-border security priority**, complicating **bilateral ties**.



What Strategic Steps Should India Take to Strengthen ties with Afghanistan?

💡 **Sustain Diplomatic Engagement while Withholding Full Recognition:** Following its pragmatic 2021 "engage but not recognise" policy post-Taliban takeover, India upgraded its **technical mission** to a **full embassy** in Kabul in 2025.

✦ India should continue to **maintain and deepen official channels** (full embassy, regular diplomatic exchanges) without immediate political recognition.

✦ Maintaining limited engagement and providing **humanitarian aid** rather than formal recognition, India should demonstrate that **strategic necessity need not override moral responsibility**, ensuring its actions remain both **pragmatic and principled**.

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💡 **Expand Targeted Development & Humanitarian Diplomacy:** India should continue to counter the rising **Chinese influence** by expanding **capacity-building aid**, **infrastructure cooperation**, and **diplomatic engagement**, maintaining **strategic autonomy**—a principle highlighted in India's foreign policy doctrines like "**Act East**" and "**Neighbourhood First**."

- ✦ India should continue visible, needs-based projects (health, water, education, reconstruction) that build goodwill and stabilise communities.
- ✦ India is resuming and expanding several **healthcare** and **infrastructure projects**: construction of a **30-bed hospital** in Kabul's **Bagrami district**, **Oncology & Trauma Centres**, five **maternity clinics** in provinces like **Paktika** and **Khost**, and establishment of a **Thalassemia Centre**.
- ✦ These initiatives build **soft power**, foster **goodwill**, and stabilise **local communities** through **development diplomacy**—a model seen in **Japan's aid to Southeast Asia**.

💡 **Strengthen Counter-terrorism Cooperation:** Institutionalise real-time intelligence exchange, joint investigations, and capacity building for Afghan security services within legal safeguards.

- ✦ Strengthen cross-border anti-narcotics collaboration, interdiction, and demand-reduction programmes in source and transit zones of the Golden Crescent.
- ✦ Drawing from the **2011 Strategic Partnership Agreement**, India should continue to support **Afghan security capacity-building programs**, reflecting international best practices for **counterterrorism cooperation**.

💡 **Secure Economic Connectivity & Goeconomic Options:** Expand trade and investment via alternative routes and projects that bypass hostile transit and pursue resource-sector partnerships with clear safeguards.

- ✦ **For instance**, Economic engagement through the use of **Chabahar Port**, resumption of the

India-Afghanistan Air Freight Corridor (2025), and selective investments (e.g., Hajigak via AFISCO) with contractual and security guarantees provide mutual incentives for stability and create leverage for India.

💡 **Multilateral & Regional Cooperation to Share Burden and Legitimacy:** Work through **Heart of Asia**, **SCO**, **Moscow Format**, **UN** and partner countries (Iran, Central Asian states) for coordinated aid, counterterrorism, and reconstruction plans.

- ✦ These platforms enable coordinated **humanitarian responses**, **counterterrorism**, and **cross-border cooperation**, reflecting principles of **multilateral conflict resolution** embodied by the **UN** and **ASEAN practices**.

💡 **Advocacy for Social, Gender, and Human Rights Concerns:** Though engaging pragmatically, India has consistently advocated for **women's education**, **minority rights**, and **political inclusivity** via **diplomatic channels** and **international forums**.

- ✦ The exclusion of **women journalists** during the 2025 **Taliban visit** to India sparked criticism but underscored India's challenge to balance **ethical concerns** with **diplomacy**.
- ✦ India's **engagement strategy** may resemble **EU's cautious diplomacy** with countries under **authoritarian rule**, where **aid is conditional on reforms**.
- ✦ At the same time, **India should continue to** expand scholarships, vocational training, cultural exchanges, and media/communication outreach that reach ordinary Afghans.

Conclusion:

India-Afghanistan **relations** today reflect **strategic pragmatism** blended with deep **historical ties**. As **Harsh Pant (Foreign Policy Expert)** observes, "**Engagement** does not equate to **endorsement**," highlighting India's delicate balance between **principled concerns** and **realpolitik**. The path forward demands **patient**, **principled engagement**, robust **humanitarian aid**, and **multilateral collaboration** to safeguard India's **interests** while supporting Afghanistan's **peace** and **progress**.

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Strengthening India-Australia Partnership

This editorial is based on “[Powering up the Australia-India clean energy partnership](#)”, which was published in *The Hindu* on 15/10/2025. The article explains how Australia and India can build a mutually beneficial clean energy partnership by leveraging Australia’s raw material strengths and India’s manufacturing capabilities, while addressing policy, economic, and institutional barriers to advance joint decarbonisation efforts in the Indo-Pacific region.

Tag: GS Paper 2, India and its Neighbourhood, Groupings & Agreements Involving India and/or Affecting India’s Interests, Effect of Policies and Politics of Countries on India’s Interests

As climate risks escalate across the **Indo-Pacific**, the **India-Australia Renewable Energy Partnership (REP)** stands out as a **vital alliance** with **global significance**. By combining **Australia’s mineral wealth** and **stable investment climate** with **India’s manufacturing scale** and **skilled workforce**, the partnership aims to unlock new dimensions of **renewable growth**. Yet, overcoming **supply-chain dependence on China**, **aligning policies**, and **bridging technological and financial gaps** remain central challenges in transforming **vision into reality**.

What is the India-Australia Renewable Energy Partnership (REP)?

About: The **India-Australia Renewable Energy Partnership (REP)** is a **bilateral initiative** launched in **November 2024** to deepen **cooperation** in the **renewable energy sector** and accelerate the **clean energy transition** for both nations.

It embodies a **strategic framework** to foster **collaboration** in areas critical to **decarbonisation**, **economic growth**, and **energy security**, grounded in the shared commitments of the **Comprehensive Strategic Partnership**.

Priority Sectors:

Solar photovoltaic (PV) technology, including **innovation** and **rooftop solar workforce development**.

- ✦ **Green Hydrogen** development, focusing on joint technology advancement and market creation.
- ✦ **Energy storage solutions** to support grid stability and renewable integration.
- ✦ **Solar and critical mineral supply chains** for materials like **lithium** and **rare earths**.
- ✦ **Circular economy** approaches renewables to promote sustainability.
- ✦ **Two-way investments** facilitating **giga-scale joint ventures** and **infrastructure projects**.
- ✦ **Capacity building** with a focus on **skills development**, including training **young women and men** as **solar technicians**.

Governance and Dialogue Platforms:

- ✦ Formation of the **Australia-India 1.5 Track Dialogue**, enabling **collaboration** among **governments**, **industry**, and **research institutions**.
- ✦ Utilisation of existing **bilateral architectures** such as the **Comprehensive Strategic Partnership** and the **India-Australia Economic Cooperation and Trade Agreement (ECTA)**.



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What Factors are Propelling the Strengthening of India–Australia Bilateral Partnerships?

💡 Comprehensive Strategic Partnership (CSP) Framework (2020):

In June 2020, India and Australia elevated their relationship from a Strategic Partnership (initiated in 2009) to a Comprehensive Strategic Partnership (CSP).

- ✦ This created a broader, more structured collaboration platform spanning defence, trade, education, climate, technology, culture, and more.
- ✦ Over five years, the CSP supported more than 32 high-level visits between the two countries and facilitated deeper engagement at leadership levels.

💡 **Robust Defence and Security Cooperation:** Defence cooperation has grown significantly with regular naval, air, and land exercises like AUSINDEX and Malabar, improving interoperability.

- ✦ India's participation in Australia's largest military exercise, "Talisman Sabre 2025", further deepened operational ties.
- ✦ The Mutual Logistics Support Agreement (MLSA) enables reciprocal access to facilities, enhancing logistics and maritime domain awareness.
- ✦ The '2+2 Ministerial Dialogue' brings together Australian and Indian Foreign and Defence Ministers every two years to discuss strategic, defence, and regional security issues, strengthening their Comprehensive Strategic Partnership.

💡 **Economic and Trade Growth Enabled by ECTA:** The India–Australia Economic Cooperation and Trade Agreement (ECTA), a landmark trade deal, was signed in April 2022 and ratified in November 2022, marking a major step toward enhanced bilateral trade and economic integration.

- ✦ The agreement enables Australian businesses to export over 85% of goods to India tariff-free, a figure set to increase to 90% by January 2026, significantly boosting bilateral trade competitiveness.

- ✦ The India Economic Strategy to 2035 report projects a 10-fold increase in Australian investments in India, targeting \$100 billion by 2035, driven by sectors such as critical minerals, education, and technology.

💡 **Clean Energy and Climate Initiatives:** Launch of the India-Australia Renewable Energy Partnership (REP) in 2024 targets eight cooperation areas, including solar PV, green hydrogen, battery storage, and the circular economy.

- ✦ REP helps reduce overdependence on China's dominance in refining and manufacturing of critical renewable components, addressing vulnerabilities revealed by recent export restrictions and pandemic-induced disruptions.
- ✦ Both nations align climate ambitions—India aiming for 500 GW of non-fossil electricity by 2030 (already 50% non-fossil capacity), and Australia targeting 62–70% emissions reduction by 2035.

💡 **Education and Skill Development Cooperation:** Australia hosted nearly 140,000 Indian students in 2024, making India the second largest source of international students in the country.

- ✦ The establishment of Australian foreign branch campuses in India is expanding educational exchanges.
- ✦ Joint skill development projects include training solar rooftop technicians, with special focus on empowering youth and women.
- ✦ REP includes the establishment of the India-Australia Rooftop Solar Training Academy to train 2,000 technicians (women and youth) by 2027.

💡 **Science, Technology, and Innovation Collaboration:** The Australia-India Strategic Research Fund supports joint projects in science, clean energy, critical minerals, and digital research.

- ✦ Both countries collaborate on space technologies, including satellite launches and data-sharing initiatives.
- ✦ Innovation challenges under REP encourage the commercialisation of renewable

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technology, contributing to smart grids, green hydrogen, and energy storage solutions.

- ✦ The Australia-India Green Steel Partnership supports India's growing steel demand while promoting innovative technologies for improved efficiency and sustainability.

💡 **People-to-People and Cultural Ties:** The Indian diaspora in Australia actively supports bilateral relations through business, cultural, and academic links.

- ✦ Education is Australia's largest service export to India, worth \$4.4 billion (2022).
- ✦ Indian culture, cuisine, festivals, and Bollywood contribute to vibrant multiculturalism.
- ✦ Initiatives like the Australia India Institute and the India Australia Friendship Association foster mutual understanding and educational conferences.



What are the Key Challenges Hindering India-Australia Bilateral Cooperation?

- 💡 **Overdependence on China in Supply Chains:** Both India and Australia are highly dependent on China for critical renewable energy materials and components.

- ✦ China accounts for nearly 70% of the world's rare earth mining and controls roughly 90% of global rare earths processing.
- ✦ India sources nearly 15% of total imports from China, including electrical machinery, pharmaceutical ingredients, and battery materials.

💡 Similarly, more than 90% of Australia's imported solar panels come from China, and around 80% of panels in Australia overall are Chinese-made.

- ✦ This dependence creates strategic vulnerabilities—for example, China's restrictions on rare earth exports in 2020 disrupted Indian electric vehicle production, halving output in some cases.
- ✦ A trilateral Supply Chain Resilience Initiative with Japan aims to diversify supply sources and reduce reliance on China, underscoring the urgency of this challenge.

💡 **Limited Downstream Manufacturing:** Australia mainly exports raw minerals like lithium, cobalt, and rare earths but lacks large-scale refining and manufacturing facilities.

- ✦ As a result, it cannot fully capture the economic value or participate in high-end renewable technology manufacturing, limiting potential bilateral industrial synergies with India's manufacturing sector.
- ✦ For instance, despite being the world's largest lithium producer, Australia imports many finished battery components, while India's PLI schemes try to build domestic production chains.

💡 **Regulatory, Certification, and Policy Alignment Issues:** Divergent standards and regulations between India and Australia obstruct smooth trade in renewable technologies and critical minerals.

- ✦ Investors lean towards markets like the EU or the U.S. with predictably harmonised regulations, which cools investment enthusiasm in India-Australia projects.

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✦ Harmonising **certification** for solar panels, **green hydrogen production**, and **battery tech** remains a work in progress requiring **concerted diplomatic and industry efforts**.

💡 **Geopolitical and Strategic Differences:** India's **strategic defence ties** with **Russia** and **non-alignment stance** contrast with **Australia's alignment** with the **U.S.** and **Western defence coalitions**.

✦ This divergence causes **cautious approaches** to **technology transfers** in **defence** and related **high-tech sectors**.

✦ However, increasing alignment over **Indo-Pacific security** and joint **naval exercises** like **Malabar** mitigate these challenges, showing gradual **strategic convergence**.

💡 **Trade Imbalance and Focus on Raw Material Exports:** India's imports from **Australia** are heavily **coal-dependent**, constituting more than **80% of Australia's exports** to India.

✦ This creates a **trade imbalance** perceived by **India** as contrary to the mutual goal of **sustainable development** and **cleaner energy**.

✦ Both countries are working to **diversify trade baskets**, but **non-tariff barriers**, **tariffs**, and **procedural bottlenecks** still constrain **Indian exports** to **Australia**, especially in **MSMEs**.

💡 **Talent Mismatch and Skill Certification Challenges:** India provides a **large, cost-effective skilled workforce**, but not all **skills** meet **Australian industry standards** and **certification requirements**.

✦ Efforts like the **Solar Rooftop Technician training initiative** help address this, but **scaling** such programs to **high-quality, accredited levels** across **sectors** is complex.

✦ **Language and accreditation barriers** also pose challenges for **workforce mobility** and **mutual recognition of skills**.

What Strategic Measures Should India Adopt to Enhance Its Bilateral Partnership with Australia?

💡 **Diversify and Strengthen Trade via Comprehensive Agreements:** India should accelerate negotiations

for a **Comprehensive Economic Cooperation Agreement (CECA)** to supplement the existing **ECTA**, addressing **tariff and non-tariff barriers** that hamper **Indian MSMEs** from accessing **Australian markets** effectively.

✦ The current **bilateral trade** of **\$24 billion** in **FY25** is promising but **diversifying trade products** and simplifying **regulatory frameworks** will unleash further growth, especially in sectors like **agriculture, pharmaceuticals, and digital services**.

✦ Leveraging **India's production-linked incentive (PLI) schemes** and **Australia's resource exports** can also strengthen **supply chains** and create long-term **industrial ecosystems**.

💡 **Enhance Renewable Energy Partnership and Supply Chain Resilience:** India should **co-invest** with **Australia** in **refining and processing critical minerals** such as **lithium, cobalt, and rare earths** to reduce dependence on **China** and enhance **supply chain resilience**.

✦ Coordinated **skill development programs** like **solar rooftop technician training** should be expanded, integrating **India's Skill India** and **Australia's Net Zero Jobs Plan** to create a **skilled workforce**.

✦ Policymakers could draw from models like the **EU's harmonised standards in clean energy certification** as a **reference framework**.

💡 **Deepen Defence and Security Cooperation:** India should continue expanding **operational and strategic dialogues** such as the annual **Defence Ministers' Dialogue**, **Joint Staff Talks**, and **bilateral exercises**.

✦ Participation in **complex military exercises**, including **India's involvement in Australia's Exercise Talisman Sabre** and joint **Exercise AUSTRAHIND**, strengthens **interoperability** and **strategic alignment** in the **Indo-Pacific**.

✦ **Promote Defence industrial collaboration** as marked by **Australia's first defence trade mission to India** in **October 2025** and establishment of the **India Pavilion** at **Australia's Land Forces Expo (2024)**.

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- ✦ India could further boost cooperation in emerging defence technologies like cyber warfare, space surveillance, and AI-enabled systems.
- 💡 **Expand Science, Technology, and Innovation Collaboration:** India must increase joint R&D efforts funded through bilateral mechanisms such as the Australia-India Strategic Research Fund and Australia's Maitri Grants to support innovation in clean energy, bio-manufacturing, and defence tech.
 - ✦ Promoting startups and technology exchanges will accelerate the commercialisation of renewable technologies and smart grid solutions.
 - ✦ For instance, collaboration in space technology and satellite data-sharing between ISRO and Australian space agencies has set a precedent for expanding high-tech cooperation.
- 💡 **Boost Educational and People-to-People Connectivity:** India should support the establishment of Australian universities' branch campuses in India and increase bilateral scholarships to maintain its position as Australia's largest source of international students.
 - ✦ Streamlining visa processes and increasing educational exchange programs will deepen long-term bilateral relations.
 - ✦ Enhanced cultural and public diplomacy initiatives, such as the India-Australia Friendship Association and the Australian Government's Centre for Australia-India Relations, can strengthen mutual understanding.
- 💡 **Promote Maritime and Indo-Pacific Security Cooperation:** India must intensify collaboration within the Quad and bilateral forums to support freedom of navigation, maritime domain awareness, and joint operational planning.
 - ✦ Signing and operationalising maritime security roadmaps bolster a free and rules-based Indo-Pacific, a shared priority.

- ✦ The signing of the Mutual Submarine Rescue Support in 2025 highlights practical cooperation to address regional maritime safety and disaster response.

Conclusion:

As Australian Foreign Minister Penny Wong aptly noted, "the India–Australia partnership is particularly important at a time when the global order is undergoing significant transformation." Moving forward, both countries should focus on deepening defence cooperation, expanding trade agreements, advancing clean energy collaboration, and harmonising regulations. Sustained and practical engagement will enable both nations to jointly lead in shaping a resilient and prosperous Indo-Pacific future.

Towards India's Clean Energy Revolution

This editorial is based on "The 'critical factor' in India's clean energy ambitions," which was published in The Hindu on 16/10/2025. The article discusses how securing and developing critical minerals like lithium, cobalt, and Rare Earth Elements (REEs) through domestic mining, processing, recycling, and global partnerships is essential for India's clean energy transition, energy security, and leadership in the green economy.

Tag: GS Paper 3, Environmental Pollution & Degradation, Environmental Impact Assessment (EIA), Sustainable Development, Climate Change

As India races toward a clean energy future, securing **critical minerals** like lithium, cobalt, and **Rare Earth Elements (REEs)** has become a strategic imperative. These minerals power electric vehicles, solar panels, wind turbines, and energy storage, forming the backbone of India's green transition. Yet, with heavy import dependence, global competition, and limited domestic processing, India faces significant challenges in building resilient supply chains, scaling mining operations, and fostering recycling infrastructure to achieve its renewable energy and net-zero goals.

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What are the Main Drivers Behind India's Clean Energy Revolution?

💡 **Ambitious National Renewable Capacity Targets:** India set a bold goal of **500 GW non-fossil fuel electricity capacity** by **2030** under its **COP26 commitments**, aiming for **net-zero emissions** by **2070**.

✦ As of **March 2025**, India's **renewable energy capacity** reached **220.10 GW**, growing by nearly **29.5 GW** in **FY 2024-25**—a **record addition** fueling momentum.

💡 These **massive annual additions** also **drive down** the **Levelized Cost of Electricity (LCOE)** for renewables.

✦ **Solar energy** dominates this growth with **105.65 GW installed capacity**, including **rooftop** and **off-grid systems**.

💡 **Diversity and Expansion of Renewable Sources:** India has emerged as a **global clean energy leader**, ranking **4th globally** in **Renewable Energy (RE) Installed Capacity**, **3rd** in solar, **4th** in wind, and boasting the **world's fastest-growing renewable energy program**.

✦ **Wind power capacity** stands at **50.04 GW**, growing steadily alongside solar.

✦ Emerging sectors like **hybrid systems**, **round-the-clock power**, and **energy storage projects** are increasingly implemented to tackle **intermittency issues**.

💡 **Green Hydrogen and Industrial Decarbonization:** The **National Green Hydrogen Mission** aims to make India a global hub for the production, use, and export of green hydrogen and its derivatives, targeting **5 MMT per annum by 2030**.

✦ The mission is expected to attract **over ₹8 lakh crore in investments** in the green hydrogen sector and generate **around 6,00,000 jobs** by 2030.

✦ **Industrial zones and ports** are being developed as **green hydrogen hubs**, fostering **export-oriented decarbonization strategies**.

💡 **Financial Incentives and Regulatory Reforms:** The **Union Budget 2025-26** allocated **₹26,549 crore** for renewables and **₹60 billion** for **Green Energy Corridors** to improve **grid infrastructure** and **connectivity**.

✦ Policies like the **Inter-State Transmission System (ISTS)** charge waivers (extended by three years until June 2028) and high-capacity renewable auctions (50 GW annual) reduce project costs and incentivise investments.

💡 **Growing Foreign and Domestic Investments:** India attracted **₹42,000 crore (USD 4.88 billion)** FDI in clean energy in **2023**, reflecting strong **global investor confidence**.

✦ The government's **PLI scheme** incentivises **domestic solar module manufacturing**, reducing **import dependence**.

💡 **Community and Decentralised Solar Power:** Rooftop solar schemes like **PM-Surya Ghar Muft Bijli Yojana** democratize access, with villages like **Palli in J&K** becoming **carbon neutral** through **decentralised clean energy projects**.

✦ **Distributed energy** accelerates **rural electrification** and **local resilience**, supporting **social equity** in the energy transition.

💡 **Digitalisation and Market Innovation:** Innovations like the **Green Term Ahead Market (GTAM)** enhance **renewable energy trading efficiency** and **supply transparency**.

✦ **AI and IoT-powered analytics** help **forecast demand**, **monitor renewable grid integration**, and **optimise storage**, strengthening **system reliability**.

✦ **Battery Energy Storage Systems (BESS)** capacity surged to over **7.6 GW** awarded in **2025**, ensuring **smoother renewable integration**.

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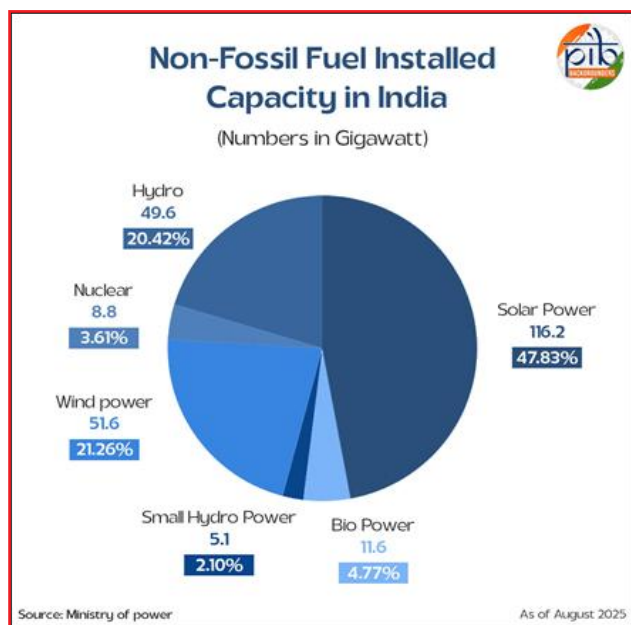


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What are the Major Challenges facing India's Clean Energy Transition?

- 💡 **Land Acquisition and Community Resistance:** Land acquisition is a major bottleneck for large-scale renewable projects despite India's vast land resources.
 - ✦ Complex land ownership, **fragmented parcels**, and **unclear titles** create legal and administrative hurdles, particularly in **Karnataka, Jharkhand, Odisha, and Assam**.
 - ✦ In **Assam 2025**, a planned **1 GW solar project** was cancelled after **tribal protests**, and the **Asian Development Bank** withdrew a **\$434 million loan**.
- 💡 **Grid Integration and Transmission Infrastructure Deficits:** The intermittent nature of solar and wind strains India's ageing grid.
 - ✦ Up to **50 GW of renewable projects** face delays due to **transmission bottlenecks** and poor **evacuation infrastructure**.
 - ✦ **Right-of-way (RoW) hurdles** for transmission lines, coupled with varied **state environmental policies**, add to project delays and costs.
 - ✦ **Battery Energy Storage Systems (BESS)** deployment is growing (**7.6 GW awarded** in

the first half of 2025) but still inadequate for **grid stability** and **EV integration**.

- ✦ Rural and semi-urban areas lack **EV charging infrastructure**, slowing the **decarbonization of transport**.
- ✦ Developing **cost-effective, efficient, long-duration storage technologies** remains a critical **R&D challenge**.
- 💡 **Financial Constraints and Investment Gaps:** Achieving India's renewable targets requires over **\$400 billion by 2030**, yet investment gaps persist.
 - ✦ High **upfront capital costs** and long gestation periods deter private investment, particularly in **green hydrogen, battery manufacturing, and energy recycling**.
 - ✦ Also, the **poor financial health of state-owned DISCOMs** remains a **major deterrent**. **Delayed or default payments** to power generators create **uncertainty**.
 - ✦ Moreover, there is an **insufficient volume of Green Bonds and Infrastructure Investment Trusts (InvITs)** tailored specifically for **clean energy assets**.
- 💡 **Dependence on Imports of Critical Minerals and Equipment:** India's heavy dependence on imports—nearly **100% for lithium, cobalt, nickel**, and **over 90% for Rare Earth Elements (REEs)**—makes its supply chains highly vulnerable.
 - ✦ **Geopolitical tensions, trade restrictions, and global competition**, especially from **China**, which controls **60% of global REE production** and **85% of processing capacity**, highlight the urgent need to develop a **self-reliant supply chain** to secure India's **clean energy goals, industrial growth, and national security**.
 - ✦ Domestic **lithium mining** is still **exploratory**, and India lacks large-scale **processing and manufacturing capabilities**, increasing vulnerability to **global commodity price shocks**.
- 💡 **Limited Recycling and E-Waste Management Framework:** India is projected to become the **4th largest solar panel waste producer by 2050**, but **recycling infrastructure** is almost non-existent.

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- ✦ Current **e-waste policies** cover battery and panel recycling marginally; **comprehensive circular economy measures** are needed to recover critical minerals like **lithium and cobalt**.
- ✦ Without proper recycling, **environmental risks** and **resource inefficiencies** may undermine the sustainability claims of renewable energy.

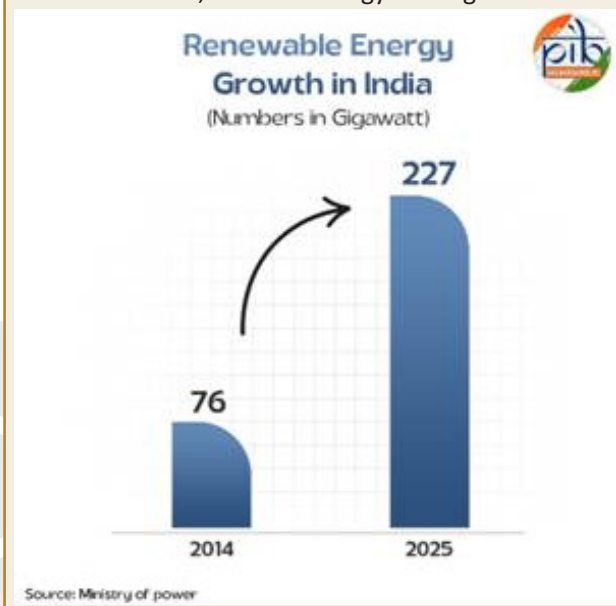
💡 **Coal-Dependent Energy Production:** India's installed renewable energy capacity exceeds 50%, yet **clean energy** contributes less than 30% to the actual electricity generation mix.

- ✦ Coal remains the **predominant source**, accounting for approximately **70% of electricity generation**, despite the growth in renewable energy installations.
- ✦ Also, coal-dependent states (Jharkhand, Chhattisgarh, Odisha, West Bengal) will face **economic disruption** as coal demand will decline with time.
- ✦ Thousands of **direct and indirect jobs** are at risk, and **regional economies** dependent on coal royalties require **long-term transition plans**.
- ✦ **Reskilling, job creation in renewables**, and **transparent stakeholder engagement** are essential to avoid **social unrest** and **poverty traps**.

What are the Key Government Initiatives Driving India's Renewable Energy Transition?

- 💡 **National Solar Mission:** Aimed & achieved **100 GW solar capacity** and enable large-scale solar deployment.
- 💡 **PM-KUSUM Yojana:** Aims to solarise **2 million agricultural pumps** and enhance farmer income via solar energy.
- 💡 **Solar Parks Program:** Aims to develop **ultra-mega solar projects** with grid connectivity.
- 💡 **National Green Hydrogen Mission:** Aims to produce **5 million tonnes of green hydrogen** annually by 2030.
- 💡 **PM Surya Ghar Muft Bijli Yojana:** Aims to promote **rooftop solar adoption** through subsidies and free electricity.

- 💡 The **National Bioenergy Program** aims to expand **bioenergy and waste-to-energy capacity**.
- 💡 **Wind and Small Hydro Policies** aim to strengthen the **onshore/offshore wind and small hydropower** sectors.
- 💡 **International Solar Alliance (ISA) & OSOWOG** aim to foster **global solar cooperation**, investment, and technology sharing.



What Strategic Interventions can Ensure India's Effective Clean Energy Transition?

- 💡 **Strengthen Domestic Critical Mineral Supply and Circular Economy:** India must prioritise securing critical minerals like **lithium, cobalt, and rare earth elements**, which are foundational for **EV batteries, solar panels, and wind turbines**. There is a pressing need to :
 - ✦ Develop **domestic mining capacity** responsibly in **mineral-rich regions** such as **Rajasthan and Jharkhand**, ensuring **environmental and social safeguards**.
 - ✦ Operationalise the **National Critical Mineral Mission** with focused **R&D on mineral processing and battery technologies**.
 - ✦ Invest heavily in **recycling infrastructure** to recover valuable minerals from **used batteries and electronic waste**, advancing a **circular economy** and reducing **environmental impact**.

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💡 **Expand Renewable Capacity and Modernise Grid Infrastructure:** India's renewable energy capacity reached over **225 GW by 2025**, but to achieve the **500 GW target by 2030**, it must:

- ✦ Invest strategically in **Green Energy Corridors** to enable **grid stability** and efficient **renewable power evacuation**.
- ✦ Digitise **grid management** using **AI** and **smart metering** to **forecast demand**, manage **variability**, and optimise **dispatch** of **intermittent resources** such as **solar** and **wind**.
- ✦ Implement policies like **waiving Inter-State Transmission System charges** and expanding **General Network Access**, facilitating smoother market entry and project connectivity.

💡 **Pioneer a Green Hydrogen Ecosystem:** Effectively operationalise the **National Green Hydrogen Mission**.

- ✦ Develop strategic **hubs** at **ports** like **Kandla** and **Tuticorin** for **green hydrogen production**, **storage**, and **exports**.
- ✦ Promote **industry pilots**, especially in **heavy sectors** like **steel** and **fertilisers**, to accelerate **hydrogen adoption**, supported by **government incentives** and **international collaborations**.

💡 **Mobilise Finance and Investment:** Leverage **green bonds**, **blended finance**, and **sovereign climate funds** to attract **global capital**.

- ✦ Maintain **transparent, competitive, and risk-mitigated auction systems** to ensure **investor confidence**.
- ✦ Enable easier access to **low-cost finance** for **emerging technologies** such as **battery storage**, **carbon capture**, and **green hydrogen**, fostering **diversification** beyond conventional renewables.

💡 **Promote Decentralised Energy Access and Social Inclusion :**Scale **rooftop solar deployment** through schemes like **PM Surya Ghar** and **farmer-centric solar pumps** under **PM Kusum**, reducing **rural energy poverty** and **transmission losses**.

- ✦ Model and replicate successes such as **Palli village in Jammu & Kashmir**, India's first **carbon-neutral panchayat** powered entirely

by **solar**, demonstrating **sustainability at grassroots levels**.

- ✦ Institutionalise **community consultation** and **land acquisition reforms** to ensure **equitable transition pathways**, minimising **displacement** and **resistance**.

- ✦ Promote **digitisation of land records** and dedicated **RoW corridors ("green lanes")** to streamline approvals.

💡 **Expand Energy Storage and Hybrid Systems:** Increase deployment of **Battery Energy Storage Systems (BESS)** beyond **7.6 GW awarded in 2025 tenders**, complemented with **pumped hydro** and emerging **storage technologies**.

- ✦ Incentivise **hybrid projects** combining **solar**, **wind**, and **storage** to deliver reliable **24/7 power**.
- ✦ Accelerate **electric vehicle infrastructure development nationwide**, particularly in **rural** and **semi-urban zones**, aligning **transport decarbonization** with **energy transition goals**.

💡 **Enhance International Cooperation and Supply Chain Resilience:** Strengthen **partnerships** with **mineral-rich democracies** like **Australia** through initiatives such as the **India–Australia Renewable Energy Partnership**, which brings together **Australia's resource strength** with **India's manufacturing and workforce capabilities**.

- ✦ Foster **technology transfers**, **joint R&D**, and **coordinated supply chains** to reduce **overdependence on single countries**, notably **China**, thus mitigating **supply disruptions** and **geopolitical risks**.

Conclusion:

India's clean energy transition reflects **visionary leadership** and **strategic foresight**, with over **50% of installed power capacity** from renewables, achieved five years ahead of target. As **Ban Ki-moon**, former **UN Secretary-General**, observed, "**Sustainable development is the pathway to the future we want for all.**" Strengthening **domestic manufacturing**, **critical mineral security**, **grid modernisation**, **green hydrogen**, and **global cooperation** will ensure an **inclusive, resilient, and sustainable energy future**, driving growth while honouring **climate commitments**.

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Pathways for AI-Enabled Healthcare Reform

This editorial is based on “Build AI infrastructure to turn daily clinical data into a learning system” which was published in The Hindu on 14/10/2025. The article brings into picture that the transformative potential of AI in healthcare rests not on algorithmic complexity but on institutional control over data and feedback systems, where continuous clinician-led learning ensures adaptive and reliable outcomes.

Tag: GS Paper - 2, Health, Government Policies & Interventions, GS Paper - 3, Robotics, Artificial Intelligence, Scientific Innovations & Discoveries, IT & Computers

The transformative potential of **artificial intelligence in healthcare** hinges not on algorithmic sophistication alone, but on **institutional control over data infrastructure and continuous learning systems**. Current healthcare AI implementations often rely on externally trained models that lack the feedback mechanisms necessary for real-time correction and local adaptation, creating a dangerous gap between clinical reality and system performance. The path to effective healthcare AI lies in **building proprietary feedback loops** where clinical expertise directly refines algorithmic performance, creating compounding improvements rather than static solutions.

What are the Key Applications of AI in Healthcare?

- 💡 **AI in Advanced Medical Imaging and Diagnostics:** AI algorithms, especially deep learning models, **revolutionize diagnostics by analyzing medical images faster and more accurately than the human eye**, crucial in a country with a severe shortage of specialists like radiologists.
 - ✦ This accelerates the detection of conditions such as cancer, diabetic retinopathy, and cardiac issues, improving patient outcomes through early intervention.
 - ✦ For instance, **Indian startup Qure.ai's qXR system** rapidly analyzes chest X-rays to detect abnormalities like tuberculosis.

📌 **The India AI in Medical Diagnostics Market** is forecasted to grow at a CAGR of **12.72% from 2025 to 2034**, underscoring this trend's accelerating adoption and massive market potential.

💡 **AI-Powered Drug Discovery and Research:** AI is a game-changer in accelerating and de-risking the lengthy, costly process of drug discovery and pharmaceutical research by simulating molecular interactions, **predicting drug-target binding**, and **optimizing clinical trial design**.

- ✦ This shift is critical for India's pharmaceutical industry, moving it from a generics-focused model to one of novel drug innovation and biosimilar development.
- ✦ For instance, **Excelra, a Hyderabad-based company**, leverages **AI/ML and proprietary data** to accelerate drug discovery for global clients.

📌 **The number of patents filed by the Indian pharma sector** surged from **1,590 in 2013 to 8,793 in 2023**, reflecting enhanced R&D capabilities, partly driven by new digital technologies and strategic collaborations.

💡 **Personalized Medicine and Genomics Integration:** **Precision medicine**, enabled by AI, moves healthcare **beyond the “one-size-fits-all” approach** by integrating a patient's genetic, behavioral, environmental, and clinical data to tailor treatment protocols, especially for complex diseases like cancer.

- ✦ This context-aware personalization is vital for India's diverse and socioeconomically varied population, where environmental factors often outweigh genetics.
- ✦ For instance, **Bangalore-based Oncostem Diagnostics** uses **AI on genomics-based data** for personalized breast cancer therapy and recurrence prediction.
- 📌 An increasing focus in India is on behavioral and socioeconomic determinants, with the **AI-driven personalized medicine market segment projected to reach \$500 billion globally by 2027**, signaling massive localized potential.

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💡 **Automation of Administrative and Operational Workflows:** AI-driven solutions streamline the non-clinical, administrative burdens on hospitals, including **patient scheduling, billing, claims processing, and electronic health record (EHR) management** via **Natural Language Processing (NLP)**.

✦ This operational optimization is essential for improving hospital cash flow, reducing errors, and allowing clinical staff to dedicate more time to direct patient care.

✦ For instance, **Eka.care's AI medical scribe, Eka Scribe, converts doctor-patient conversations into structured prescriptions in real-time.**

💡 **Expanding Healthcare Access through Telemedicine:** AI serves as the backbone for advanced telemedicine and remote patient monitoring (RPM) platforms, **using predictive analytics and conversational AI (chatbots) to extend quality healthcare to the population living in rural areas.**

✦ It provides triage, virtual assistance, and specialist consultation without the need for physical travel.

✦ For instance, **Tricog Health's AI platform, InstaECG, provides real-time ECG interpretation, enabling instant diagnosis of heart attacks even in remote clinics without cardiologists.**

📌 The **Union Cabinet allocated ₹10,372 crore to the IndiaAI Mission**, which specifically targets application development in sectors like healthcare, underscoring the government's push for widespread digital health access.

💡 **Predictive Analytics for Public Health and Epidemics:** AI's predictive analytics capabilities are crucial for **proactive public health management by analyzing epidemiological data, social media trends, and environmental factors** to forecast disease outbreaks, hospital admissions, and resource needs (e.g., ventilator and bed allocation).

✦ This enables early intervention and targeted public health campaigns.

✦ AI-based risk modeling is increasingly used to predict non-communicable diseases. For instance, **NITI Aayog is working with Microsoft and Forus Health to roll out a technology for early detection of diabetic retinopathy** as a pilot project.

✦ The growing **AI-Kosh (Dataset Platform)** has **over 3,000 datasets for training AI models**, providing a foundational data ecosystem for public health predictive analytics.

💡 **AI in Mental Health and Psychological Support:** AI-powered conversational agents (chatbots) and AI-enabled telepsychiatry platforms are **democratizing mental health support by offering 24/7, anonymous, and affordable initial screening, emotional support, and Cognitive Behavioral Therapy (CBT) techniques.**

✦ This is essential given the high stigma and extremely low psychiatrist-to-patient ratio in India.

✦ The **upgraded Tele MANAS App (India's national tele-mental health programme)** is an example of expanding virtual support.

What are the Key Issues

Associated with AI in Healthcare?

💡 **Algorithmic Bias and Health Equity Concerns:** AI models, trained on unrepresentative data largely from **urban, well-documented, or Western populations**, often inherit and exacerbate existing health inequities, leading to **systematically inaccurate diagnoses for marginalized groups.**

✦ This lack of fairness directly impacts vulnerable populations, defeating the goal of inclusive healthcare.

💡 **Data Privacy, Security, and Consent:** The massive requirement for **sensitive personal health data to train and operate AI systems** creates profound risks around privacy breaches, unauthorized profiling, and loss of patient trust, especially in a digital ecosystem undergoing rapid expansion.

✦ Robust, dynamic security measures are essential but often costly.

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✦ The **Digital Personal Data Protection Act, 2023**, is a step toward a legal framework, but AI-specific legislation is still lacking.

💡 **Lack of Data Standardization and Interoperability:** Healthcare data in India is highly fragmented, existing in **disparate, non-communicating “silos” across numerous hospitals, clinics, and labs**, often in non-standardized formats or even paper records.

✦ This lack of interoperability starves AI systems of the rich, unified data needed for robust training and effective real-time clinical deployment.

✦ While the **Ayushman Bharat Digital Mission (ABDM)** promotes data interoperability, adoption of international standards like **HL7/FHIR is still low, particularly in legacy systems**.

✦ Physicians often manually lug paper files and disparate digital reports, a key friction point AI cannot overcome until data flow is seamless.

💡 **Regulatory and Accountability Ambiguity:** The dynamic, self-learning nature of AI models challenges traditional, static regulatory frameworks for medical devices, creating a **“black box” problem where the decision-making logic is non-transparent**.

✦ This lack of clear legal and clinical accountability is a major deterrent to widespread clinical adoption.

📎 Concerns around **data quality, misinformation, clinical safety, and ethical or regulatory risks** are growing.

📎 A recent example is of a **man who was hospitalized after following diet advice generated by ChatGPT**, highlighting the dangers of unverified AI-driven medical guidance.

✦ The **Medical Device Rules, 2017**, do not fully address the unique aspects of **Software as a Medical Device (SaMD) with AI/ML**.

💡 **High Implementation Cost and Skill Gap:** The initial investment in high-performance computing (GPUs), specialized engineering talent, and integration with legacy hospital IT systems is prohibitively high for many healthcare providers,

particularly in **resource-constrained Tier 2/3 cities and rural centers**.

✦ The **IndiaAI Mission** is addressing this by **providing high-end GPUs at subsidized rates (₹65 per hour)**, yet **most Indian companies still allocate only 2% of revenue to technology**.

📎 The cost of implementing AI in diagnostics can be between \$40,000 to \$1,000,000.

💡 **Data Scarcity and Quality in Rural Areas:** While there's a volume of data in major urban centers, there's an acute scarcity of high-quality, annotated clinical data from rural and smaller towns.

✦ This absence makes it nearly impossible to train effective AI models tailored to the unique epidemiological and logistical challenges of the majority of India.

✦ For instance, despite the massive data being generated, **it is estimated that only 1% of collected data is currently analyzed** due to a lack of computational infrastructure and trained personnel.

📎 **NITI Aayog** also highlighted the absence of enabling data ecosystems as a major hurdle.

ICMR Guidelines for Ethical AI Use in Healthcare:

In March 2023, the Indian Council of Medical Research (ICMR) issued the *“Ethical Guidelines for Application of Artificial Intelligence in Biomedical Research and Healthcare”*, establishing ten core ethical principles centered around patient welfare and responsible innovation.

Ten Guiding Principles:

💡 **Accountability and Liability:** Conduct regular audits to evaluate AI performance, with results made publicly available to ensure transparency and responsibility.

💡 **Autonomy:** Maintain human oversight in all AI-assisted decisions and secure informed consent from patients, clearly communicating potential risks and limitations.

💡 **Data Privacy:** Safeguard patient privacy and personal data integrity throughout every phase of AI development and deployment.

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- 💡 **Collaboration:** Encourage cross-disciplinary and international collaboration to promote the ethical and effective advancement of AI technologies in healthcare.
- 💡 **Safety and Risk Minimization:** Implement measures to prevent misuse, strengthen data security, and mandate ethical reviews by relevant committees before deployment.
- 💡 **Accessibility, Equity, and Inclusiveness:** Ensure equitable access to AI-driven healthcare infrastructure, addressing disparities caused by the digital divide.
- 💡 **Data Optimization:** Improve data quality and representation to minimize algorithmic biases and technical inaccuracies in AI systems.
- 💡 **Non-Discrimination and Fairness:** Promote fairness and inclusivity by ensuring AI tools are designed and deployed without bias, ensuring equal access for all users.
- 💡 **Trustworthiness:** Build confidence in AI systems through validation, reliability, ethical compliance, and adherence to legal standards.
- 💡 **Transparency:** Enable clinicians and researchers to assess AI validity and reliability by ensuring openness in methodologies, data sources, and performance metrics.

What Measures can India Adopt to Enhance Integration of AI in Healthcare?

- 💡 **Mandate Semantic Data Interoperability:** Establish a national technical standard for healthcare data that goes beyond basic data exchange (foundational and structural) to achieve semantic interoperability.
 - ✦ This requires **mandating the use of SNOMED CT for clinical terminology and LOINC for lab results** across all public and private Electronic Health Records (EHRs) linked to the **Ayushman Bharat Digital Mission (ABDM)**.
 - ✦ This uniform data language is non-negotiable for training generalizable and robust AI models across diverse hospital systems.
- 💡 **Implement Federated Learning Architectures:** To address data privacy concerns while ensuring AI

models have access to diverse datasets, India should pivot towards federated learning.

- ✦ This architecture allows AI models to be trained locally on segregated hospital data without the data ever leaving the premises, only exchanging the model parameters.
- ✦ This **Privacy-Preserving ML approach maintains data security, adheres to the Digital Personal Data Protection Act (DPDP Act)**, and ensures models are exposed to the full spectrum of Indian patient heterogeneity.
 - 📎 Also, the **Digital Information Security in Healthcare Act (DISHA)** is a proposed Indian law aimed at regulating the collection, storage, and use of digital health data.

- 💡 **Establish Regulatory Sandboxes:** Create regulatory sandboxes under the ICMR or CDSCO where high-risk AI medical devices can be tested in real-world clinical environments for a **fixed period with human oversight, before being granted full market approval**.

- ✦ This adaptive governance approach allows regulators to understand the AI's real-time performance and drift over time, moving beyond traditional, static regulatory checks for software and building dynamic trust among clinicians.

- 💡 **Curate Inclusive and Synthetic Datasets:** Actively curate and annotate diverse national datasets for AI training, with a specific focus on underrepresented rural, socio-economic, and regional disease patterns to mitigate algorithmic bias.
 - ✦ Simultaneously, government and academic bodies should **invest in Generative Adversarial Networks (GANs) to create high-fidelity synthetic data** that augments data scarcity for rare conditions or underrepresented patient demographics, ensuring fairness and equity in AI-driven diagnostics.

- 💡 **Clinical AI Literacy Mandate:** Integrate mandatory AI literacy and critical evaluation modules into the undergraduate medical (MBBS), nursing, and

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paramedical curricula, as well as into **mandatory Continuing Medical Education (CME)** for practicing physicians.

- ✦ The focus must be on algorithmic transparency, understanding model limitations, and calibrating trust to prevent dangerous automation bias, ensuring the human clinician remains the final point of accountability.
- 💡 **Incentivize AI Co-Creation at the PHC Level:** Launch targeted public funding programs and hackathons, possibly through the **IndiaAI Application Development Initiative**, that mandate partnerships between tech startups and Primary Health Centers (PHCs) in underserved areas.
 - ✦ These programs should co-create AI solutions with frontline workers like **ASHA and ANM workers**, ensuring the technology is contextually relevant, local-language enabled, and addresses genuine last-mile challenges like triage and remote screening.
- 💡 **Establish an Explainable AI (XAI) Standard:** Develop a national standard that **requires all clinically deployed AI solutions** to provide clear, understandable justifications for their output, **moving away from opaque 'black box' models**.
 - ✦ This XAI standard should be **auditable by clinicians, detailing the features and data points** that contributed most to a diagnosis or treatment recommendation, thereby boosting physician trust and making the AI's logic defensible in a clinical and legal context.

Conclusion:

The promise of AI in healthcare rests **not merely on technological sophistication but on ethical, inclusive, and interoperable integration within India's health ecosystem**. By prioritizing **data interoperability, clinical feedback loops, and transparency**, India can transform AI from a diagnostic tool into a public health equalizer. Effective regulation and human oversight must remain central to ensure accountability and patient safety. With the **IndiaAI Mission as a catalyst**, the country stands poised to democratize precision healthcare for all.

The Burden Of Non-communicable Diseases (NCDs) in India

*This editorial is based on “**India's burden of lifestyle diseases is growing. We need a multi-pronged approach**”, which was published in The Indian Express on 17/10/2025. The article highlights that India's growing lifestyle disease burden, including heart disease, diabetes, and respiratory disorders, requires an integrated national approach combining healthcare, nutrition, environment, prevention, and grassroots diagnostics.*

Tag: GS Paper - 2, Government Policies & Interventions, Health, Issues Related to Children, Issues Related to Elderly, Welfare Schemes

The **2017 National Health Policy** underscored the alarming rise of **non-communicable diseases (NCDs)** such as heart disease, diabetes, and respiratory disorders, a trend that the latest **Global Burden of Disease study** shows has intensified over the past eight years. Despite advances in healthcare, gaps in **early detection, public awareness, and preventive measures** persist, compounded by **lifestyle and environmental factors**. Tackling this challenge demands a **comprehensive, multi-pronged strategy** that combines **medical care, community education, and coordinated policy action** to protect health and improve quality of life.

What are the Recent Trends in the Burden of Non-communicable Diseases (NCDs) in India?

- 💡 **Dominance of NCDs in Mortality:** Non-communicable diseases (NCDs) are medical conditions or diseases that are **not caused by infectious agents** and usually have a **long duration and slow progression**.
 - ✦ NCDs such as **cardiovascular diseases, diabetes, cancer, and chronic respiratory ailments** now account for nearly **63–65% of all deaths in India**, rising from **37.9% in 1990** to over **63% by 2023**.

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✦ This reflects a continuing **epidemiological shift** away from **infectious diseases** toward **chronic conditions** driven by **lifestyle** and **demographic changes**.

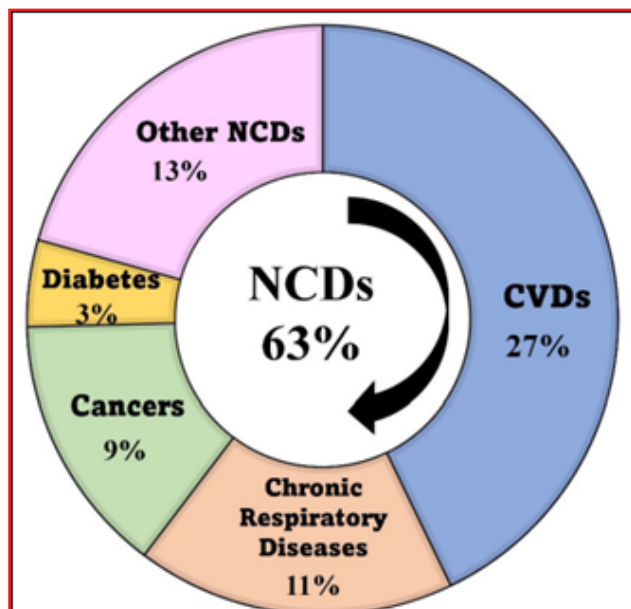
💡 **High Rate of Premature Mortality:** Approximately **25–26% of NCD-related deaths** occur between **ages 30 and 70**, indicating a severe loss in **prime productive years**.

💡 **Early Onset and Youth Vulnerability:** According to the **10th International Diabetes Federation (IDF) Atlas, 2021**, India has **2,294,000 children** aged **0–19 years** living with **type 1 diabetes**.

✦ Experts link this to **sedentary behaviour**, **processed diets**, and **early-life nutritional deficiencies**.

💡 **Growing Economic and Social Burden:** India is projected to **lose \$4.58 trillion by 2030** due to **non-communicable diseases (NCDs)** and **mental health conditions**. Among these, **cardiovascular diseases** will contribute **\$2.17 trillion**, while **mental health conditions** will account for **\$1.03 trillion** in economic losses.

✦ **NCDs reduce quality of life**, cause **disabilities**, and strain **middle-aged working populations**, directly affecting India's **demographic dividend**.



What Are the Key Factors Contributing to the Rising Burden of Non-Communicable Diseases (NCDs) in India?

💡 **Triple Burden of Malnutrition:** India faces a paradoxical coexistence of **undernutrition**, **micronutrient deficiencies**, and **obesity**, intensifying **metabolic disorders**.

✦ **Obesity** now surpasses **underweight** as a **public health concern**.

✦ According to **NFHS-5**, the prevalence of **overweight and obesity** has increased significantly: **44% among men** and **41% among women**, compared to earlier surveys.

✦ The **economic impact of obesity in India** was **\$28.95 billion (Rs 2.4 lakh crore)** in **2019**, accounting for **1.02% of GDP**.

✎ It is projected to rise to **\$81.53 billion (Rs 6.7 lakh crore)** by **2030** ($\approx 1.57\%$ of GDP) and could **soar to \$838.6 billion (Rs 69.6 lakh crore)** by **2060**, or **2.5% of GDP**, if unchecked.

💡 **Sedentary lifestyles and Dietary Changes:** Rapid **urbanisation** is reshaping **food consumption patterns** across India.

✦ The shift to **processed, calorie-rich foods** high in **fats, sugars, and salt** has increased dramatically, especially in **urban and peri-urban areas**.

✎ This “**nutrition transition**” is linked to rising **obesity rates**.

✦ **Sedentary lifestyles** affect over **31% of adults** and **80% of adolescents (WHO)**, driven by increased **mechanisation**, **screen time**, and **urban work patterns**.

✎ Insufficient access to **recreational spaces** and **safe urban design** compounds **physical inactivity**.

💡 **High Tobacco and Substance Use:** Tobacco use remains a major driver of NCDs, with nearly **28% of adults** using some form of **tobacco**, including **smoking** and **smokeless types**.

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- ✦ In **2021**, **tobacco** was estimated to be the **5th highest risk factor** contributing to **deaths and disability combined** in India.
- ✦ **Tobacco** causes about **1 in 5 male deaths** and **1 in 20 female deaths** in India.
- ✦ Similarly, **harmful alcohol use** and **stress** due to **social inequities** further elevate **NCD risk**.

💡 **Air Pollution as a Major Risk Factor:** According to the **Global Burden of Disease (GBD) 2023 Report**, **air pollution** remains among India's top three causes of **premature death and disability**.

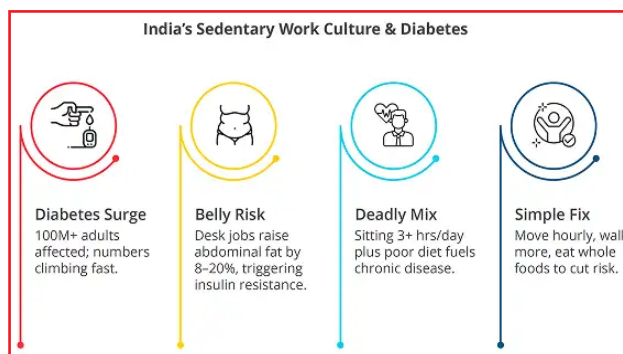
- ✦ According to the **State of Global Air 2024**, **air pollution** causes over **2 million deaths annually** in India.
- ✦ **Chronic Obstructive Pulmonary Disease (COPD)** accounts for **75% of chronic respiratory diseases**, heavily linked to **indoor cooking fuel smoke** and **urban ambient pollution**.
- ✦ With millions exposed daily to **particulate matter above safe limits**, the **pollution–NCD link** exacerbates **respiratory and cardiac morbidity**.

💡 **Mental Health Disorders:** Mental health conditions have sharply increased in India over the last decade.

- ✦ **Anxiety disorders** rose by **63%**, and **depression** by **26%** from 2013 to 2023.
- ✦ **Psychological distress** worsens **NCD outcomes** by affecting **lifestyle adherence** and exacerbating **biological responses** such as **hypertension**, necessitating **integrated physical and mental health services**.

💡 **Healthcare System Gaps and Inequities:** India's vast **rural areas** face inadequate **diagnostic and treatment facilities**.

- ✦ While government schemes like the **National Programme for Prevention and Control of NCDs (NP-NCD)** exist, **early detection and management** are hindered by limited **infrastructure** and **workforce shortages**, especially in **tribal and underserved regions**.
- ✦ **Disease burden** varies up to **tenfold among states**, highlighting **health inequities** aggravated by **socioeconomic disparities**.



What are the Major Government Initiatives Aimed at Preventing and Controlling Non-communicable Diseases (NCDs) in India?

💡 **National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD):**

Launched in **2010** and recently expanded, **NP-NCD** targets key **NCDs** like **cardiovascular diseases, diabetes, cancer, chronic respiratory illnesses, and stroke**.

- ✦ The program integrates **population-based screening** for individuals over 30, including **opportunistic screening** at all **healthcare facilities**.
- ✦ By **2025**, under the nationwide **“75/25 initiative,”** **42 million hypertensive** and **25 million diabetic patients** have been treated, achieving nearly **90% of its target**.
- ✦ The program also leverages **teleconsultations** and a dedicated **National NCD Portal** for monitoring. However, **infrastructural gaps** remain challenging in **rural and tribal areas**.

💡 **Ayushman Bharat Health and Wellness Centres (AB-HWCs):** With **1.5 lakh operational centres** as of **December 2022**, **AB-HWCs** provide **comprehensive primary healthcare**, including **NCD screening and wellness activities** across all **age groups**.

💡 **National Tobacco Control Programme (NTCP):** **NTCP** deploys **awareness campaigns, enforcement of tobacco legislation, and cessation support** to reduce **tobacco prevalence**, which remains at **28.6% among adults** despite prior reductions.

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✦ Special focus is placed on **youth tobacco use**, a critical **risk factor for NCDs**.

💡 **National Mental Health Programme (NMHP):**

Recognising the connection between **mental health** and **NCDs**, NMHP integrates **mental health services** within **primary care** to address rising **anxiety** and **depression**, which worsen **physical illnesses** and complicate **NCD treatment adherence**.

💡 **National Nutrition Mission (POSHAN Abhiyaan):**

Beyond **undernutrition**, the mission tackles **micronutrient deficiencies** and rising **obesity**, emphasizing **early-life nutrition** to reduce future **metabolic disorders**.

💡 **National Clean Air Programme (NCAP):** Addressing **air pollution** as a major **NCD risk factor**, NCAP implements measures to improve **air quality**, essential for lowering **respiratory** and **cardiovascular diseases** associated with **polluted environments**.

💡 **Specialized Ayurvedic Care:** The **All India Institute of Ayurveda (AIIA)** in **New Delhi** offers specialized treatments for **obesity** and related **lifestyle disorders**, combining **Panchakarma therapies**, **Ayurvedic medications**, **personalized dietary guidelines**, and **yoga therapy**.

💡 **Eat Right India Movement (FSSAI):** The **Eat Right India movement**, initiated by the **Food Safety and Standards Authority of India (FSSAI)**, includes several initiatives to ensure **safe, healthy, and sustainable food** for all.

💡 **Fit India Movement:** Launched in **2019**, the **Fit India Movement** promotes **active lifestyles** and encourages daily **physical fitness**.

✦ **Fit India School Certification** for schools integrating **physical activity** into the curriculum.

✦ **Fit India Sundays on Cycle** initiative, promoting **cycling** and **walking** in **urban spaces**.

💡 **Khelo India – National Programme for Development of Sports:** Launched in **2016-17**, the **Khelo India programme** fosters **sports participation** from schools to **elite competitions**, promoting a culture of **athletic excellence**.

✦ It provides **top-notch training** and **world-class infrastructure** to young **athletes**, ensuring **equal sports opportunities** across **rural and urban India**.



What Comprehensive Strategies can India adopt to Effectively Control the Rising Burden of Non-communicable Diseases?

💡 **Strengthen and Scale Up National NCD Screening and Management Programs:** Emphasise effective implementation of the **National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD)** aims to screen all individuals aged 30 and above for **hypertension, diabetes, oral, breast, and cervical cancers**, targeting a total of **50 crore people by 2025**.

✦ Its continuous integration with **Ayushman Bharat Health and Wellness Centres (AB-HWCs)** will enhance the **accessibility of screening and follow-up services**.

✦ The use of **digital tools** such as the **National NCD Portal** and **teleconsultation services (e-Sanjeevani)** will improve both **monitoring and access**.

💡 **Implement Multi-sectoral Policy Responses:** Prioritize implementation of India's **National Multi-sectoral Action Plan (NMAP)** for NCDs which

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emphasises **coordination across ministries** such as **Health, Environment, Finance, Education, and Commerce**.

- ✦ The plan sets **targets** including the reduction of **tobacco use by 30%, alcohol use by 10%, and salt intake by 30% by 2025**.
- ✦ Promoting policies like **'Health-in-All-Policies' approach** will help preventing **policy conflicts** and regulating **commercially-driven risk factors** including **tobacco, alcohol, and junk food**.

💡 **Expand Community Engagement and Capacity-building:** **Accredited Social Health Activists (ASHAs)** and **Community Health Officers (CHOs)** are empowered to conduct **door-to-door NCD screening, counselling, and monitoring**.

- ✦ Proper training of **CHOs and frontline workers** in **early diagnosis** and **patient follow-up** is crucial to improving **coverage and quality of care**.
- ✦ **Community awareness campaigns**, such as the **Fit India Movement** and **Eat Right India**, promote **behavioural changes** in **physical activity and nutrition**.

💡 **Integrate Mental Health with NCD Care:** The **National Mental Health Programme (NMHP)** is being expanded to address **anxiety, depression, and substance abuse**, which negatively impact **NCD outcomes**.

- ✦ **Screening for mental health disorders** at **NCD clinics** and the provision of **counselling services** will ensure a more **holistic approach to care**.

💡 **Strengthen Infrastructure and Supply Chains:** **District-level strengthening** is essential, including the establishment and upgrading of **Day Care Cancer Centres (DCCCs)** in **district hospitals** to provide accessible **oncology services**, as planned in **Budget 2025-26**.

- ✦ It is necessary to ensure the **uninterrupted supply** of **essential drugs and diagnostics** at all **healthcare levels**.

- ✦ Additionally, improving **tertiary care infrastructure** and **referral systems** is important for handling **complicated cases**.

💡 **Leverage Technology and Data-driven Approaches:** The expansion of **digital health solutions**, such as **AI for risk prediction, teleconsultations, and digital registries**, enhances **early detection, follow-up, and adherence** to treatment.

- ✦ The **National NCD Portal** should be regularly updated and used for **facility monitoring and policy decisions**.
- ✦ Furthermore, promoting **research on innovative care models** and **cost-effective interventions** helps develop solutions suitable for **resource-constrained settings**.

💡 **Address Environmental and Social Determinants:** Programs like the **National Clean Air Programme (NCAP)** are being implemented and enforced to reduce **ambient and indoor air pollution**, which is a major driver of **respiratory and cardiovascular NCDs**.

- ✦ The creation of **safe urban spaces** should be promoted to encourage **physical activity**.
- ✦ Policies that reduce **socioeconomic inequities in access to prevention and care** improve **health outcomes among vulnerable populations**.

Conclusion :

Tackling **non-communicable diseases (NCDs)** requires a **comprehensive, multi-sectoral approach** that goes beyond the health sector, integrating efforts across **nutrition, education, environment, and community welfare**. The **way forward** lies in **strengthening primary healthcare, leveraging technology, promoting healthy lifestyles, and ensuring equitable access** to quality care—paving the path toward a **healthier and more resilient India**. As **Prime Minister Shri Narendra Modi** aptly remarked, *"By making small changes in our food habits, we can make our future stronger, fitter, and disease-free,"* a vision that perfectly embodies India's collective fight against NCDs.

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Harnessing Talent for A Viksit Bharat

This editorial is based on “[How India can become a global talent hub](#)” which was published in The Hindu Business Line on 17/10/2025. The editorial proposes a two-pillar strategy to combat India’s brain drain, asserting that the nation’s journey to a developed Viksit Bharat 2047 depends on retaining its best minds and re-attracting its global diaspora.

Tag: GS Paper - 2, Human Resource, Skill Development, GS Paper - 3, Growth and Development, Science & Technology

The winners of the **Nobel Prize in Economic Sciences 2025** demonstrated that long-term economic growth stems from **innovation and technological renewal** — where new replaces old to drive progress. This insight mirrors **India’s current developmental crossroad**, as it seeks to transition from a provider of talent to a **creator of opportunity**. Achieving Viksit Bharat 2047 will depend not merely on producing engineers or scientists but on **retaining, nurturing, and re-attracting intellectual talent** as a strategic national resource.

Why Must India Prioritise Innovation and Talent Retention For its Developmental Future?

- 💡 **Innovation as the Core Driver of Long-Term Growth:** Economic history and the 2025 Nobel insights affirm that sustained prosperity comes from continuous innovation and technological renewal — not just capital or labour expansion. For India, innovation is essential to transition from **factor-driven to knowledge-driven growth**.
- 💡 **Human Capital as a Strategic Resource:** In the 21st century, **intellectual talent rivals natural resources** as the true source of national power. Retaining **skilled professionals** and nurturing scientists, engineers, and innovators is key to maintaining India’s economic and geopolitical competitiveness.
- 💡 **Bridging the Global Innovation Gap:** While India is the world’s talent supplier, its **Global Innovation**

Index (2025) ranking of 38 shows the need to convert intellectual capacity into domestic innovation. Without retention and reinvestment in R&D, India risks being a **producer of minds but consumer of ideas**.

- 💡 **Meeting the Demands of Emerging Technologies:** The global race in **AI, quantum computing, biotechnology, and semiconductors** will define economic hierarchies. India’s developmental goals, including Viksit Bharat 2047, hinge on **building indigenous capacity and talent pipelines** in these sunrise sectors.
- 💡 **Preventing Brain Drain and Ensuring Inclusive Development:** The loss of high-skilled youth to foreign economies undermines **India’s demographic dividend**. By fostering opportunities and world-class research environments at home, India can ensure that its best minds contribute to domestic innovation, job creation, and equitable growth.
- 💡 **Reversing the Cost of “Brain Drain”:** The exodus of highly skilled professionals represents a **massive national loss**, as the country bears the cost of their education while other economies reap the benefits of their innovation and tax contributions.
- 💡 **Catalysing a Multiplier Effect:** A single top-tier scientist or entrepreneur returning to or staying in India can establish a **research lab or a deep-tech startup**, creating hundreds of jobs, mentoring the next generation, and spawning an entire ecosystem.

What Key Challenges Hinder India’s Journey From Brain Drain To Brain Gain?

- 💡 **Inadequate High-End Research Opportunities:** The lack of **large-scale, aspirational “moon-shot” projects** (like a dedicated **AI mission** or a national genomics initiative) and world-class research infrastructure in academia and public institutions **fails to challenge and retain the brightest minds**.
- 💡 **Non-Competitive Academic and Professional Ecosystems:** Issues such as bureaucratic hurdles in grants, **limited autonomy in public universities**, and a shortage of senior faculty positions make academic careers less attractive compared to lucrative and streamlined opportunities abroad.

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- 💡 **Deficient Quality of Life and Systemic Inefficiencies:** Factors beyond work, such as **urban congestion, pollution, and bureaucratic red tape** in daily life, act as significant deterrents for both retaining domestic talent and attracting global professionals back to India.
- 💡 **Absence of a Coordinated National Strategy:** Unlike China's "Thousand Talents Program," India lacks a unified, high-profile national mission with clear incentives, fast-track mechanisms, and a **single accountable agency** to manage talent retention and attraction proactively.
- 💡 **Immigration and Regulatory Hurdles for Returnees:** Complicated visa processes for foreign spouses, **tax ambiguities** related to global income, and a **lack of structured re-skilling programs** create significant friction for the diaspora considering a return to India.

Government Initiatives to Foster Innovation and Talent Retention in India

- 💡 [SANKALP Scheme](#)
- 💡 [TEJAS Skilling Project](#)
- 💡 [Model Skill Loan Scheme](#)
- 💡 [Skill India Mission](#)
- 💡 [Pradhan Mantri Kaushal Vikas Yojana \(PMKVY\)](#)
- 💡 [National Apprenticeship Promotion Scheme \(NAPS\)](#)
- 💡 [National Skill Development Corporation \(NSDC\)](#)
- 💡 [Deen Dayal Upadhyaya Grameen Kaushalya Yojana \(DDU-GKY\)](#)

What Strategic Reforms are Needed to Retain and Leverage India's Intellectual Talent as a National Asset?

- 💡 **Establish the "Bharat Talent Alliance" (BTA):** Create a **high-powered, statutory body** under the Prime Minister's Office or Ministry of Science & Technology to act as the **central nerve centre**. It would coordinate across ministries, set targets, and streamline all talent-related policies.
- 💡 **Implement a Dual-Pronged Incentive Framework:**
 - ✦ **BHARAT-STAY:** Offer flexible, long-term research grants, create attractive academia-

industry hybrid careers, and develop **"Innovation Corridors"** in key cities with high-quality living standards to retain graduates.

- ✦ **BHARAT-RETURN:** Provide **fast-track visas, tax incentives, assured placement for spouses**, and dedicated re-skilling platforms to facilitate the smooth return and reintegration of global Indian talent.
- 💡 **Launch "Aspirational Mega-Projects":** Identify and fund **3-4 large-scale, mission-mode national projects** in sunrise sectors (e.g., National AI Mission, Semiconductor Self-Reliance Mission). These would serve as **magnetic focal points**, offering challenging opportunities that rival global standards.
- 💡 **Foster Robust Public-Private-Industry Partnerships:** Incentivise private sector R&D through **enhanced tax credits and co-funding for PhDs and post-docs**. Encourage the industry to set up advanced research centres in collaboration with universities to bridge the gap between research and market application.
- 💡 **Enhance the Overall Talent Ecosystem:** Grant **greater autonomy and funding to premier educational institutions** (IITs, IISERs, etc.) to compete globally. Simultaneously, enact systemic reforms to improve urban governance, ease of living, and work-life balance, making India a more attractive long-term destination.
- 💡 **Creating Innovation Corridors and Deep-Tech Ecosystems:** Develop **specialised hubs in Bengaluru, Pune, Hyderabad, and NCR**, integrating research labs, start-ups, and global investors with lifestyle-friendly infrastructure.

Conclusion

Innovation is the new currency of power, and India's future growth will rest on the genius of its people. The 2025 Nobel insights remind us that lasting progress stems from creative renewal, not mere expansion. A national mission that values intellect as a strategic resource can turn **brain drain into brain reconnection**, positioning India as a leader in the global innovation order. Ultimately, *the true wealth of a nation lies not in its mines or markets, but in the minds that shape its destiny.*

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Reimagining the Role Of National Commission for Minorities

This editorial is based on “[National Commission for Minorities has barely served those for whom it was set up](#)”, which was published in The Indian Express on 22/10/2025. It examines the relevance and functioning of the National Commission for Minorities (NCM), highlighting how limited autonomy and prolonged vacancies have weakened its role in safeguarding minority rights and promoting inclusive governance.

Tag: GS Paper - 2, Constitutional Bodies, Statutory Bodies, Government Policies & Interventions, Issues Related to Minorities, UPSC CSE, PYQ

India's framework for protecting minority rights rests on the delicate balance between constitutional ideals and institutional delivery. Among the key guardians of this vision, the **National Commission for Minorities (NCM)** was created to uphold equality and inclusion, yet its relevance today stands questioned. With prolonged vacancies, limited autonomy, and restricted powers under the **NCM Act, 1992**, the body's decline reflects deeper structural challenges in how the State approaches minority welfare. The issue is **not merely of administrative lapse but of institutional design**—where advisory mechanisms lack the authority to ensure accountability. Reimagining the NCM's role, therefore, is essential to align it with India's constitutional promise of justice, pluralism, and participatory governance.

What is the National Commission for Minorities?

- 💡 **About:** It is a **statutory body** established under the **National Commission for Minorities Act, 1992**, with the vision to **safeguard and protect the interests of minority communities**.
 - ✦ The first statutory Commission was constituted on **17th May 1993**.
- 💡 **Genesis:** The **Minorities Commission (MC)** was established in **1978** through a **Ministry of Home**

Affairs Resolution and was moved to the newly created **Ministry of Welfare** in **1984**.

- ✦ In **1988**, the **Ministry of Welfare** excluded **linguistic minorities** from the Commission's jurisdiction.
- 💡 **Composition:** It consists of a **Chairperson**, a **Vice-Chairperson**, and **five Members**, all **nominated by the Central Government**, but the **absence of a full body** has led to concerns over **inefficiency**.
 - ✦ Each member must belong to one of the **six notified minority communities**: **Muslim, Christian, Sikh, Buddhist, Parsi, and Jain**.
- 💡 **Powers and Tenure:** It has **quasi-judicial powers**, and each member serves a **three-year term** from the date they assume office.
- 💡 **Removal:** The **Central Government** may remove the **Chairperson or any Member** of the NCM if they:
 - ✦ Are **adjudged insolvent**,
 - ✦ Take up **paid employment** outside their duties,
 - ✦ **Refuse or become incapable** of acting,
 - ✦ Are declared of **unsound mind** by a court,
 - ✦ **Abuse their office**, or
 - ✦ Are **convicted** of an offence involving **moral turpitude**.

Minorities in India and their Constitutional Safeguards

- 💡 **About Minorities:** The **Constitution of India** does not provide a definition for the term '**Minority**', but the Constitution recognises **religious and linguistic minorities**.
 - ✦ The **NCM Act, 1992** defines a minority as “a community **notified** as such by the **Central government**.”
- 💡 **Minority Communities:** As per a **1993 notification** by the **Ministry of Welfare**, the **Government of India** initially recognized **five religious communities**—**Muslims, Christians, Sikhs, Buddhists**, and **Zoroastrians (Parsis)**—as **minority communities**.
 - ✦ Later, in **2014**, **Jains** were also notified as a **minority community**.

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💡 **Minorities Population:** As per the **Census 2011**, the percentage of minorities in the country is about **19.3% of the total population of the country**.

💡 **Safeguards Related to Minorities:**

- ✦ **Article 29:** Right of any section of citizens to conserve their distinct language, script, or culture.
- ✦ **Article 30:** Right of minorities to establish and administer educational institutions.
- ✦ **Article 347:** Special provision relating to the language spoken by a section of the population of any State.
- ✦ **Article 350-A:** Provision for facilities for instruction in mother-tongue at the primary stage.
- ✦ **Article 350-B:** Provision for a **Special Officer for Linguistic Minorities** and his duties.

What are the Key Issues Plaguing the National Commission for Minorities (NCM)?

- 💡 **Operational Vacancy:** The NCM is presently non-operational, as both the chairperson and member positions remain vacant. The Delhi High Court, taking cognisance of a **Public Interest Litigation (PIL)** seeking its reconstitution, has directed the Central government to respond, thereby underscoring concerns over **administrative inaction** and the perceived erosion of institutional efficacy.
- 💡 **Absence of Constitutional Status:** Since its establishment in **1978**, the Commission has faced **limited institutional support** for being accorded constitutional status. Attempts to strengthen its legal framework have remained **inconclusive**, leaving it a **statutory body with limited authority**.
- 💡 **Limited Statutory Powers:** Under the **NCM Act, 1992**, its powers are restricted to those of a **civil court**, limiting enforcement capacity. The creation of the **National Commission for Minority Educational Institutions (NCMEI)** in 2004 further narrowed its functional scope, particularly in education-related matters.

💡 **Lack of Autonomy:** The NCM functions under the **administrative control of the executive**, limiting its operational independence. Inadequate follow-up on commission reports and recommendations reflects a **weak implementation framework** and low prioritisation of minority welfare issues.

💡 **Questionable Efficacy:** Despite over **four decades of existence**, the NCM's impact on improving minority welfare remains **limited**. With a significant **annual budget** but minimal outcomes, it is often perceived as **symbolic rather than substantive**, raising questions about efficiency and accountability.

What Measures Can Strengthen the National Commission for Minorities (NCM)?

- 💡 **Grant Constitutional Status:** The **National Commission for Minorities (NCM)** should be accorded **Constitutional status**, as recommended in several of its **Annual Reports**, to ensure permanence, autonomy, and parity with other watchdog institutions like the **National Commission for Scheduled Castes (Article 338)**. Amendments to the **NCM Act, 1992**, can expand its quasi-judicial powers and enforcement capacity.
- 💡 **Strengthen Institutional Autonomy:** The NCM must function with **independent funding, staff, and reporting structure**, reducing dependence on the executive.
 - ✦ Drawing from the **Protection of Human Rights Act, 1993**, the NCM can adopt transparent appointment procedures and annual reporting mechanisms similar to the **NHRC** model to strengthen credibility and accountability.
- 💡 **Enhance Coordination:** Create a structured **NCM–State Commissions Coordination Council** to streamline policy implementation and monitor minority welfare schemes like the **Prime Minister's New 15-Point Programme** and **Multi-Sectoral Development Programme (MSDP)**. This would ensure uniform standards and shared accountability.
- 💡 **Integrate Educational and Economic Empowerment:** In line with the **Sachar Committee (2006)** and **Ranganath Misra Commission (2007)**

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recommendations, focus on **educational inclusion** through modernisation of **madrasas**, expansion of **higher education scholarships**, and skill-based training. Collaboration with the **National Commission for Minority Educational Institutions (NCMEI)** can ensure **institutional synergy**.

- 💡 **Institutionalise Data-Driven Monitoring Mechanisms:** Develop a **Minority Welfare Dashboard**, akin to the **National Judicial Data Grid (NJDG)**, to track fund utilisation, scheme coverage, and outcomes for each minority community. **Evidence-based policymaking** will improve transparency, efficiency, and public trust in minority welfare governance.

Conclusion

The **National Commission for Minorities** was conceived as a guardian of India's pluralistic spirit and a protector of minority rights. However, over time, it has drifted into symbolic relevance, constrained by limited powers, vacancies, and weak institutional will. Revitalising its **autonomy, constitutional backing, and accountability** is essential to transform it from a passive observer into an active defender of justice and inclusion. A commission that lacks real authority cannot safeguard rights—it merely adorns the architecture of governance without strengthening it.

Empowering Domestic Workers in India

*This editorial is based on “**We need a law to protect domestic workers**”, which was published in The Hindu on 22/10/2025. The article argues that India urgently needs a comprehensive national law to protect domestic workers' rights, ensure fair wages and social security, and formally recognise domestic work as dignified and regulated employment.*

Tag: GS Paper - 2, Government Policies & Interventions, Welfare Schemes, Issues Relating to Development, Issues Related to Children, Issues Related to Children, Issues Related to SCs & STs, Human Resource

Every day, **millions of domestic workers** across India power households, yet their **contributions** remain largely

invisible and unprotected. Operating in **private homes**, often without **formal contracts**, **minimum wages**, or **social security**, they face **exploitation** and **precarious working conditions**. With the **Supreme Court** urging legal reform, the challenge now is to secure **dignity, fair pay**, and **recognition** for this **indispensable** but **neglected workforce**.

What are the Demographic Trends and Legal Frameworks for Domestic Workers (DW) in India?

- 💡 **About:** According to the **International Labour Organisation (ILO) Convention No. 189 on Domestic Work (2011)**, domestic workers are defined as “any person engaged in **domestic work** within an **employment relationship**.”
- ✦ **Domestic work** itself is described as **work performed in or for a household or households**, which includes a broad range of tasks such as **cleaning, cooking, washing and ironing clothes, caring for children, elderly or sick family members, gardening, guarding the house, driving for the family, and even taking care of household pets**.
- 💡 **Demographic Trends:** The **National Domestic Workers' Movement (NDWM)** estimates the number of domestic workers in India to range from 4.2 million to over 50 million, reflecting data variability due to informal employment.
- 💡 According to **NSSO (2012)**, India had **3.9 million (39 lakh)** domestic workers, of which **2.6 million (26 lakh)** were women.
- 💡 As of **July 2023**, **2.81 crore** domestic and household workers have registered on the **e-SHRAM portal**.
- 💡 In **urban India**, domestic work is the **second-largest sector for female employment**, emphasising the need for **cities to understand and protect domestic workers (DWs)**.
- 💡 **Constitutional Mandates:**
 - ✦ **Fundamental Rights:** Articles **14, 15, and 21** of the Constitution collectively ensure **equality before law, non-discrimination, and the right to life with dignity**.

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✎ These form the constitutional foundation for extending legal and social protection to domestic workers, often among the most marginalised sections of the labour force.

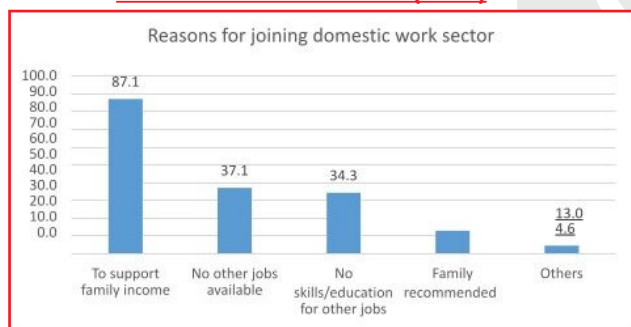
✦ **Directive Principles of State Policy (DPSPs):**

Articles 39, 41, 42, and 43 obligate the State to secure **fair working conditions**, the **right to work and social security**, **humane conditions of employment**, and a **living wage with a decent standard of life**.

✎ Together, they guide legislative and policy action towards safeguarding domestic workers' welfare.

💡 **Legal Framework:** India does not have a **comprehensive central legislation** governing domestic work.

✦ Presently, domestic workers are notionally included under four **labour codes** — the **Code on Wages (2019)**, **Code on Social Security (2020)**, **Occupational Safety, Health and Working Conditions Code (2020)**, and **Industrial Relations Code (2020)**.



What are the Key Challenges Faced by Domestic Workers in India?

💡 **Lack of Legal Protection and Recognition:** Domestic workers are largely excluded from **formal labour laws** and **social security schemes** in India.

✦ Despite being covered under broad **labour codes**, there is no **dedicated, enforceable legislation** specifically protecting their **rights**.

✦ The **Supreme Court**, in the **Ajay Malik (2025)** case, has underlined the **urgency** for a **legal framework** to **protect** and **regulate domestic workers' rights**.

✎ The **judgement** stated, “Any avenue for **employment—domestic help**—being opened to **marginalised women** merit celebration” and that the **legal gaps** must be **plugged** to ensure the **rights** of this **indispensable workforce** for **Indian households**.

💡 **Low and Irregular Wages:** Domestic workers earn, on average, only about **one-third of wages** compared to other sectors in **India**, with many receiving **irregular or delayed payment**.

✦ For example, **urban domestic workers** have been documented earning as low as **₹49 per hour** through **emerging platforms**, significantly undercutting **informal local wage norms**.

✦ **Wage determination** remains largely **informal**, and there is no **uniform national minimum wage**, though some **states** have adopted **minimum wage laws**, including for **domestic work** (Kerala, Karnataka, Andhra Pradesh).

💡 **Informality and Absence of Written Contracts:** Most domestic workers lack **formal written contracts**, which hinders **wage negotiation**, **job security**, and **legal recourse**.

✦ This **informality** keeps **domestic work** hidden within **private homes**, contributing to **invisibility** in **official statistics** and **policy**.

✦ Organisations like the **National Domestic Workers' Movement (NDWM)** have worked to **organise thousands of workers** to negotiate **collective rights** and demand **documented contracts** to curb **exploitation**.

💡 **Excessive Working Hours and Abuse:** The **International Labour Organisation (ILO)** has described **domestic work** as a potential site of “**modern slavery**”, where workers—particularly **women and minors**—remain highly vulnerable to **abuse**, **exploitation**, **forced labour**, and **human trafficking** due to the **informal and unregulated nature** of the sector.

✦ **Domestic workers** frequently work **12-16 hours daily** without guaranteed **holidays** or **paid leave**.

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✎ This excessive work burden, combined with low wages, severely diminishes their quality of life and well-being.

💡 **Lack of Access to Social Security and Healthcare:** Domestic workers are typically excluded from provident funds, health insurance, maternity leave, or paid sick leave.

✖ Their working conditions expose them to occupational hazards from manual chores and chemical exposure, but access to healthcare is scant.

✖ Welfare schemes implemented through some state-level domestic workers' welfare boards cover only a small fraction of the workforce, and many workers remain unaware or unable to access social security benefits.

💡 **Social Stigma and Discrimination:** Domestic work is socially viewed as low-status "women's work," primarily performed by marginalised castes such as Dalits and tribal populations.

✖ Such caste and class prejudices marginalise domestic workers further, limiting their social mobility and bargaining power.

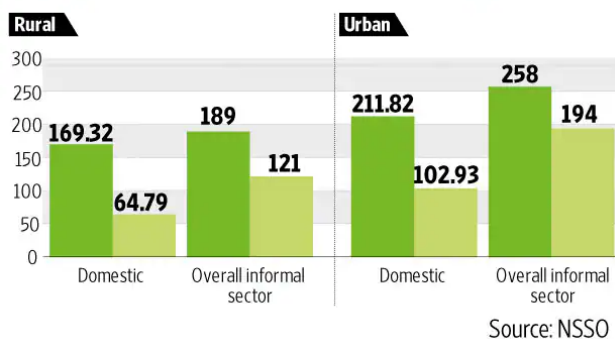
✖ Their femininity, low education, and migrant status often intersect to deepen their socio-economic exclusion.

✖ Workers often face caste-based discrimination and abuse within households.

✎ The story of Smitha, a Dalit domestic worker in Delhi who was abused and denied wages, is one among many illustrating the systemic vulnerabilities these workers face.

CHART 1: No parity

Daily wages of informal-sector workers aged 15-59 years (in ₹). ■ Men ■ Women



What are the Key Government Policies for Ensuring Domestic Workers' Welfare in India?

💡 **Draft National Policy on Domestic Workers:**

Formulated by the Ministry of Labour and Employment, this draft policy aims to legally recognise domestic workers as formal employees, ensuring their registration, minimum wage entitlements, social security benefits, protection against abuse, and rights to form unions.

✖ The policy also focuses on banning child labour in domestic service and regulating recruitment agencies to prevent exploitation.

💡 **Inclusion Under Labour Codes:** Domestic workers have been incorporated into key labour reforms like the Code on Wages (2019) and the Social Security Code (2020), which promise minimum wages, health insurance, maternity, and pension benefits.

✖ However, enforcement and benefit access for domestic workers remain limited.

💡 **State Welfare Boards and Legal Protections:** Several states — including Tamil Nadu, Kerala, Delhi, and Maharashtra — have established Domestic Workers' Welfare Boards that provide health insurance, pension schemes, education aid for children, and grievance redressal mechanisms.

✖ Tamil Nadu's board, created in 2007, offers assistance with childbirth, accidents, and marriage, pioneering formal recognition.

💡 **Digital Registration via e-Shram Portal:** Launched in 2021, the e-Shram portal has registered over 30 crore unorganised workers, including domestic workers, enabling access to various welfare schemes.

✖ This national database aims to formalise informal workers and facilitate targeted social security delivery.

💡 **Anti-Trafficking and Child Labour Prevention:** The government enforces the **Child Labour (Prohibition and Regulation) Act, 1986** and coordinates rescue and rehabilitation programs in collaboration with NGOs to prevent child labour in domestic work.

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💡 **Skill Development and Awareness Programs:** NGOs and government bodies conduct training workshops to empower domestic workers with knowledge of their rights, skill enhancement, and collective bargaining power.

✦ SEWA Delhi, for example, organises domestic worker unions and campaigns to secure decent wages, safe conditions, and paid leave.

💡 **Legal Aid and Grievance Redressal:** Fast-track courts and complaint helplines are being proposed and set up to handle domestic worker abuse and workplace violations efficiently.

✦ Implementation of the **POSH Act 2013** is emphasised to protect domestic workers from sexual harassment.

💡 **Regulation of Recruitment Agencies:** Proposed legislative measures seek to license and regulate placement agencies involved in domestic worker recruitment, aiming to reduce exploitation and trafficking risks.

What Measures Can Be Adopted for Further Empowering Domestic Workers in India?

💡 **Enactment of a Dedicated Domestic Workers' Protection Law:** India urgently requires a Domestic Workers' Protection Act to formally recognise domestic work as employment.

💡 The law should mandate written contracts specifying wages, working hours, benefits, and protections against exploitation and trafficking.

💡 This approach aligns with the **ILO Convention No. 189**, which India is encouraged to ratify to meet international labour standards.

💡 **Inclusion and Clarification Under Labour Codes:** Although included in the Labour Codes, explicit clarifications are needed to guarantee minimum wages, timely payment, health insurance, maternity benefits, and pensions for domestic workers.

✦ State governments should reinforce these provisions with clearer guidelines and enforcement mechanisms.

💡 **Social Security Inclusion through Robust Welfare Schemes:** Establish and empower Domestic Workers' Welfare Boards statewide.

✦ The recently introduced **Karnataka Domestic Workers (Social Security and Welfare) Draft Bill 2025** aims to widen this coverage, proposing transparent mechanisms for welfare fund collection and disbursement.

💡 **Legalising and Supporting Domestic Workers' Unions:** Promote the formation and formal recognition of domestic workers' unions, enabling collective bargaining for fair wages and conditions.

✦ The **National Domestic Workers Movement (NDWM)** is a leading example, active across 16 states.

💡 **Regulation of Working Hours, Rest Periods, and Social Security Contributions:** Enforce a maximum 8-hour workday with legally mandated overtime pay, weekly rest days, and annual leave.

✦ Institutionalise mandatory employer contributions towards provident funds, health insurance, and pension schemes for domestic workers.

✦ Offer scholarships and education support for workers' children to confront cycles of poverty.

✦ Mandate licensing and rigorous regulation of private recruitment agencies to prevent exploitation, human trafficking, and illegal wage deductions.

💡 **Awareness, Education, and Legal Literacy Programs:** Government and NGOs must conduct rights awareness campaigns targeted at both domestic workers and employers to promote fair treatment and reduce discrimination.

✦ Employers should be sensitised to ensure humane working conditions, proper contracts, and respect for workers' rights.

✦ Kerala's awareness drives and NGO-led workshops educate both parties on labour laws and protections, reducing stigma and irrational employer resistance.

✦ Public sensitisation complements legal reforms to change social perceptions.

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Conclusion:

Domestic workers, often **invisible yet vital**, deserve **legal recognition, social security, and dignity**. As **John Rawls' Theory of Justice** proposes, "*social and economic inequalities are to be arranged so that they are to the greatest benefit of the least advantaged*". Thus, India must enact a **comprehensive Domestic Workers' Protection Act**, regulate recruitment, and expand welfare schemes. **Collective unionisation and awareness campaigns** are essential for **empowerment**, ensuring millions attain **fair wages, safety, and respect**, thus transforming domestic work into dignified employment.

Reimagining the Spirit Of Multilateralism

*This editorial is based on "**Multilateralism isn't dead**", which was published in The Indian Express on 23/10/2025. The article argues that although global cooperation is weakened by nationalism, great-power rivalries, and institutional inertia, multilateralism is not dead but must be renewed through reforms, empathy, and inclusive leadership to restore legitimacy and address global crises*

Tag: GS Paper - 2, Regional Groupings, Bilateral Groupings & Agreements, Groupings & Agreements Involving India and/or Affecting India's Interests, Deglobalisation & Protectionism

As the **United Nations** marks its **80th anniversary**, the **pillars of multilateralism** stand shaken by **nationalism, great-power rivalries, and institutional fatigue**. Yet in a world fractured by **wars, climate urgency, and trust deficits**, **global cooperation** remains **humanity's lifeline**. The challenge lies not in **saving multilateralism from collapse**, but in **reforming it**—making it more **empathetic, representative, and action-driven** to meet **21st-century crises** that no **nation** can solve alone.

How has Multilateralism Facilitated Global Cooperation to Tackle Contemporary Challenges?

💡 Conflict Resolution and Peacekeeping :

- ✦ **75 Years of UN Peacekeeping Missions:** Celebrated in **2023**, marking seven decades of

global peace and security efforts through **over 70 missions** worldwide.

- 📌 **63 Active Multilateral Peace Operations:** Conducted by the **UN and regional organisations** in **37 countries**, reflecting **sustained multilateral commitment** to conflict zones.

- 📌 **High-Performing Specialised Capabilities:** The **2023 Peacekeeping Ministerial** prioritised **capacity building, partnerships, and mission effectiveness**, with focus on **civilian protection and mental health support** for peacekeepers.

- 📌 **Technological Advancements:** Integration of **Artificial Intelligence (AI), UAV surveillance, blockchain logistics, and cybersecurity systems** modernises peacekeeping, enhancing **situational awareness and transparency**.

- 📌 **Successful Transitional Administrations:** Missions like **UNTAES (Eastern Slavonia)** and **UNMIK (Kosovo)** serve as **benchmarks** for **effective peacebuilding and post-conflict governance**.

- 📌 **Gender Inclusivity:** Increased **deployment of female peacekeepers** and **gender-responsive mission planning** mark progress toward **inclusive and equitable peacekeeping**.

- ✦ **Peace and Security Diplomacy by BRICS:** **BRICS-led diplomatic efforts**, including **mediation in conflict zones like Ukraine and prisoner release negotiations**, exemplify how **multilateral and regional blocs** are sustaining **peacebuilding efforts** amid **Security Council gridlock**, highlighting **pragmatic multilateralism**.

- 📌 **BRICS reaffirmed "African Solutions to African Problems"** as well as called for a **Gaza ceasefire**.

💡 Climate Change:

- ✦ **Paris Agreement Goals:** The Paris Agreement aims to limit global warming to well **below 2°C above pre-industrial levels**, with efforts to limit the increase to **1.5°C**.

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- ✦ **New Collective Quantified Goal (NCQG):** The COP29 agreement aims to triple climate finance for developing countries from USD 100 billion to USD 300 billion annually by 2035 under the New Collective Quantified Goal (NCQG), addressing critical climate finance gaps.
- ✦ The **Global Plastics Treaty Negotiations:** It is an international legally binding instrument being negotiated under the United Nations Environment Assembly (UNEA), aiming to end plastic pollution globally.
- ✦ **International Ocean Governance and Sustainable Use:** The **2025 UN Ocean Conference** in Nice united subnational governments and scientific communities to accelerate SDG14 progress, illustrating multilevel governance's role in protecting marine resources and fostering innovative solutions to ocean sustainability challenges.
- ✦ **UN Summit of the Future and SDG Pact for the Future:** In September 2024, the UN summit reaffirmed commitments to SDGs with the Pact for the Future, incorporating over 50 transformative action points to promote peace, inclusive societies, climate action, and reform of the multilateral system itself for enhanced global governance.

💡 Global Health:

- ✦ **WHO-led COVID-19 Coordination:** The **World Health Organisation (WHO)** coordinated global responses during the COVID-19 pandemic, providing guidelines, facilitating research, and supporting countries in managing the health crisis.
- ✦ **COVAX Initiative:** COVAX, co-led by WHO, Gavi, CEPI, and UNICEF, aimed to ensure equitable access to COVID-19 vaccines.
 - 📎 By the end of 2023, it had delivered nearly 2 billion doses to 146 economies, averting an estimated 2.7 million deaths in lower-income countries.
- ✦ **Transition to Regular Immunisation:** As of December 2023, COVID-19 vaccinations transitioned to regular immunisation

schedules, with COVAX concluding its operations.

💡 Economic and Trade Stability:

- ✦ **WTO Dispute Settlement:** The **World Trade Organisation (WTO)** continues to facilitate the resolution of trade disputes among member countries, promoting a rules-based international trading system.
 - ✦ **Trade Tensions and WTO's Role:** Recent trade tensions, such as the U.S. imposing new tariffs on Chinese imports, have led to formal complaints lodged with the WTO, highlighting the organization's role in addressing trade disputes.
 - ✦ **Global Financial Architecture Reform at FfD4:** The **Fourth International Conference on Financing for Development (FfD4)** in Seville focused on reforming international financial systems to support sustainable development, emphasizing fair access, fiscal space protection, and alignment of financial flows with SDGs, with active participation from the **Global South**.
 - ✦ **South-led Development Priorities at G20 Johannesburg:** Under **South Africa's presidency of G20**, emphasis was placed on integrating medium and smaller African economies into global value chains, fostering solidarity and sustainability, and addressing structural economic weaknesses, showing the growing influence of emerging markets in shaping multilateral agendas.
- #### 💡 Human Rights and Humanitarian Action:
- ✦ **Refugee Resettlement:** In 2023, UNHCR submitted 155,500 refugees to states for resettlement, with 158,700 refugees returning to their countries of origin.
 - ✦ **Resettlement Needs:** The **UN Refugee Agency** estimates that 2.5 million refugees worldwide will need resettlement in the coming year, emphasising the ongoing need for international cooperation in addressing displacement.
 - ✦ **Human Rights Monitoring:** The **UN Human Rights Council** continues to monitor and address human rights violations globally,

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providing a platform for dialogue and accountability.

What is Multilateralism?

💡 **About: Multilateralism** refers to a system of international relations in which **three or more countries cooperate** based on **agreed norms, rules, and institutions** to address issues of common interest.

- ✦ It contrasts with **unilateralism**, where a single nation acts independently, or **bilateralism**, where two countries interact directly.
- ✦ Multilateralism emphasises **collective decision-making, shared responsibilities, and coordinated action** to achieve global peace, security, and sustainable development.

GLOBAL REACH

Key multilateral institutions

Institution	Headquarters
United Nations	New York
World Bank	Washington DC
International Monetary Fund	Washington DC
Asian Infrastructure Investment Bank	Beijing
New Development Bank or Brics Bank	Shanghai
Shanghai Cooperation Organisation	Beijing
RCEP	Hanoi
OPEC	Vienna
European Central Bank	Frankfurt
FATF	Paris
Bank for International Settlements	Basel
South East Asian Central Banks Centre	Kuala Lumpur
ICANN	Los Angeles
WTO	Geneva

What are the Major Challenges Facing Multilateralism in Today's Complex Global Order?

💡 **Geopolitical Rivalries and Competitive Multilateralism:** The multilateral system is increasingly a stage for **geopolitical competition** rather than **cooperative governance**.

- ✦ The **US-China rivalry** overshadows many **international forums**, where **powerful states** engage selectively to advance **strategic interests**.
- ✦ For instance, **China's establishment of the Asia Infrastructure Investment Bank (AIIB)** challenges the **US-dominated World Bank**, reflecting efforts to reshape **global development financing**.
- ✦ **Russia's use of its UN Security Council veto** to block **resolutions on Ukraine and Syria** exemplifies how **institutions** can be used to **obstruct rather than solve conflicts**.
- ✦ Meanwhile, the **BRICS coalition**, expanding to include countries like **Egypt** and the **UAE**, acts as a **counterweight to Western dominance** but faces **internal coherence challenges** due to differing **political and strategic interests**.

💡 **Economic Nationalism and Protectionism Undermining Cooperation:** Following a surge in **nationalist policies**, such as **tariffs** and **export controls**, **multilateral trade bodies** like the **WTO** have become less effective.

- ✦ The **dispute settlement system** of the WTO is currently **paralysed** due to **US opposition**, leading to **unilateral trade measures** and weakening the **rule-based global trade order**.
- ✦ This **fracturing** diminishes the **predictability** and **fairness** that multilateralism promised, creating **uncertainty in global markets**.
- ✦ Recently, the **U.S. has imposed steep tariffs on Indian exports**, disrupting trade flows and affecting sectors like **textiles, pharmaceuticals, and engineering goods**.
 - 📎 According to a report by **Global Trade Research Initiative (GTRI)**, the **duties** will affect **\$60.2 billion** worth of **Indian exports**, encompassing **textiles, gems and jewellery, shrimp, carpets, and furniture**.

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💡 **Fragmentation Due to Rise of Minilateral and Regional Blocs:** In response to **UN** and **WTO** gridlock, smaller coalitions like **AUKUS**, the **Quadrilateral Security Dialogue (Quad)**, and regional blocs take on specific **security** and **economic** roles.

✦ While pragmatic, this leads to **fragmented governance** with **overlapping mandates**, risking **incoherence** and **uneven burden-sharing** in addressing **global challenges** such as **climate change**, **pandemics**, and **cybersecurity**.

💡 **Climate Change Inaction Despite Agreements:** Despite landmark treaties like the **Paris Accord**, **climate commitments** remain **insufficient** to limit **global warming** adequately.

✦ **National interests** often override **collective goals**, delaying action on **emissions reduction** and **adaptation financing**, particularly affecting **vulnerable Global South** countries.

✦ This highlights the tension multilateralism faces between **sovereignty** and **global common good**.

💡 **Institutional Rigidity and Obsolescence:** Many **multilateral institutions** were created in the **mid-20th century**, reflecting a **unipolar world** dominated by **Western powers**.

✦ Today, they struggle to accommodate the **rise of new powers**, **alternative political-economic models**, and **new issues** like **governance of AI**, **cryptocurrencies**, and **digital trade**.

✦ As **states compete** for **technological supremacy**, **cooperation** becomes more difficult, leaving **gaps in global governance** that **multilateral institutions** must urgently address.

✦ This **disconnect** limits their **legitimacy** and ability to address **modern challenges**, necessitating **urgent reforms**.

✦ **Vaccine nationalism** during **COVID-19** highlighted these **trust deficits** when **wealthier nations hoarded supplies**, undermining the notion of **equitable global solidarity**.

What are India's Key Initiatives to Strengthen Multilateralism Globally?

💡 **UN Peacekeeping Contributions:** Since the 1950s, India has deployed over **290,000 peacekeepers** to more than **50 UN missions** worldwide, making it the **largest contributor** to **UN peacekeeping efforts**.

✦ It also hosts **training centres** like the **Indian Centre for UN Peacekeeping**, enhancing **capacity building** for **global peace operations**.

💡 **MAHASAGAR Vision:** Launched in **2025**, this doctrine emphasises **mutual and holistic advancement**, promoting **regional security** and **economic growth**, particularly in the **Indo-Pacific** and **Indian Ocean** regions.

💡 **Strategic Partnerships:** India actively participates in **multilateral forums** like **BRICS**, **QUAD**, and **ASEAN**, fostering **cooperation** on **security**, **technology**, **trade**, and **climate actions**.

✦ For example, the **India-Middle East-Europe Economic Corridor** seeks to enhance **intercontinental connectivity**.

💡 **Global Health Diplomacy:** India's **'Vaccine Maitri' initiative** supplied **vaccines worldwide**, reflecting its **leadership** in **global health multilateralism**.

💡 **Climate Action and South-South Cooperation:** India advocates for **equitable climate finance** and enhanced **cooperation among developing countries** through platforms such as the **UNFCCC**.

💡 **Technology and Innovation:** Collaborative initiatives with countries like the **U.S.** on **AI**, **space**, and **critical minerals** demonstrate India's **strategic role** in **multilateral science and technology cooperation**.

💡 **Trade Agreements:** India progressively negotiates **Free Trade Agreements (FTAs)** with partners like the **UK** and **Chile** to boost **trade** under **multilateral frameworks**.

💡 **Capacity Building Programs:** Under the **India-UN Global Capacity Building initiative**, India supports **developing nations** in **governance**, **health**, and **education** sectors.

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- 💡 **Expansion of Diplomatic Outreach:** India expanded its **diplomatic footprint** significantly from **2014 to 2024**, increasing **engagement with global partners**.

What Strategic Reforms are Necessary to Revitalise Multilateralism in the Contemporary Global Framework?

- 💡 **Reimagine and Redesign Multilateral Institutions:** There should be a fundamental **reassessment of the institutional architecture** to align with today's **multipolar world**, shifting **geopolitical realities**, and **complex global challenges**.
 - ✦ **Legacy institutions** like the **IMF, World Bank, and WTO** need either **substantial reform** or replacement with more **flexible, representative bodies**.
 - ✦ For example, the **WTO** could incorporate **plurilateral agreements** to manage **fragmented global trade** more effectively while retaining a **core rules-based system**.
 - ✦ The **G4 nations** have proposed **expanding the UN Security Council** from **15 to 25–26 members**, adding **six new permanent seats**: **two for Africa, two for Asia-Pacific, one for Latin America and the Caribbean, and one for Western Europe and other states**.
- 💡 **Enhance Inclusivity and Representation:** **Governance structures** must reflect contemporary **geopolitical and economic realities**, including giving **emerging economies** a greater **voice and participation**.
 - ✦ Reordering **voting shares** in **development banks** and improving **equitable decision-making** will foster **legitimacy** and encourage broader **compliance**.
 - ✦ **Multilateral development banks** should be repurposed and enhanced to **mobilize private capital** for **sustainable development** and **climate action** at scale, as envisaged by the **2025 International Conference on Financing for Development (FfD4)**.
 - ✦ **Brazil's consistent high score** on the **UN Multilateralism Index** exemplifies **constructive engagement** by **emerging powers** as a model.

- 💡 **Focus on Core Global Public Goods: Multilateralism** should concentrate on providing **global public goods**—**climate protection, pandemic prevention, global financial stability, digital governance, and peacebuilding**—which require **collective action** that no single country can manage alone.

- ✦ The **UN Summit of the Future's Pact for the Future** highlights the need for **transformative actions** to strengthen this focus, including **reforming the international financial architecture** for **climate finance** and **health security**.

- 💡 **Rebuild Trust and Enhance Transparency:** To counter **public disillusionment**, **multilateral institutions** must become more **transparent, accountable, and communicate benefits** clearly to **global citizens**.

- 💡 **Strengthening civil society and private sector engagement** in **governance processes** is crucial for **legitimacy**, accompanied by a renewed emphasis on delivering **tangible outcomes** such as **equitable vaccine distribution** and **climate resilience**.

- 💡 **Strengthen Multilateralism in Digital and Technological Governance:** New **governance frameworks** must address **AI safety, cybersecurity, biotechnology, and digital trade**.

- ✦ These **fast-evolving fields** necessitate **agile and collaborative oversight** to **mitigate risks** and **standardise norms globally**.
- ✦ The **Global Digital Compact** adopted at the **UN Summit of the Future** encapsulates this agenda.

Conclusion:

The world's greatest challenge today is not the **absence of crises**, but the **absence of cooperation**. In the present era, **multilateralism** stands **wounded but not dead**—its **survival** depends on **renewal, not nostalgia**. True progress demands the recognition that **no nation is truly sovereign unless all are**. The **way forward** lies in **bold institutional reforms, inclusive leadership, and a revitalised commitment to cooperation** that transcends **national interests** in pursuit of **global solidarity, peace, and collective well-being**.

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AI-Generated Content Regulation in India

This editorial is based on “Synthetic media: On labelling of AI-generated content”, which was published in *The Hindu* on 24/10/2025. The article discusses India’s proposed amendments to the IT Rules, 2021, which mandate clear labelling of AI-generated or synthetic content across social media platforms to curb deepfakes, enhance transparency, and protect public trust in digital information.

Tag: GS Paper - 3, Artificial Intelligence, Scientific Innovations & Discoveries, IT & Computers GS Paper - 2, Government Policies & Interventions.

In the **digital age**, the rise of **AI-generated content** has transformed how **information** is **created** and **consumed**, bringing unparalleled **innovation** alongside serious **challenges**. India’s proposed mandatory labelling of **synthetic media** reflects an urgent response to the escalating risks of **deepfakes** and **misinformation** that threaten **public trust** and **democratic processes**. With concerns about **misuse**, **accountability**, and **transparency** at the forefront, this **policy** aims to empower **users** to discern **authentic content** while balancing **innovation** with **regulation** in a rapidly evolving **technological landscape**.

What Are the Key Features of the Proposed IT Rules Amendment for AI-generated Content Regulation in India?

- 💡 **Mandatory Labelling of AI-Generated Content:** The Ministry of Electronics and Information Technology (MeitY) has proposed amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 to address the misuse of synthetically generated content, including deepfakes.
 - ✦ The new rules require mandatory labelling of all content that is **artificially** or **algorithmically** created, generated, modified, or altered by AI tools in a way that appears **authentic** or **real**.
- 💡 **Labelling Requirements:**
 - ✦ For **visual content**, labels must cover at least **10%** of the total **display area**.

- ✦ For **audio content**, labels must be **audible** during at least **10%** of the total **duration**.
- ✦ A permanent **metadata identifier** or **watermark** must be embedded to ensure **traceability** and prevent **tampering**.

- 💡 **User Declaration:** Platforms must obtain a **declaration** from **users** at the time of **uploading** whether their content has been created or modified using **AI** or any **synthetic process**.
- 💡 **Technical Verification:** Platforms must deploy “**reasonable and proportionate technical measures**”, such as **automated detection tools**, to verify the **accuracy** of **user declarations**.
- 💡 **Shared Responsibility:** Both **creators** and **hosting platforms** (such as **YouTube**, **Instagram**, and **X**) are equally responsible for ensuring proper **labelling** and may lose **safe harbour immunity** if they fail to **comply**.
- 💡 **Scope of Coverage:** The definition of “**synthetically generated information**” covers **text**, **images**, **video**, and **audio**, expanding beyond traditional **deepfakes** to include all **computer-generated modifications**.
- 💡 **Implementation and Feedback:** The **draft** was opened for **public** and **industry feedback** until **November 6, 2025**, after which it will be **finalised**.

How to Recognize Deepfake Content



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What are the Key Factors Contributing to the Rising Threat of Deepfakes and Online Misinformation in India?

💡 **Proliferation of Advanced AI Software and Deep Learning Techniques:** The availability of open-source deepfake creation tools like DeepFaceLab and ChatGPT has made it easier for malicious actors to produce hyper-realistic videos and audio.

- ✦ For instance, in 2024, over 8 million deepfake files were detected globally, a 16-fold increase from 2020, with India witnessing a significant surge.
- ✦ Deepfake cases in India have surged by 550% since 2019, with losses projected at ₹70,000 crore in 2024 alone, underlining the growing economic and security threat posed by synthetic media.
- ✦ These tools enable easy creation of politically motivated fake videos, such as doctored speeches of leaders, complicating verification efforts.

💡 **Escalating Financial Frauds and Cybercrimes:** Deepfake technology is increasingly used for financial scams, voice phishing, and identity theft.

- ✦ Globally, deepfake fraud attempts have increased by a whopping 31 times in 2023 — a 3,000% year-on-year increase.
- ✦ An Indian case in July 2023 involved a 73-year-old man fooled by a deepfake video of his former colleague, leading to a ₹40,000 scam (about USD 500).

💡 **Manipulation of Electoral Processes and Political Misinformation:** Deepfakes are exploited to influence elections by spreading false speeches, forged interviews, and doctored video endorsements.

- ✦ During India's 2024 general elections, fake videos of politicians were disseminated across social media platforms, eroding public trust and posing risks to democratic integrity.

- ✦ Such misinformation campaigns are often designed to polarise voters or discredit opponents.

- ✦ Platforms like WhatsApp, Telegram, and TikTok facilitate quick dissemination of deepfakes, often before media outlets or authorities can verify content.

💡 **Inadequate Legal and Regulatory Frameworks:** Although India considers existing laws under the IT Act, 2000 and the Digital Personal Data Protection Act, 2023 to address deepfakes, there is no comprehensive law specifically targeting deepfake misuse.

- ✦ For example, Indian courts have recognised the severity of deepfake misuse but have yet to establish definitive legal deterrents.
- ✦ Legislative gaps allow offenders to operate with relative impunity, emphasising the need for specialised regulation.

💡 **Lack of Awareness and Limited Digital Literacy:** Despite rising prevalence, the general public remains largely unaware of deepfake threats.

- ✦ According to a 2023 McAfee survey, 47% of Indians have either been victims or know someone who has been affected by deepfake scams—this is one of the highest percentage worldwide.
- ✦ According to McAfee, 70% of people aren't confident they can distinguish between a real and AI-cloned voice.
- ✦ This lack of awareness makes individuals more susceptible to falling prey to misinformation.
- ✦ As the World Economic Forum's Global Cybersecurity Outlook 2025 emphasizes, the deepfake threat represents a critical test of our ability to maintain trust in an AI-powered world.
- 📎 This erosion of trust can destabilise social cohesion, especially when false videos are used to incite violence or spread misinformation.

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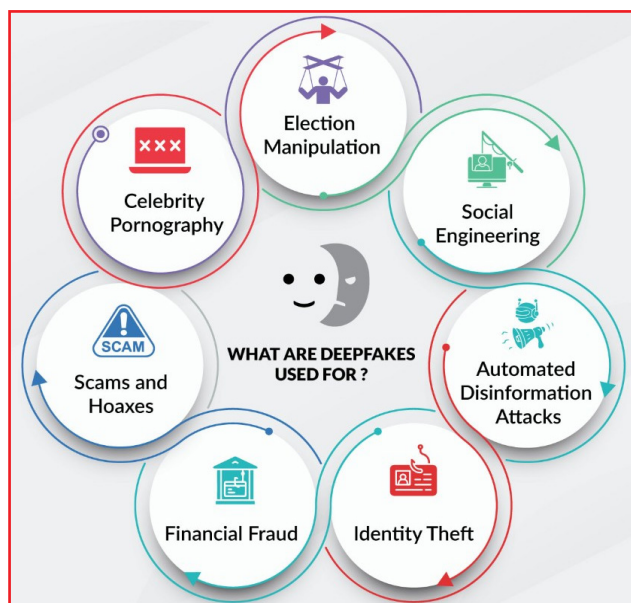


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How is India Equipped Legally and Institutionally to Tackle Deepfakes and Cyber Crimes?

💡 **Legal Framework:** India has enacted multiple laws to address online harms, including deepfakes.

✦ **Information Technology Act, 2000 (IT Act):** The IT Act addresses offenses related to identity theft (Section 66C), impersonation (Section 66D), privacy violations (Section 66E), and transmission of obscene or illegal content (Sections 67, 67A).

✎ It also empowers the government to issue blocking orders (Section 69A) and mandates intermediaries' due diligence (Section 79).

✦ **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules, 2021):** These Rules, amended in 2022 and 2023, explicitly hold intermediaries (social media platforms and others) accountable to prevent hosting or transmission of unlawful or synthetic content.

✎ They require swift removal of such content, appoint grievance officers, and ensure transparent grievance redressal through Grievance Appellate Committees (GACs).

✎ Recent advisories emphasize removing misinformation, including deepfakes, and educating users on synthetic content.

✦ **Digital Personal Data Protection Act, 2023 (DPDP Act):** This Act ensures lawful processing of personal data with user consent and security safeguards.

✎ Deepfakes that misuse personal data without consent are penalised, reinforcing privacy protection.

✦ **Bharatiya Nyaya Sanhita, 2023 (BNS):** Section 353 penalises the spread of misinformation causing public mischief, while organised cybercrime involving deepfakes can be prosecuted under Section 111, enabling broader law enforcement scope.

💡 **India's Multi-Layered Cyber Response Ecosystem:** India employs institutional, regulatory, reporting, and public awareness mechanisms to tackle cyber crimes, user grievances, and unlawful content, including deepfakes:

✦ **GACs (Grievance Appellate Committees):** Provide appellate forums to challenge decisions of intermediaries.

✦ **Indian Cyber Crime Coordination Centre (I4C):** Coordinates cyber crime actions across States, empowers agencies to issue removal notices under IT Act read with the IT Rules, 2021.

✦ **SAHYOG Portal** (managed by I4C): Enables automated, centralised removal notices to intermediaries; all authorised agencies use it to remove unlawful content.

✦ **National Cyber Crime Reporting Portal:** Citizens can report incidents, including deepfakes, financial frauds, and content misuse, through this portal.

✦ **CERT-In:** Issues guidelines on AI-related threats, including deepfakes; issued an advisory in Nov 2024 for protection measures.

✦ **Police:** Investigate cyber crimes.

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- ✦ **Awareness Campaigns:** MeitY organises **Cyber Security Awareness Month (NCSAM)**, **Safer Internet Day**, **Swachhta Pakhwada**, and **Cyber Jagrookta Diwas (CJD)** to educate citizens and the cyber community.



What Further Steps can India Adopt to Enhance Its Framework Against the Rising Threats of Deepfakes and Cybercrimes?

- 💡 **Stringent Legal Regulations and Clear Definitions:** Countries should develop precise legal frameworks that criminalise malicious deepfake use, including unauthorised impersonation and misinformation.
 - ✦ India's proposed amendments to the IT Rules emphasise mandatory labelling and traceability, similar to international norms in the EU's AI Act and the **UK's Online Safety Bill**.
 - ✦ Clear legal definitions of "synthetically generated information" will help in enforcement and legal accountability.
- 💡 **Mandatory Content Labelling and Metadata Embedding:** Enforce the use of prominent labels

and metadata on all AI-generated content to assist users in identifying synthetic media.

- ✦ India's draft rules mandate at least 10% surface coverage for visual labels and audio markers, aligning with global practices like the EU's AI Act, which requires machine-readable metadata.
- ✦ Technical measures should include watermarks, digital signatures, or embedded metadata that cannot be altered or removed.
- 💡 **Establishment of Specialised Regulatory Bodies:** Create dedicated institutions akin to India's GAC (Grievance Appellate Committee) and CERT-In to oversee compliance, handle complaints, and coordinate responses globally.
 - ✦ International agencies like the US's FTC (Federal Trade Commission) and the UK's ICO (Information Commissioner's Office) serve as models for oversight, investigation, and enforcement.
- 💡 **Technological Solutions:** Invest in and promote the development of AI-based detection algorithms, blockchain verification, and content authenticity platforms, as seen in efforts by companies like Amber Video and Deeptrace.
 - ✦ These tools can automatically flag or filter synthetic media, assist law enforcement, and verify content authenticity in real time.
- 💡 **International Collaboration and Data Sharing:** Form multilateral alliances like INTERPOL's Cybercrime Directorate or regional cooperation frameworks to share data, threat intelligence, and best practices on deepfake mitigation.
 - ✦ Harmonised standards and joint operations can prevent cross-border misuse and limit the spread of malicious content.
- 💡 **Incentivise Ethical AI Development and Industry Responsibility:** Encourage AI developers and platforms to adopt ethical standards, transparency policies, and compliance certifications.
 - ✦ India's draft rules require AI tools to embed watermarking and labels from the point of creation.

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✦ International practices also recommend **industry-led self-regulation**, such as the **Partnership on AI**, promoting **responsible innovation**.

💡 **Public Awareness and Digital Literacy Campaigns:** **Governments** and **civil society** should run continuous **awareness campaigns** educating users about **deepfakes**, their **risks**, and **verification techniques**.

✦ **India's Cyber Jagrookta Diwas** and **Global Internet Trust campaigns** exemplify successful initiatives.

✦ Enhancing **digital literacy** reduces **susceptibility** to **misinformation** and **deepfake manipulation**.

Conclusion :

As **Microsoft President Brad Smith** argued, "AI could be an incredible tool, but there should be **guardrails** to protect against **abuse**, **misuse**, or **unintended consequences**." The rise of **deepfakes** and **cybercrimes** demands **vigilant, multifaceted responses** that align **legal, technological, and societal efforts** globally. Moving forward, India must **strengthen international collaboration**, invest in **detection technologies**, enhance **digital literacy**, and refine laws to safeguard **democracy, individual rights, and digital trust**.

Paediatric Drug Regulation Framework in India

*This editorial is based on "**Respect the health rights of India's children**", which was published in The Hindu on 25/10/2025. The article argues that India must urgently strengthen its regulatory, ethical, and research frameworks for paediatric medicines to safeguard children's health rights and prevent tragedies like the deaths of 25 children due to contaminated cough syrup in Madhya Pradesh.*

Tag: GS Paper - 2, Government Policies & Interventions, Health, Issues Related to Children, Welfare Schemes

In recent times, the tragic **deaths** of 25 **children** in Madhya Pradesh due to **contaminated cough syrup** have

shaken the nation, exposing glaring **gaps** in India's **child healthcare** and **drug safety** systems. With **children** forming nearly 40% of the **population**, ensuring their access to **safe** and **effective medicines** is a pressing concern. Weak **regulatory oversight**, lack of **child-specific research**, and insufficient **pharmacovigilance** highlight the urgent need for **robust policies** to protect India's youngest and most **vulnerable citizens**.

What is the Constitutional and Policy Framework Governing Paediatric Medicines in India?

💡 Constitutional Provisions:

- ✦ **Article 21:** Guarantees the **right to life**, interpreted to include the **right to health**, making the state responsible for **safe healthcare and medicines for children**.
- ✦ **Article 39(f) (Directive Principles of State Policy):** Directs the State to secure that **children are given opportunities to develop healthily** and be protected from exploitation and neglect.
- ✦ **Article 47:** Directs the state to **raise nutrition and living standards**, linking child health to **public health obligations**.

💡 Policy and Legal Measures:

- ✦ **Drugs and Cosmetics Act, 1940 & Rules, 1945:** Core legal framework regulating **drug manufacture, quality, and clinical trials**, including ethical protocols for **paediatric testing (Schedule Y)**.
- ✦ **National Policy for Children, 2013:** The policy identified **Survival, Health, Nutrition, Education, Development, Protection, and Participation** as the **undeniable rights of every child**.
- ✦ **National Health Policy, 2017:** The Policy aims to attain the **highest possible level of health and well-being for all at all ages** through **preventive and promotive healthcare** and **universal access to quality health services**.
- ✦ **National Ethical Guidelines for Biomedical Research Involving Children (ICMR, 2017 update):** Sets standards for **research involving**

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minors, including **parental consent**, **minimal risk**, and **ethics oversight**.

- ✦ **Juvenile Justice Act, 2015** : It is a **legal framework in India** designed to **protect and provide care for children** who are either in **conflict with the law** or are in **need of care and protection** due to **abuse, neglect, or abandonment**.
- ✦ **UN Convention on the Rights of the Child (UNCRC, 1992)**: India's ratification obligates the state to ensure the **highest attainable health standards** and **safe medical treatment** for children.

💡 Institutional and Regulatory Framework:

- ✦ **Central Drugs Standard Control Organisation (CDSCO)**: Acts as **India's national drug regulator** responsible for overseeing **drug quality, safety, and approvals**.
- ✦ **Indian Pharmacopoeia Commission (IPC)**: It is an **autonomous institution** under the **Ministry of Health and Family Welfare, Government of India**.
 - ✍ It is responsible for **developing and updating the Indian Pharmacopoeia (IP)** the official compendium of **drug quality standards** in India.
- ✦ **Pharmacovigilance Programme of India (PvPI)**: Responsible for **monitoring adverse drug reactions (ADRs)** across India and **identifying drug safety signals**.
- ✦ **General Drugs Control Inspectorate (GDCI)**: Supports CDSCO and state authorities in carrying out **compliance checks**, **risk-based inspections**, and **sample testing** across **drug manufacturing units and retail outlets**.
 - ✍ Vital in the **detection and reporting of substandard or spurious drugs** flagged by CDSCO and in facilitating **enforcement actions**.
- ✦ **National Pharmaceutical Pricing Authority (NPPA)**: NPPA regulates prices of **essential medicines**, enforces **price caps**, and monitors **cost compliance** across pharma companies to ensure **affordability**.

- ✍ Works with **CDSCO** to ensure **essential paediatric formulations** remain **accessible and affordable**, particularly after **safety incidents** that affect **product availability**.



What are the Critical Challenges in Regulating Paediatric Medicines in India?

- 💡 **Inconsistent and Weak Regulatory Oversight**: India's **regulatory fragmentation** between the **Central Drugs Standard Control Organisation (CDSCO)** and **various state drug controllers** continues to cause **enforcement gaps**.
 - ✦ During the **2025 Madhya Pradesh cough syrup crisis**, regulators found **364 violations** at **Sresan Pharmaceuticals**, the firm producing **Coldrif**, which contained **diethylene glycol (DEG)**, a **toxic substance** found in **industrial solvents**.
 - ✦ While the **CDSCO** tightened **export testing rules**, no similar mandate exists for **domestic sales**, leaving millions of **Indian children** vulnerable to **unsafe medicines**.
 - ✦ A proposed **Centralized Real-Time Drug Surveillance Portal** under **CDSCO** remains pending since **2023**, limiting **data-sharing** between **laboratories** and **enforcement units**.
- 💡 **Absence of Dedicated Paediatric Pharmacovigilance**: Existing laws (*Pre-Conception and Pre-Natal Diagnostic Techniques Act, National Policy for Children 2013*) do not address **medicine safety for children** specifically; **Article 39(f)** of the **Constitution** enjoins the **State to protect children's health and development** but is **insufficiently operationalized** in **pharmacovigilance**.
 - ✦ **Drugs** are often only tested for use in **adults**, with **paediatric doses extrapolated from adult data**, resulting in **unsafe and non-optimized treatments** for children.

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- ✦ There are **no pediatric-specific dosage guidelines**, leading to **errors and adverse drug reactions (ADRs)** among children.

✍ In contrast, the **U.S. Pediatric Research Equity Act** mandates **child-specific studies** before **marketing approval**, ensuring **ethical trials** and **dosage calibration**, something absent in India.

- 💡 **Corruption, Negligence, and Poor Quality Control:** A recurring pattern of **toxic contaminations** shows that the problem is **systemic**, not accidental.

- ✦ In **2022–2023**, around **70 childhood deaths** in **The Gambia** and **18** in **Uzbekistan** were traced to **Indian-made syrups**.

- ✦ **Cost-cutting on purification and testing**, **weak inspections**, and **corrupt licensing practices** sustain such **contamination cycles**.

- ✦ Most **state drug control labs** lack advanced tools like **gas chromatography** or **mass spectrometers**, essential for detecting **glycol contamination**.

- 💡 **Over-the-Counter (OTC) Misuse and Parental Unawareness:**

Studies indicate most **paediatric medicine purchases** in India occur without **prescriptions**, especially in **urban slum areas** and **Tier-2 towns**.

- ✦ **Caregivers** often **double dosing** when **symptoms persist**, unaware that **syrup concentrations** vary by **brand**.

- ✦ **Unregulated sale** of **paediatric antibiotics** and **cough syrups** drives **drug resistance** and **misuse**, worsened by lack of **pharmacist education** on **child-safe dispensing**.

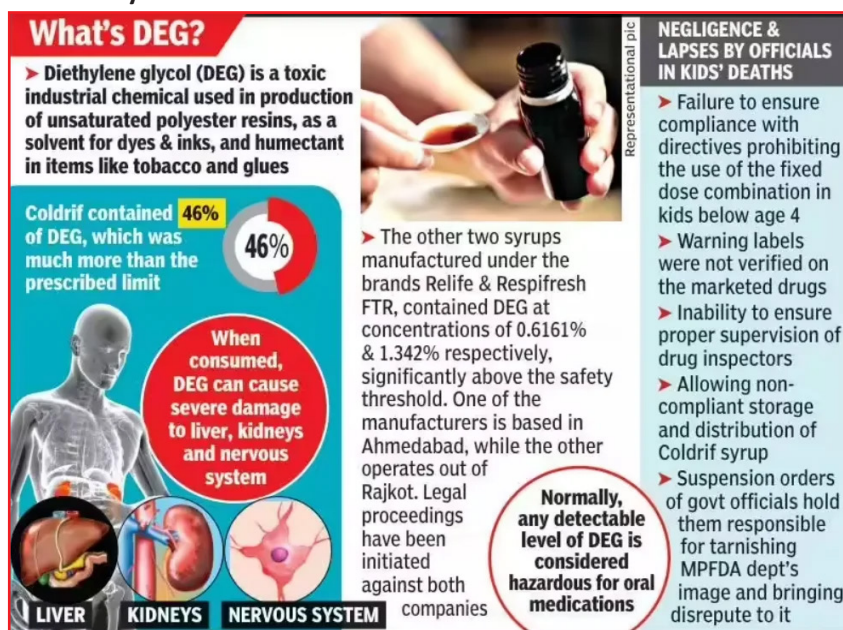
- 💡 **Absence of Comprehensive Paediatric Drug Policy:** India still lacks a **Paediatric Drug Regulation Authority** or dedicated **Child-Specific Medicines Code**, despite repeated **WHO** and **National Commission for Protection of Child Rights (NCPCR)** recommendations.

- ✦ Testing for **toxins** like **DEG** and **EG** became mandatory only for **export syrups** in **2023** after **WHO alerts**, not for **domestic sales**.

✍ **WHO officials** criticised this “two-tier safety regime” where the **global market** enjoys **better protection** than **Indian children**, calling it a violation of **equitable health rights**.

- ✦ Despite recurring tragedies—from the **Jammu (2019) child deaths** to the **Madhya Pradesh (2025) crisis**—no **parliamentary white paper** has been tabled directly focused on **paediatric drug safety**.

- ✦ **Families** rarely receive **compensation** or **transparent reporting**; most cases are dismissed as “**manufacturing defects**” without **systemic reform**.



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What are the Government Initiatives to Boost the Pharmaceutical Sector in India?

💡 **Production Linked Incentive (PLI) Schemes:** The Department of Pharmaceuticals administers three critical PLI schemes.

✦ **PLI Scheme for Pharmaceuticals:** Approved in February 2021, with a financial outlay of ₹15,000 crore for FY 2022-23 to FY 2027-28.

✍ It incentivises 55 selected applicants to manufacture high-value pharmaceutical products, including patented/off-patented drugs, biopharmaceuticals, and complex generics.

✦ **PLI Scheme for KSMs, DIs, and APIs:** Launched in March 2020, with an outlay of ₹6,940 crore for FY 2020-21 to FY 2029-30.

✍ It aims to promote domestic manufacturing of 41 critical Key Starting Materials (KSMs), Drug Intermediates (DIs), and Active Pharmaceutical Ingredients (APIs) to reduce high import dependence.

✦ **PLI Scheme for Medical Devices:** Established with a ₹3,420 crore outlay for FY 2020-21 to FY 2027-28.

✍ It provides financial incentives of 5% on incremental sales of covered medical devices produced in India, supporting cutting-edge manufacturing in sectors such as radiology, imaging, cancer care, and implants.

💡 **Promotion of Bulk Drug Parks:** Approved in March 2020, this scheme supports the development of bulk drug parks with world-class infrastructure to reduce manufacturing costs and strengthen self-reliance.

✦ Parks in Gujarat, Himachal Pradesh, and Andhra Pradesh were sanctioned, with financial aid capped at ₹1,000 crore per park or 70% of project cost (90% for Northeastern and Hilly States), for a total scheme outlay of ₹3,000 crore.

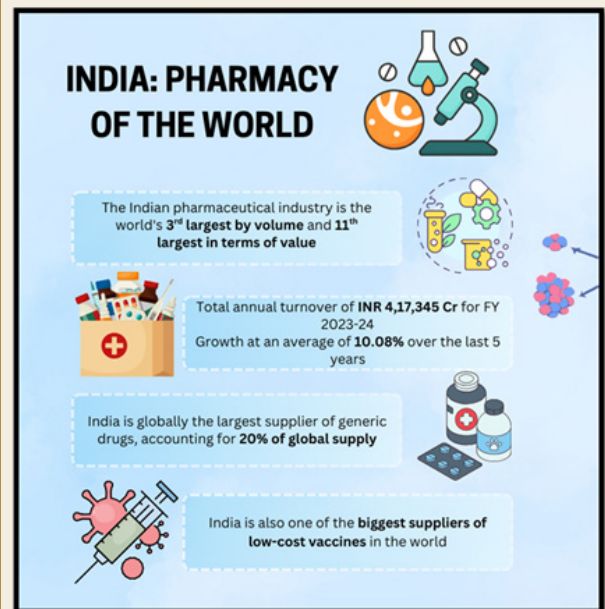
💡 **Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP):** The PMBJP aims to provide quality generic medicines at affordable prices through a nationwide network of Jan Aushadhi Kendras.

💡 **Strengthening of Pharmaceuticals Industry Scheme (SPI Scheme):** A Central Sector Scheme with an outlay of ₹500 crore for FY 2021-22 to FY 2025-26, the SPI scheme aims to support the pharmaceutical industry's infrastructure, capacity building, and innovation.

💡 **Foreign Direct Investment (FDI) Facilitation:** In FY 2024-25 (April–December 2024), FDI inflows in pharmaceuticals and medical devices reached ₹11,888 crore.

✦ Thirteen brownfield FDI proposals worth ₹7,246.40 crore were approved during this period, fostering technological advancement and global competitiveness.

💡 **Atmanirbhar Bharat and Make in India Mission:** These missions emphasise indigenous manufacturing to achieve self-reliance, reduce import dependency, and position India as a global hub for pharmaceutical exports.



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What Steps Should be Taken to Strengthen the Regulatory Framework of Paediatric Medicines in India?

- 💡 **Establish a National Paediatric Drug Safety and Ethics Authority (NPSEA):** India should create NPSEA under the **Central Drugs Standard Control Organisation (CDSCO)** to oversee **paediatric drug licensing, formulation approval, and ethical trials**.
 - ✦ For instance, the **European Medicines Agency (EMA)** operates a **Paediatric Committee (PDCO)**, ensuring all new drugs are tested for **paediatric use** before approval.
 - ✦ The **Mashelkar Committee Report (2003)** highlighted the **inadequacy of India's drug regulatory infrastructure** and called for **greater budgetary allocation** to establish a robust, "world-class" drug controlling authority.
- 💡 **Zero Tolerance Regime and Criminal Accountability:** Amend **Drugs and Cosmetics Act (1940)** to include **non-bailable offences** for deaths caused by **substandard paediatric medicines**.
 - ✦ Introduce **mandatory recall and disclosure policy**, with **real-time updates** to public health portals.
 - ✦ The **U.S. Drug Quality and Security Act (DQSA) 2013** created enforceable penalties and a **national recall system**—India could adopt similar mandates.
 - ✦ Introduce **periodic, unannounced inspections, digital audits, and whistleblower protection** for lab staff.
- 💡 **Create a National Paediatric Clinical Research and Data Ecosystem:** Establish a **national registry for Paediatric Clinical Trials (PCT-India)** to collect **pharmacodynamic and safety data**.
 - ✦ Offer **fiscal incentives** to pharma companies undertaking ethical, **India-specific paediatric R&D**.
 - ✦ The **U.S. Best Pharmaceuticals for Children Act (BPCA)** and **Pediatric Research Equity Act (PREA)** provide **federal funding and data access** for drugs studied in children.

💡 **Institutionalize Pharmacist and Caregiver Education:** Introduce **mandatory certification** in **paediatric dispensing protocols** for pharmacists under the **Pharmacy Council of India**.

- ✦ Run **nationwide caregiver awareness drives** on **dosing and label reading** through schools and **Anganwadi centers**.
- ✦ WHO's "**Make Medicines Child Size**" campaign (2007) improved **medication literacy** and **pharmacist training** in 40+ developing nations.

💡 **Mandatory Batch Testing and Supply Chain Traceability:** The approving agencies should ensure compulsory **multi-lab toxicological testing** (CDSCO + NABL-accredited labs) for all **paediatric formulations** before release.

- ✦ The government should implement **QR-based batch tracking** to trace product origin to the **raw chemical stage**.
- ✦ The **US FDA's Safe Import Alert System** uses **digitised testing certification**, adaptable for India's drug traceability.

💡 **International Benchmarking and Ethical Transparency:** India's **global pharmaceutical role** demands transparency aligned with **WHO standards and UNCRC (Article 24)**.

- ✦ India should commit to **international drug safety frameworks** such as **OECD pharmacovigilance standards** and **ICH E11(R1) guidelines** for paediatric medicine development.
- ✦ The corrective steps require **public disclosure** of **inspection reports, toxicology results, and recall information** to rebuild **public trust**.
- ✦ The **European Medicines Agency (EMA)** publicly lists all **compliance inspection outcomes**; India could adopt similar practices.
- 📎 **Institutional openness** will foster **accountability**, deter **negligence**, and strengthen India's **reputation as a global pharma hub**.

Conclusion:

As the **WHO** emphasized, "**Every child deserves safe, quality healthcare from the very beginning.**" To realize this vision, **India's pharmaceutical governance** must prioritize **ethical regulation, rigorous testing, effective**

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federal coordination, and transparent accountability. By adopting WHO-aligned quality standards, strengthening pharmacovigilance systems, and designing paediatric-focused drug policies, India can evolve from a reactive framework to a proactive guardian of children's health rights.

Building A Resilient India-Nepal Relationship

*This editorial is based on “**Winding up the clock of India-Nepal economic ties**,” which was published in The Hindu on 27/10/2025. The article explains how recent banking reforms and financial policy changes are catalysing deeper economic connectivity and investment between India and Nepal, while pointing out key challenges and opportunities in the bilateral relationship.*

Tag: GS Paper 2, India and its Neighbourhood, Groupings & Agreements Involving India and/or Affecting India's Interests, Effect of Policies and Politics of Countries on India's Interests

India and Nepal share deep economic interlinkages in trade, remittances, tourism, and connectivity. The RBI's October 2025 reforms permitting Indian banks to lend in INR to Nepalese entities aim to enhance cross-border investment and reduce currency volatility, strengthening Nepal's financial stability. However, political instability, trade imbalances, infrastructure gaps, and geopolitical competition continue to challenge bilateral growth. Strengthened strategic and economic cooperation is crucial to harnessing mutual potential and advancing regional integration.

What are the Key Features of RBI's 2025 Reforms Aimed at Strengthening India-Nepal Economic Cooperation?

- 💡 **INR Lending to Non-Residents: Authorised Dealer (AD) Banks in India** are now permitted to lend Indian Rupees (INR) to non-resident entities in Nepal, Bhutan, and Sri Lanka for legitimate cross-border transactions.
 - ✦ This measure is expected to **ease trade financing**, **reduce dependency on foreign currencies**, and **improve liquidity** for Nepalese businesses engaged in trade with Indian firms.

- ✦ It also strengthens the **use of INR as a regional trade currency**, enhancing monetary cooperation in South Asia.

💡 **Expanded Use of Special Rupee Vostro Accounts (SRVAs):** The RBI has allowed **Special Rupee Vostro Accounts** to be used for investments in corporate bonds and commercial papers, in addition to central government securities.

- ✦ This provides **foreign banks and financial institutions in Nepal** with broader investment options within India.
- ✦ It promotes **capital market linkages** and enhances **financial interdependence** between the two countries.

💡 **Transparent Currency Reference Rates:** RBI will now publish **reference rates for currencies** of India's major trading partners, including the Nepalese Rupee.

- ✦ This aims to make **INR-based trade more transparent, reliable, and predictable**, reducing currency volatility in bilateral transactions.
- ✦ It improves **price discovery** and **confidence** among traders and investors in both countries.



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What are the Major Factors that have Shaped India–Nepal Relations Over Time?

- 💡 **Historical and Civilizational Foundations:** The foundation of India–Nepal relations lies in deep civilizational and religious bonds.
 - ✦ The two nations share a **1,751 km open border** and intertwined cultural roots through **Hinduism and Buddhism**.
 - ✦ Sacred sites such as **Pashupatinath Temple (Kathmandu)** and **Lumbini (birthplace of the Buddha)** serve as spiritual bridges connecting their people.
 - ✦ The **India-Nepal Treaty of Peace and Friendship (1950)**, completing **75 years in 2025**, has been the **cornerstone of bilateral relations**, shaping **cultural, economic, and strategic cooperation** between the two nations—often described as the “**Roti-Beti Ka Rishta**”, symbolising deep **people-to-people and familial ties**.
 - ✦ Over **8 million Nepalis live and work in India**, contributing significantly to Nepal’s **remittance economy**, while **32,000 Nepali soldiers** serve in the **Indian Gorkha regiments**, symbolising military and emotional trust.
 - ✦ This **people-to-people interdependence** has ensured that political fluctuations seldom undermine the enduring social fabric between the two nations.
- 💡 **Economic Interdependence:** India is Nepal’s **largest trade and investment partner**, providing transit for nearly all of Nepal’s third-country trade.
 - ✦ **India accounts for about two-thirds of Nepal’s merchandise trade**, **one-third of trade in services**, and **one-third of total FDI**.
 - ✦ **Nepal is India’s 14th largest export destination (2024–25)**, rising from the **28th position in 2014**.
 - 📎 Major Indian exports include **petroleum, iron & steel, automobiles, machinery, and cereals**. The **open border and connectivity projects** have significantly boosted **bilateral trade**, with Indian exports accounting for nearly **16% of Nepal’s GDP**.
- ✦ The **bilateral trade framework** between India and Nepal is anchored in the **India–Nepal Treaty of Trade** and the **Agreement of Cooperation to Control Unauthorised Trade (2009)**, which together facilitate **free trade, customs cooperation, and measures to curb illegal cross-border commerce**.
- ✦ India and Nepal also share a **Treaty of Transit**, which grants **mutual transit rights** through each other’s territory via **designated routes and modalities**, facilitating smoother **cross-border trade and connectivity**.
- 💡 **Energy and Hydropower Cooperation:** Energy cooperation forms a **strategic pillar** of mutual interdependence.
 - ✦ Nepal possesses an estimated **hydropower potential of 40,000 MW**, while India faces rising electricity demand.
 - ✦ India and Nepal have signed a **long-term power trade agreement** to **export 10,000 MW of electricity** from Nepal to India over the **next decade**, marking a major step in **energy cooperation and regional integration**.
 - ✦ **MoUs** were signed between **National Hydroelectric Power Corporation (NHPC)**, India and **Vidyut Utpadan Company Ltd, Nepal** for the development of the **Phukot Karnali Hydroelectric Project** and the **Lower Arun Hydroelectric Project**, strengthening **bilateral cooperation in the hydropower sector**.
 - ✦ This cooperation not only strengthens Nepal’s revenue base but also contributes to India’s **clean energy transition**, creating a **win-win interdependence**.
- 💡 **Connectivity and Infrastructure:** India’s investments in **cross-border connectivity**—including **railways (Jayanagar–Kurtha, Jogbani–Biratnagar)**, **highways**, **Integrated Check Posts (Birgunj, Bhairahawa)**, and **petroleum pipelines**—have enhanced Nepal’s access to **sea routes and global trade**.

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- ✦ The **Motihari–Amlekhgunj Pipeline**, South Asia's **first cross-border petroleum pipeline** (69 km from **Bihar, India to Amlekhgunj, Nepal**), supplies **cleaner and more affordable fuel** by **cutting transport costs** and reducing risks of **pilferage, adulteration, and supply disruptions**.
- ✦ These initiatives, under India's **Neighbourhood First** and **Act East** policies, position Nepal as a **gateway between South and Central Asia**.
- 💡 **Strategic and Security Cooperation:** Close **defence and security cooperation** underpins bilateral stability.
 - ✦ Joint military exercises such as **Surya Kiran**, **intelligence sharing**, and **border management coordination** maintain trust and ensure peace along the porous frontier.
 - ✦ The reciprocal conferring of the **honorary rank of General** between army chiefs reflects mutual respect.
 - ✦ Security interdependence is vital for combating **cross-border crime, smuggling, and terrorism**, enhancing overall regional stability.
- 💡 **Development Partnership and Humanitarian Cooperation:** India has been Nepal's **largest development partner**, contributing over **USD 1.5 billion** since **2008** for projects in **health, education, rural electrification, and water sanitation**.
 - ✦ The **Government of India (GoI)** provides over **1,500 scholarships annually** to **Nepalese students** for pursuing courses in **India and Nepal** across diverse **academic disciplines**, strengthening **educational and cultural linkages** between the two nations.
 - ✦ India has been a **longstanding partner of Nepal** during **emergencies and natural disasters**.
 - ✍ **Nepalese nationals** in conflict zones have been **evacuated alongside Indians** under the Government of India's missions such as **'Operation Ajay'** and **'Operation Ganga'**, reflecting India's **commitment to regional solidarity and humanitarian cooperation**.

- ✦ Following the **2015 earthquake**, India's "Operation Maitri" provided immediate relief and reconstruction assistance.
- ✦ During the **COVID-19 pandemic**, India supplied **vaccines, oxygen, and medicines**, demonstrating humanitarian interdependence in crises.

India's major role in Nepal's economy

India accounts for:

66% of Nepal's merchandise trade

33% of trade in services

33% of foreign direct investments

100% of petroleum supplies

Significant share of inward remittances from workers and as pension



What are the Major Challenges Affecting India–Nepal Relations Today?

- 💡 **Political Instability and Governance Deficits:** Nepal's **political landscape** experienced intense unrest in **2025**, catalysed by **youth-led protests** against **corruption, unemployment, and suppression of dissent**.
 - ✦ This unrest escalated to **violent clashes**, the **resignation of the Prime Minister**, and **delayed elections**.
 - ✦ Such instability disrupts **policy continuity**, affecting **India–Nepal bilateral projects and cooperation**.
- 💡 **Territorial dispute and Anti-India Sentiments:** The rise of **nationalist narratives** in Nepal has introduced **diplomatic strains**.
 - ✦ Particularly, the **2020 territorial dispute** over **Kalapani, Lipulekh, and Limpiyadhura** has magnified perceptions of **Indian territorial encroachment**.
 - ✦ Political actors in Nepal have sometimes used **anti-India rhetoric** to galvanise **domestic support**, framing India as an **obstructive external force**.

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✦ Conversely, India perceives Nepal's **closer ties with China** and **review demands** on longstanding treaties (e.g., the **1950 Treaty of Peace and Friendship**) as challenges to its regional influence.

💡 **Economic and Trade Imbalance:** Nepal's **persistent trade deficit** with India remains a pressing challenge.

✦ While India supplies over **64% of Nepal's imports**, Nepal's exports to India constitute less than **10% of bilateral trade**, making Nepal **economically dependent and vulnerable**.

✦ This imbalance hinders **Nepal's economic sovereignty** and **productive capacity**.

✦ Furthermore, **tariff and non-tariff barriers** restrain Nepal's access to Indian markets, and **delays in cross-border electricity imports** detract from the full potential of **energy cooperation**.

📌 The **unofficial economic blockades**, notably during the **2015 Nepal blockade** (perceived as **Indian tacit support**), have caused **deep resentment** and **strained bilateral relations**.

💡 **China's Expanding Influence and Strategic Competition:** Nepal's **diversification of foreign partnerships**, particularly through engagement with **China's Belt and Road Initiative (BRI)**, has introduced a new dimension of **regional competition**.

✦ **Chinese investments**, including **large infrastructure projects** and **connectivity options**, provide Nepal with **alternatives** to Indian-dominated trade and development links.

✦ This **strategic realignment** complicates India's traditional **hegemony in Nepal** and poses concerns over **security near sensitive Himalayan borders**.

💡 **Water Resource Management and Environmental Concerns:** Shared **river basins** create opportunities for **hydropower** and **irrigation cooperation** but also generate **disputes and challenges**.

✦ Stalled treaties like the **Mahakali Treaty** and disagreements over **water-sharing** exacerbate bilateral tensions.

✦ Additionally, **climate change-induced flooding** in Nepal's **Terai region**, which also affects **Indian border states**, demands **coordinated disaster management** and **infrastructure development**.

💡 **Border Security and Infrastructure Gaps:** The **open 1,770 km India–Nepal border** facilitates **cultural and economic integration** but also presents serious **security challenges**.

✦ **Unregulated crossings** contribute to **smuggling, human trafficking, and infiltration risks**.

✦ **Terrorist organisations** such as **LeT, Indian Mujahideen, and Northeast insurgent groups** have been **exploiting the open border** to facilitate their operations — including **movement of trained cadres, circulation of fake Indian currency, terror financing through Nepalese banks, and smuggling of small arms, explosives, and narcotics**.

✦ Despite several **connectivity projects** like **cross-border railways, Integrated Check Posts, and petroleum pipelines**, **development gaps** persist.

📌 **Underinvestment, bureaucratic delays, and political instability** hamper **timely project completion**.

📌 These **bottlenecks** limit Nepal's **access to international markets** and **constrain bilateral trade and investment flows**.



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What are India's Key Foreign Policy Initiatives to Strengthen Relations with Its Neighbours?

- 💡 **Neighbourhood First Policy:** The policy emphasises **stronger physical, digital, and cultural connectivity** with neighbouring countries such as **Bhutan, Nepal, Sri Lanka, Maldives, Myanmar, Bangladesh, and Afghanistan**.
 - ✦ It is guided by the principles of **respect, dialogue, peace, and prosperity**, with India's support spanning from **major infrastructure initiatives to grassroots development projects**.
- 💡 **Act East Policy:** The **Act East Policy**, upgraded in **2014** from the earlier **Look East Policy**, broadens India's engagement with **Southeast Asia and the Indo-Pacific**.
 - ✦ With **ASEAN** at its core, the policy promotes **economic partnerships, cultural exchanges, and security cooperation**.
 - ✦ India has simultaneously **strengthened bilateral ties** and taken an **active role in regional forums** such as the **East Asia Summit, QUAD, and ASEAN Defence Ministers Meeting Plus**, reinforcing its strategic and diplomatic presence in the region.
- 💡 **Security and Growth for All in the Region (SAGAR) Initiative:** Launched in **2015**, **SAGAR** aims to strengthen India's **maritime cooperation and security engagement** with **Indian Ocean littoral states**.
- 💡 **BIMSTEC and SAARC Revitalisation:** India pushes for **revitalising regional groupings** like **SAARC** and promoting **sub-regional cooperation** through **BIMSTEC** with **institutionalised summits and dialogues** to foster **structured, predictable, and sustained regional diplomacy**.
- 💡 **Digital Diplomacy and Connectivity:** India has introduced **cross-border digital payment interoperability** (e.g., **UPI acceptance by Nepal**), shares **open-source governance platforms**, and promotes **capacity building in cybersecurity** to build **tech-enabled, people-centric regional connectivity and economic integration**.
- 💡 **Defence and Strategic Partnerships:** Initiatives like **joint military exercises, capacity building in defence manufacturing** under '**Innovation for Defence Excellence (iDEX)**', and **security cooperation** with neighbours enhance **regional stability** and counter **external influences**.
- 💡 **Development Partnership and Humanitarian Assistance:** India remains the **largest development partner** in the region, providing **credit, grants, disaster relief, vaccines, and evacuation support** during crises. (e.g., **2015 Nepal earthquake aid, COVID-19 vaccine sharing, Operation Ganga**).



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What Steps Should India Adopt to Strengthen its Bilateral Relationship with Nepal?

- 💡 **Strengthen Democratic Institutions and Political Stability:** India's support for Nepal's democratic processes, including electoral assistance and capacity building for federal governance, is crucial.
 - ✦ Given Nepal's political instability culminating in the 2025 youth-led protests and delayed elections, India must deepen technical cooperation and continue youth diplomacy programs to nurture a stable and inclusive political landscape.
 - ✦ Helping institutionalise democratic norms will secure bilateral projects and reduce regional security risks.
- 💡 **Deepen Economic Engagement Through Diversified Trade and Investment:** Expanding cooperation beyond traditional sectors to include IT, tourism, and agro-processing will create employment and reduce Nepal's economic dependence.
 - ✦ Negotiating a comprehensive Bilateral Economic Partnership Agreement (BEPA) that covers services, e-commerce, and better market access can address Nepal's trade deficit. (NPR 237.45 billion in FY 2024–25)
 - ✦ The increasing export of Nepalese hydropower, catalysed by long-term agreements like the 400 kV Dhalkebar–Muzaffarpur line, exemplifies the potential for mutually beneficial economic integration.
- 💡 **Accelerate Connectivity and Infrastructure Projects:** Priority should be given to operationalising cross-border railway lines such as Jayanagar–Kurtha and Jogbani–Biratnagar, upgrading Integrated Check Posts (ICPs) at Birgunj and Bhairahawa, and expanding road networks like the Terai Hualaki Highway.
 - ✦ These efforts will enhance Nepal's access to sea routes and regional markets, linking it more firmly with India's Act East Policy and boosting regional supply chains, trade, and tourism.
- 💡 **Enhance Defence and Border Security Cooperation:** The open 1,770 km border must be managed through high-tech joint patrols, biometric monitoring, and e-border posts to combat smuggling, human trafficking, and infiltration.
 - ✦ Strengthening military cooperation via joint exercises such as 'Surya Kiran' and expanding the recruitment and welfare services for Gurkha soldiers will reinforce trust and security under the framework of the 1950 Treaty of Peace and Friendship.
- 💡 **Manage Geopolitical Competition Through Transparent and Balanced Engagements:** India should increase grant-based development assistance and viable economic alternatives to converging Chinese BRI projects in Nepal, which currently exceed \$3 billion in loans.
 - ✦ Promoting trilateral dialogue among India, Nepal, and China, while leveraging frameworks such as BIMSTEC, will help avert zero-sum rivalries and maintain regional equilibrium, ensuring the sovereignty and developmental priorities of Nepal are respected.
- 💡 **Collaborate on Climate Change and Disaster Resilience:** With both countries prone to climate-induced floods and earthquakes, institutionalising joint disaster response, coordinated water resource management (e.g., revisiting the Mahakali Treaty), and sustainable environmental practices will safeguard shared resources and protect vulnerable populations.
 - ✦ Ensuring rapid humanitarian assistance and capacity-building will also foster trust and regional solidarity.
- 💡 **Expand Socio-Cultural and People-to-People Outreach:** Strengthening soft power is essential for enduring partnerships. India should increase scholarships beyond the current 1,500 annually, enhance pilgrim circuit tourism centred on Buddhist and Hindu sites, and promote cultural festivals and language programs.
 - ✦ These initiatives help build grassroots goodwill and nurture the civilizational ties underpinning India-Nepal relations.

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Conclusion:

As the Indian Prime Minister said for the enduring India–Nepal relationship, “Given the situation throughout the world, our deepening friendship will benefit the entire humanity, and the devotion and faith of both our countries in Lord Buddha bind us in one thread, making us members of the same family.” Moving forward, India should prioritise inclusive political engagement, economic diversification, enhanced connectivity, and balanced geopolitical diplomacy to ensure mutual growth and resilience in a complex geopolitical environment.

Roadmap for Sustainable Urbanisation in India

This editorial is based on “[Urban planning in India is restricted to land-use planning. This needs to change](#)”, which was published in The Indian Express on 29/10/2025. The article argues that India’s urban planning is outdated and overly focused on land-use regulation, urging a transformative shift towards an integrated economic vision, resource management, climate action, and regional planning to enable cities as engines of growth and sustainability.

Tag: GS Paper-1, Urbanisation, Population and Associated Issues, Poverty and Developmental Issues, GS Paper - 2, Government Policies & Interventions, Welfare Schemes, Issues Relating to Development.

India’s ambitious economic target of becoming a \$30-trillion economy by 2047 requires urban planning reforms that go beyond traditional land-use regulation. With over 53% of the population projected to be urban by 2050, and cities contributing nearly two-thirds of GDP, current plans lack integration of economic visioning, resource budgeting, and climate action. Addressing infrastructure gaps, environmental challenges, and governance inefficiencies through comprehensive policy reform is critical for building resilient, inclusive, and growth-oriented urban centres.

What are the Current Major Trends Shaping Urbanisation?

💡 **Definition:** [Urbanisation](#) or “urban transition” refers to the process of population shift from

dispersed rural settlements dominated by agriculture to concentrated urban centres characterised by industrial and service-based economic activities (UN, 2018).

- ✦ This results in a more **urban society** overall, which requires **adaptation** from both **rural communities** and **urban dwellers**.
- ✦ **Urbanisation** is the **primary process** through which **cities form and grow**.

💡 **Global Trends:** The world’s population has increased rapidly from 751 million in 1950 to an estimated 7.87 billion in 2021.

- ✦ According to the [United Nations \(UN\)](#), approximately 55% of people lived in **urban areas** as of 2018.
- ✦ This percentage is expected to grow to 68% by 2050, adding about 2.5 billion people to **urban areas** around the world. It is also projected that 90% of this increase will take place in **Asia and Africa**.
- ✦ Most of the world’s **fastest-growing cities** are in **Asia and Africa**. Between 2018 and 2050, the **urban population of Africa** is projected to **triple** and that of **Asia to increase by 61 per cent**, so that by 2050, most of the world’s **urban population** will be concentrated in **Asia (52%) and Africa (21%) (UN, 2018)**

💡 **Trends in India:** India’s urban population is expected to grow from 410 million in 2014 to 814 million by 2050.

- ✦ In **India**, as per the [2011 Census](#), 31% of people live in **urban areas**.
- ✦ By 2030, the number of **cities with populations exceeding 1 million** will grow from 42 to 68 (McKinsey, 2010).
- ✦ Four of India’s cities- **Ahmedabad, Bangalore, Chennai, and Hyderabad** — with currently 5 to 10 million inhabitants, are projected to become **megacities** in the coming years, for a total of **seven megacities** projected in the country by 2030 (UN DESA, 2014).

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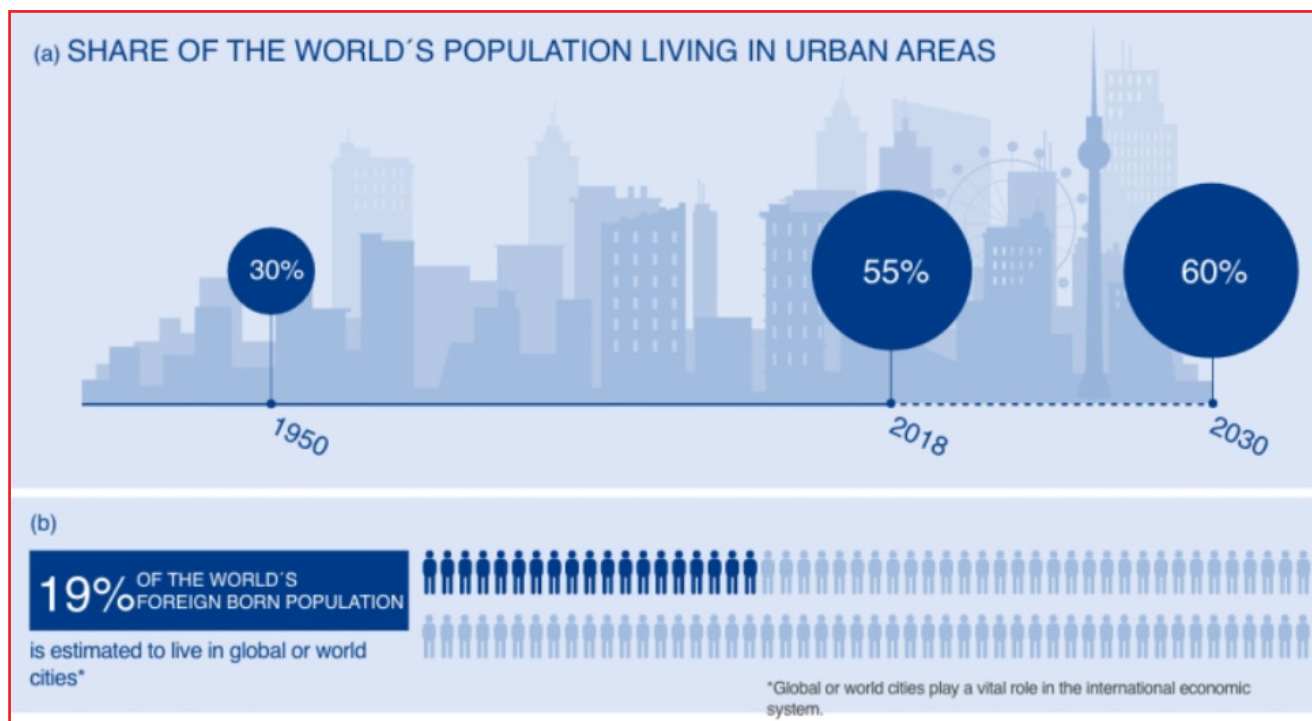


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What Factors are Responsible for the Rapid Pace of Urbanisation in India?

- 💡 **Population Growth & Migration:** India's overall population surged to approximately **1.46 billion** by mid-2025, exerting immense pressure on urban areas.
 - ✦ Driven by the search for **better livelihoods, education, and healthcare**, millions migrate from rural to urban areas each year.
 - ✦ This migration led to **Mumbai's population crossing 22 million (2018)** and **Delhi exceeding 31 million**.
 - ✦ As per the **"Migration in India, 2020–21"** report based on the **Periodic Labour Force Survey (PLFS) 2020–21**, released by the **Ministry of Statistics and Programme Implementation (MoSPI)**, the overall migration rate in India stood at **28.9%**, with **rural areas** recording **26.5%**.
 - ✍ Among total migrants, about **10.8%** reported migration due to **employment-related reasons**.
- 💡 **Economic Opportunities and Industrialisation:** Urban areas already contribute **63%** to India's GDP (NITI Aayog, 2022), a share projected to exceed **75% by 2030** and **80% by 2050 (MoHUA, 2023)**.
 - ✦ Urban centres provide **diverse employment** beyond agriculture, especially in **services and manufacturing**.
 - ✍ Bengaluru's rise as **"India's Silicon Valley"** attracted over **1 million IT professionals**.
 - ✦ **Urban jobs offer higher wages**, with **metropolitan per capita income** often **several times higher** than rural areas, accelerating **economic-driven urbanisation**.
- 💡 **Improved Infrastructure & Basic Facilities :** Development of **metro rail networks** in **Delhi, Mumbai, Chennai, and Bengaluru** has improved **urban mobility** and encouraged **urban sprawl**.
 - ✦ Expanding **national highways** and **digital infrastructure** are linking **urban hubs with smaller towns**, fostering **regional economic integration** and **urban expansion**.
 - ✦ Cities enjoy **higher survival rates** and **better healthcare**, leading to **lower mortality** and **continued population rise**.

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💡 **Environmental and Social Push Factors:** Rural distress caused by environmental degradation and socio-economic challenges acts as a major push factor driving migration to cities.

✦ **Frequent droughts, floods, and cyclones** increasingly disrupt rural livelihoods.

📎 For instance, **Cyclone Fani (2019)** displaced thousands from Odisha's coastal regions, forcing many into urban centres.

✦ **Climate change, land fragmentation, and agricultural mechanisation** further reduce rural employment, intensifying urban influx.

✦ **Seasonal farming** leads to irregular incomes, pushing workers toward urban areas in search of stable employment.

✦ **Rural-urban income disparities** and limited upward mobility push people toward cities.

✦ The rural workers are mainly engaged in low-paying agricultural or informal sector jobs, limiting livelihood opportunities and prompting migration.

📎 The **Economic Survey 2024–25** states that there has been a significant increase in the share of women workers in the agriculture sector — rising from 57% in 2017–18 to 64.4% in 2023–24.

💡 During the same period, men's participation in agriculture declined from 40.2% to 36.3%.

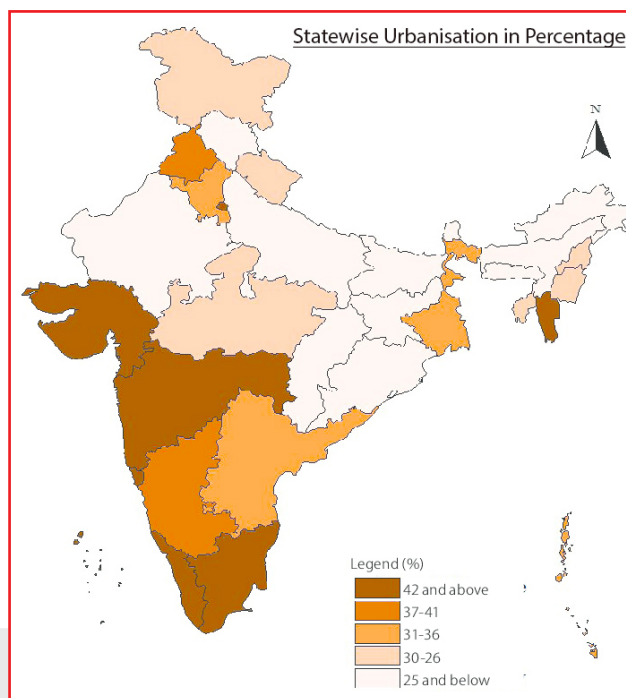
💡 **Government Policies and Urban Development Initiatives:** The **Smart Cities Mission** aims to create 100 citizen-friendly, sustainable cities, while the **Pradhan Mantri Awas Yojana (Urban)** targets 2 crore affordable homes by 2025.

✦ **AMRUT Mission** improves basic urban infrastructure like water supply and sewerage in 500+ cities.

✦ **National Urban Livelihoods Mission (NULM)** enhances skill development and employment for the urban poor.

✦ **Urban Transport initiatives** promote sustainable public and non-motorised transport to reduce congestion and pollution.

✦ These policy initiatives enhance urban infrastructure, housing, and livability, thereby accelerating urbanisation.



What are the Major Challenges Arising From the Rapid Pace of Urbanisation in India?

💡 **Infrastructure Overload:** Indian cities are under immense pressure due to rapid population growth.

✦ By 2036, urban areas are projected to house 600 million residents, or 40 percent of the population, up from 31% urban population share in 2011, leading to strained roads, public transit, water supply, sanitation, and energy infrastructure.

✦ Cities like Delhi and Mumbai face severe congestion and overburdened transport systems, incurring annual costs of approximately \$22 billion (Ministry of Road Transport and Highways).

💡 **Traffic Congestion and Air Pollution:** Traffic congestion costs India billions annually and contributes significantly to toxic air pollution.

✦ Delhi, Mumbai, and Kolkata rank among the most polluted cities globally, with PM2.5 levels exceeding WHO limits.

📎 For example, Delhi's air pollution causes around 1.2 lakh premature deaths annually.

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✦ **National policy recommendations** for prioritizing public transport and non-motorized travel often fail to translate into actionable mobility plans at the city level.

💡 **Housing Shortages and Water Scarcity:** India faces a **shortage of about 18.78 million housing units**, predominantly impacting **low-income populations**, resulting in **sprawling slums** with inadequate **sanitation, healthcare, and safety standards**.

✦ Nearly **17% of urban households** lived in **slums as of 2011**, with conditions deteriorating further as **urban demand outpaces supply**.

✦ Urban areas face **severe water stress**, with only **62% of households** having access to **pipled water**, and **wastewater treatment capacity** lagging at **30%**.

✍ For instance, the **Yamuna River in Delhi** is **critically polluted**, rendering water unsafe for consumption.

💡 **Environmental Degradation:** Rapid urban growth causes **loss of green spaces, wetlands, and water bodies**.

✦ Fast **urban sprawl** increases **waste generation**, India generates approximately **62 million tonnes of waste annually**, of which only about **75–80% is collected**, and **less than 30% is treated or recycled**.

✦ This unchecked waste disposal and urban runoff have severely impacted water quality; according to the **Polluted River Stretches Report** published by the **Central Pollution Control Board (CPCB)** in **November 2022**, **311 polluted stretches** have been identified across **279 rivers** in **30 States and Union Territories** of India.

✦ **Flooding in Mumbai (2021)** and **Bengaluru (2024)**, along with rising urban heat islands, exemplify **environmental vulnerabilities**.

💡 **Poor Urban Governance and Fragmented Planning:** Institutional weaknesses, lack of coordinated planning, and outdated regulations inhibit sustainable urban development.

✦ **Ineffective devolution of functions** listed in the **Twelfth Schedule** under the **74th Constitutional Amendment** has further

weakened urban local governance, limiting the autonomy and accountability of **Urban Local Bodies (ULBs)**.

✦ **Indian city master plans** primarily focus on **land-use containment** and **population-based service allocation**, with **minimal emphasis** on a **long-term economic vision** or transforming cities into **“Economic Growth Hubs.”**

✦ India has around **3,894 census towns** with **inadequate infrastructure** due to **slow recognition and planning**.

✦ **Urban India** generates nearly **two-thirds of the national GDP**, yet its **municipalities control less than 1% of the country’s tax revenue**.

✦ Despite high needs, only a **fraction of revenue** is generated through **property taxes**, creating **fiscal fragility** due to reliance on **central transfers**.

✦ **Urban master plans** seldom cover economic linkages between urban and adjacent rural areas.



What Comprehensive Measures Can Be Adopted to Ensure Sustainable and Inclusive Urbanisation in India?

💡 **Integrated and People-Centric Urban Planning:** India needs to adopt integrated urban planning that harmonises **spatial development** with **ecological sustainability** and **social inclusion**.

✦ **Odisha’s Rural-Urban Transition Policy** is an example promoting sustainable rural-to-urban shifts with **urban-grade infrastructure planning**.

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- ✦ Cities like **Pune** and **Ahmedabad** have pioneered in combining **land use** with **economic growth**, **health**, and **climate resilience strategies**.
- ✦ The **Ministry of Housing and Urban Affairs** advocates this approach for **balanced regional development** and **resource optimisation**.
- ✦ Countries like **Singapore** have successfully implemented **integrated urban planning** and **smart infrastructure**, serving as benchmarks for India's need for **comprehensive modernisation**.
- 💡 **Financing Urban Infrastructure through Innovative Mechanisms:** Bridging the \$6 trillion urban investment gap requires mobilising **public-private partnerships (PPPs)**, **municipal green bonds**, and **viability gap funding**.
 - ✦ Cities like **Ghaziabad** and **Indore** have successfully used **green bonds** to finance **sewage treatment** and **solar projects**, attracting **private capital** while promoting **sustainability**.
 - ✦ Strengthening **municipal finances** through **property tax reforms** and **creditworthiness assessments** are key **policy actions** recommended.
 - ✦ Cities like **Seoul** or **Singapore** have **diversified revenue streams**, including **municipal bonds** and **public-private partnerships (PPPs)**, providing models for **urban finance reforms** in India.
- 💡 **Affordable Housing and Inclusive Urban Regeneration:** To address **slum proliferation** and **housing shortages**, schemes like **Pradhan Mantri Awas Yojana (PMAY)** target constructing over **1 crore affordable homes by 2025**, integrating **green infrastructure** and **mixed-use developments** to prevent **urban sprawl**.
- ✦ Countries such as **Brazil** have combated this through **participatory slum upgrading** and **affordable housing initiatives**, providing lessons for India's **urban housing policies**.
- ✦ Thailand's **Baan Mankong** project demonstrates the potential of **community-led slum upgrading** through **secure tenure** and **infrastructure improvements**, fostering **dignity** and **social equity**.
- 💡 **Promotion of Sustainable Mobility and Transit-Oriented Development (ToD):** Cities like **Pune** and **Surat** showcase **transit-oriented development (ToD)** that emphasises **pedestrian-friendly infrastructure** and **public transport** over **car dependency**, reducing **congestion** and **emissions**.
 - ✦ India's **PM-eBus Sewa** promotes **electric bus fleets**, cutting **urban pollution**. Internationally, models from **Copenhagen** and **Singapore** illustrate integration of **cycling-friendly lanes** and **efficient mass transit** for **greener mobility**.
 - ✦ Cities like **Paris** and **London** have adopted **congestion charges** and **extensive public transport networks**, illustrating **effective demand management**.
- 💡 **Inclusive Safety and Social Equity Policies:** Strengthening **urban safety** through **community policing**, **legal enforcement**, and **gender-sensitive urban design** combats **rising urban crime**.
 - ✦ **Inclusive policies** integrating **livelihood support**, **sanitation**, and **health** enhance **social cohesion**.
 - ✦ **Holistic slum upgrading programs** focus on **empowering marginalized groups**, ensuring **equitable access to urban benefits**.
 - ✦ International experience, including **participatory urban safety frameworks** in **Medellín, Colombia**, offers replicable lessons.

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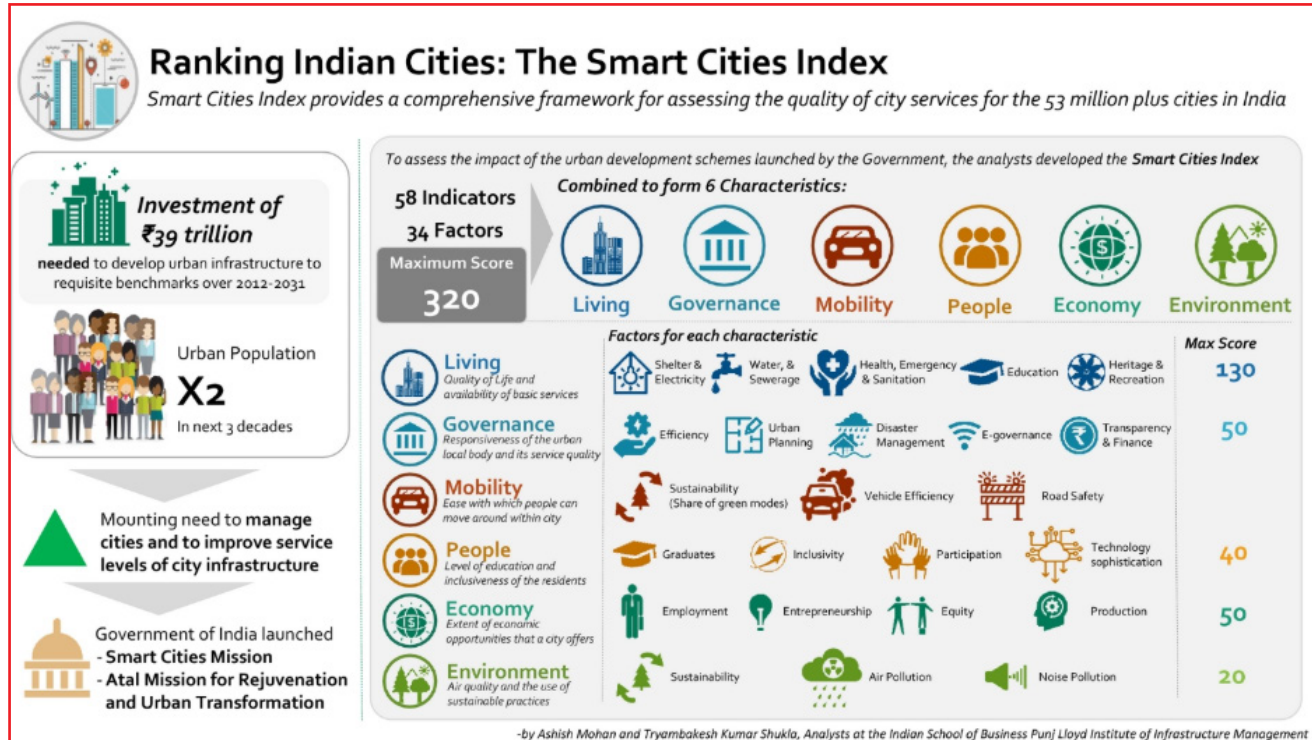


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Conclusion:

Sustainable and inclusive urbanisation in India is vital for achieving **SDG 11**, which seeks to make cities **safe, resilient, and sustainable**. As UN-Habitat expert Joan Clos observed, “Cities and towns have been, and continue to be, crucibles of innovation and advancement.” Thus, building India’s **urban future** requires **integrated planning, affordable housing, climate resilience, and digital governance**. Strengthening the **fiscal autonomy** of Urban Local Bodies (ULBs) and promoting **participatory governance** are essential for ensuring **balanced growth** aligned with the Sustainable Development Goals (SDGs), thereby fostering **prosperous and equitable cities**.

Safeguarding Political Accountability in India

This editorial is based on “**An amended Constitution Bill, its contentious issues**”, which was published in The Hindu on 30/10/2025. The article discusses the contentious 130th Constitution Amendment Bill, which proposes automatic removal of ministers upon arrest for serious offences, highlighting the tension between enhancing political accountability and upholding constitutional safeguards like the presumption of innocence and due process.

Tag: GS Paper - 2, Constitutional Amendments, Parliament, Executive, State Legislature, Judgments & Cases, Government Policies & Interventions,

The **130th Constitution Amendment Bill, 2025**, aims to remove the Prime Minister, Chief Ministers, or ministers automatically if detained for 30 consecutive days on serious criminal charges punishable by five or more years. It amends Articles 75, 164, and 239AA to enhance accountability and restore public trust. While addressing the criminalisation of politics it raises concerns over violating the presumption of innocence, potential misuse of power, and the challenge of balancing governance with constitutional rights.

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What are the Key Features of the Constitution (One Hundred and Thirtieth Amendment) Bill, 2025?

💡 **Amendment of Constitutional Provisions:** The Bill proposes amendments to **Articles 75, 164, and 239AA** of the Constitution, which deal with the **Union Council of Ministers, Council of Ministers in the states, and Ministers in Union Territories**, respectively.

✦ It seeks to provide for the **removal of the Prime Minister, a Chief Minister of a state, or any other Minister in the central or a state government**, if he is **arrested and detained in custody on account of serious criminal offences**.

✦ It also applies these provisions to the **Union Territory (UT) of Delhi**.

✦ Two other Bills have also been introduced to apply these provisions to the **UTs of Puducherry and Jammu and Kashmir**.

💡 **Grounds for Removal:** A Minister will be removed from office if:

✦ He is **accused of an offence punishable with imprisonment** for a term which **may extend to five years or more**, and

✦ He has been **arrested and detained in custody for 30 consecutive days**.

💡 **Procedure for Removal:**

✦ **At the Union Level:**

✍ A Union Minister (other than the Prime Minister) will be removed by the **President** on the **advice of the Prime Minister**.

✍ The Prime Minister must provide this advice by the **31st consecutive day** of the Minister's custody.

✍ If no advice is given by then, the Minister will **automatically cease to hold office** from the following day.

✦ **At the State Level:**

✍ The **Governor** will remove a Minister on the **advice of the Chief Minister** under similar conditions.

✍ If the **Chief Minister** is in custody, he/she must **resign by the 31st consecutive day**; failure to do so results in **automatic cessation of office** thereafter.

✦ **In the Union Territory of Delhi:**

✍ The **President**, acting on the **advice of the Chief Minister**, will remove Ministers following the same 30-day rule.

✍ If the **Chief Minister of Delhi** is detained, he/she must resign by the **31st day**, or will automatically **cease to hold office** thereafter.

✦ **In the case of the Prime Minister:**

✍ The **Prime Minister must resign** by the **31st consecutive day** of being in custody on serious criminal charges.

✍ Failure to resign by this time will result in the **automatic cessation of the Prime Minister's office** from the day thereafter.

💡 **Reappointment Possibility:**

✦ Allows **ministers to be reappointed** once released from custody or granted bail.

What is the Rationale in Favour of Introducing the Constitutional Amendment Related to Political Accountability In India?

💡 **Addressing the Widespread Criminalisation of Politics:** The alarming statistic that nearly **47% of ministers across India face criminal charges** underscores a **deep-rooted issue** in governance.

💡 Data from **ADR (Association for Democratic Reforms)** indicates that **174 ministers face serious charges** like **murder** and **sexual assault**, which undermines **public confidence** and erodes the **integrity of democratic institutions**.

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- 💡 The Bill aims to **institutionalise a mechanism for the proactive removal** of such ministers, promoting cleaner and more ethical governance.
- 💡 **Filling Legal Gaps in Disqualification Procedures:** Currently, **Indian law disqualifies legislators only after conviction**, often delayed for years due to **judicial backlog**.
 - ✦ This enables **accused ministers to retain power** despite grave allegations.
 - ✦ The Bill introduces a **preemptive removal process** based on **30 days of detention** for offences punishable by five or more years, closing a **legal loophole** and ensuring **swift accountability**.
- 💡 **Mitigating the 'Governing from Jail' Phenomenon:** **Public disillusionment** grows when leaders accused of serious crimes remain in office, eroding faith in the rule of law.
- 💡 By enforcing **swift removal upon detention**, the Bill reaffirms the government's **commitment to ethical governance** and aims to **restore citizens' trust** in democratic institutions and constitutional morality.
- 💡 The Bill's design **reduces scope for political manipulation** by setting **objective and transparent criteria-detention beyond 30 days on serious charges**, for removal.
- 💡 This ensures **procedural fairness**, minimizes **arbitrary dismissals**, and upholds **transparency and impartiality** in governance.
- 💡 **Ensuring Uniform Application Across Regions:** By extending its provisions to **Union Territories** such as **Delhi, Puducherry, and Jammu & Kashmir**, the Bill promotes **uniformity in accountability standards**.
- 💡 This prevents **jurisdictional inconsistencies** and reinforces a **pan-Indian framework** for ethical conduct in public office.
- 💡 **Balancing Accountability with Fairness:** The Bill allows **reappointment of ministers once released or acquitted**, thereby avoiding **unjust or premature penalties**.

- 💡 This provision respects the **presumption of innocence**, a **core constitutional safeguard**, while ensuring **temporary accountability** during judicial proceedings.
- 💡 **Symbolic of Ethical Governance and Constitutional Morality:** The Bill embodies a **commitment to constitutional morality**, a principle emphasised by **B.R. Ambedkar** was upheld by the **Supreme Court in the Kesavananda Bharati case(1973)**.
- 💡 It integrates **ethical principles into political accountability**, aligning governance with the values of **justice, equality, integrity, and public responsibility** enshrined in the **Constitution of India**.

What are the Key Judicial Pronouncements Regarding Ministerial Accountability?

- 💡 **Manoj Narula v. Union of India (2014):** The Supreme Court ruled there is **no legal bar** on appointing **Ministers with criminal antecedents** but advised the **Prime Minister** to avoid selecting those **charged with serious or heinous offences**.
- 💡 **Public Interest Foundation PIL (2018):** The Supreme Court held that it cannot **legislate** or add new grounds for **disqualification** beyond **Parliament's provisions**. **Parliament alone** has the power to make laws on disqualification.
 - ✦ The **SC recommended** a strong law requiring **political parties to revoke membership** and **deny tickets** to those **charged with heinous offences**.
- 💡 **Arvind Kejriwal Case (2024):** The **SC granted Arvind Kejriwal bail** in the **liquor policy money laundering case**, **barred him from official duties**, could not **compel resignation**, but he later **voluntarily resigned from office**.
- 💡 **V. Senthil Balaji Case (2025):** The Supreme Court directed **Tamil Nadu Minister V. Senthil Balaji to choose between freedom or office** after noting it had been **misled by his reappointment post-bail**, which was granted in the alleged **cash-for-jobs scam**.
 - ✦ He subsequently **stepped down from office**, and his **bail continued**.

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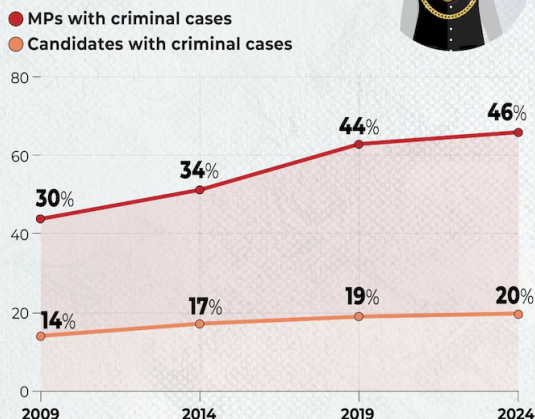


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46% MPs Face Criminal Charges

Record 251 of 543 Members of Parliament have criminal cases registered against them



Source: ADR | Graphic: Jaipal Sharma & Nishant Agarwalla



What are the Key Criticisms and Concerns Raised Against the Bill?

💡 **Violation of the Presumption of Innocence and Fundamental Rights:** One of the gravest constitutional objections to the Bill lies in its violation of the **presumption of innocence**, a foundational legal principle recognised under **Article 21 (Right to Life and Personal Liberty)**.

- ✦ The Supreme Court in *Maneka Gandhi v. Union of India (1978)* emphasised that any restriction on personal liberty must be “just, fair, and reasonable.”
- ✦ However, the Bill mandates the removal of ministers upon **detention for 30 consecutive days**, without any **judicial conviction**.
- ✦ Detention, which may result from procedural delays, denial of bail, or politically motivated arrests, cannot be equated with guilt.
 - ✎ This provision, therefore, may contradict the **natural justice doctrine of audi alteram partem (right to be heard)**.

✦ Thus, automatic disqualification on mere detention, without due process, represents a **constitutional regression** rather than moral advancement.

💡 **Potential for Political Weaponisation of Investigative Agencies:** Critics argue the Bill’s provisions can transform India’s investigative agencies into instruments of political coercion.

- ✦ In India’s competitive federal democracy, institutions like the **CBI, ED, and Income Tax Department** have frequently been accused of selective targeting of opposition leaders.
- ✦ Empirical evidence supports this concern as a 2023 *Indian Express* report found that **over 90% of political figures investigated by the ED since 2014 belonged to opposition parties**.
- ✦ The Bill, though justified in the name of “ethical governance,” risks providing the executive with a **legally sanctioned political weapon**, bypassing democratic procedures like **no-confidence motions** or judicial trials.
- ✦ This contradicts the Supreme Court’s emphasis in *Vineet Narain v. Union of India (1998)* on insulating investigative agencies from political interference.

💡 **Conflict with Established Legal and Judicial Precedents:** India’s democratic framework already provides mechanisms for disqualification through the **Representation of the People Act, 1951 (RPA)**.

- ✦ Under **Section 8**, disqualification occurs only upon conviction, not mere detention or framing of charges.
- ✦ In *Lily Thomas v. Union of India (2013)*, the Supreme Court struck down Section 8(4) of the RPA, which earlier allowed convicted legislators to continue in office pending appeal. The Court held that **disqualification must follow only after conviction**, ensuring balance between political accountability and individual rights.
- ✦ The Bill, however, introduces a **dual standard** — creating a lower threshold (detention) for ministers while maintaining conviction for

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legislators. This inconsistency breaches the equality clause of **Article 14** and could invite constitutional litigation.

- 💡 **Arbitrariness of the 30-Day Detention Period:** Critics argue that the Bill's threshold of "30 consecutive days" is **arbitrary and unreasoned**. It neither aligns with established administrative standards nor derives from any judicial logic.

- ✦ Detention for 30 days may occur due to investigation backlogs, denial of bail, or preventive custody under special laws such as the **UAPA** or **NSA**, where trials often extend for years without conviction.
- ✦ The **Supreme Court in *EP Royappa v. State of Tamil Nadu (1974)*** held that arbitrariness is the antithesis of equality.
- ✦ Without any rational nexus between detention duration and moral unfitness, the provision violates the constitutional guarantee of **non-arbitrariness under Article 14**.

- 💡 **Undermining Parliamentary Democracy and Federalism:** Parliamentary democracy is built on **collective ministerial responsibility** and legislative oversight.

- ✦ The Bill allows the removal of ministers **without parliamentary debate, vote, or confidence motion**, effectively transferring accountability from the legislature to the bureaucracy and investigative agencies.
- ✦ This dilutes the essence of **Article 75(3)** and **Article 164(2)**, which bind ministers' tenure to legislative confidence, not executive or administrative decisions.
- ✦ The ***S.R. Bommai v. Union of India (1994)*** judgment reiterated that majority and accountability must be tested on the floor of the House, not through executive notifications.
- ✦ Moreover, since detention may be ordered under central laws or by central agencies, the provision **distorts federalism** by enabling the Union government to influence state leadership indirectly.

- ✎ It may erode the spirit of **cooperative federalism** envisioned in the Constitution and emphasised in the **7th Schedule division of powers**.

- 💡 **Selective and Unequal Targeting of Ministers:** The Bill singles out the executive (Prime Minister, Chief Ministers, Ministers) while leaving legislators untouched, despite both performing public functions. Such selective accountability violates the principle of **equality before law (Article 14)**.

- ✦ Ministers are already accountable through **parliamentary conventions, cabinet responsibility, and ethics codes**.
- ✦ By introducing asymmetric disqualification standards, the Bill risks creating an **unequal political hierarchy**, where similar offences attract different consequences depending on office.

Committee Recommendations Against Criminalisation of Politics:

- 💡 In **1983**, the **Vohra Committee on Criminalisation of Politics** was constituted with an objective to identify the extent of the political-criminal nexus and to recommend ways in which the criminalisation of politics can be effectively dealt with.
- 💡 The **Law Commission** submitted its 244th report in 2014 which dealt with the need to curb the trend of criminal politicians in the legislature posing serious consequences to democracy and secularism.
 - ✦ The Law Commission recommended disqualification of people against whom charges have been framed at least one year before the date of scrutiny of nominations for an offence punishable with a sentence of five years or more.
- 💡 In 2017, the Union government started a scheme to establish **12 special courts for a year to fast-track the trial of criminal cases against MPs and MLAs**.

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SC Judgements Regarding Criminalization of Politics:

💡 *Association for Democratic Reforms v. Union of India (2002):*

- ✦ In 2002, the SC ruled that every candidate contesting an election has to declare his criminal and financial records along with educational qualifications.

💡 *PUCL v Union of India (2004):*

- ✦ The SC ruled that a law nullifying the requirement for election candidates to disclose their criminal records was unconstitutional. The Court said voters have a right to know about candidates' backgrounds for fair elections.

💡 *Ramesh Dalal vs. Union of India (2005):*

- ✦ In 2005, the SC had ruled that a sitting MP or MLA will be disqualified from contesting the election if convicted and sentenced for imprisonment for two years or more by a court of law.

💡 *Lily Thomas v. Union of India (2013):*

- ✦ The SC has declared that any member of parliament or state legislative assembly who is convicted of a crime and sentenced to a prison term of two years or more would be disqualified from holding office.

How can Political Accountability be Reinforced Without Compromising Constitutional Rights?

- 💡 **Judicially Anchored Removal Criteria:** Removing ministers based on **arrest without a judicial finding of guilt** violates **constitutional safeguards**.
 - ✦ Implementing **independent tribunals** to evaluate cases before removal can prevent **executive misuse**.
 - ✦ This **judicial anchoring** is essential given that as of **2025, 45% of India's MLAs face criminal cases**, but only **6% convictions** have occurred due to **systemic delays**.
- 💡 **Interim Suspension to Preserve Governance Integrity:** Globally, many **democracies** suspend

officials accused of **serious crimes** during trial, as seen in the **UK** and **Canada**.

- ✦ This balances the need to maintain **governance standards** and uphold the **presumption of innocence**.
- ✦ With over **27% of ministers** facing **serious offences** like **murder or kidnapping (ADR 2025 report)**, **suspension during trial** curtails the influence of **indicted ministers** without premature removal.
- 💡 **Limiting Disqualification to Serious Crimes:** The **Law Commission's 1999 report** advises restricting **disqualification** to offences involving **moral turpitude or corruption** to avoid penalising politicians for **minor or politically motivated charges**.
 - ✦ Data shows that states like **Andhra Pradesh (56%)** and **Telangana (50%)** of MLAs have **serious charges**.
 - ✦ **Narrowing scope** targets genuine threats to **governance quality** while respecting **political pluralism**.
- 💡 **Robust Disclosure and Voter Awareness:** The **Election Commission** and NGOs like **ADR** have pushed for **mandatory disclosure of criminal backgrounds** prior to elections.
 - 💡 Though **45% of MLAs** declared cases, **voter awareness campaigns** can empower voters to reject candidates with **criminal backgrounds**.
 - 💡 **Research** shows **educated electorates** and **urban voters** increasingly vote against **tainted candidates**, signalling the efficacy of **transparency measures**.
- 💡 **Electoral Finance Reforms to Weaken Criminal Nexus:** **Criminal elements** often fund elections through **illegal means**, entrenching their influence.
 - ✦ The **Second Administrative Reforms Commission (ARC)** recommended **state funding of elections** alongside **strict transparency** and **auditing of political donations**.
 - ✦ Countries like **Germany** combine **state funding** with **donor disclosure** to minimise **corruption**, providing a **model India can consider**.

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💡 **Internal Party Democracy for Clean Candidate Selection:** Nominations largely controlled by party elites enable dynastic or criminal candidates to dominate.

✦ Enforcing internal party democracy through mandated primary elections or transparency in selections, as suggested by the Election Commission and Law Commission, will help reduce the entry of criminal elements into politics.

💡 **Judicial Oversight on Arrest and Detention:** To prevent misuse of investigative agencies, judicial oversight in arrest and detention decisions affecting ministers' removal is crucial.

💡 **Supreme Court rulings** affirm agencies must act within legal bounds, with courts safeguarding against arbitrary detention.

💡 **Strengthening agency independence** while ensuring accountability through judicial review can reduce political vendettas masked as legal actions.

Conclusion:

According to Alexis de Tocqueville's concept of "soft despotism," democratic decline often unfolds not through overt authoritarianism but through legal mechanisms masked as moral reform. In this context, the Constitution (One Hundred and Thirtieth Amendment) Bill, 2025, marks a crucial initiative to enhance political accountability by mandating the removal of ministers detained on serious criminal charges, thereby seeking to restore public trust in governance. However, such reform must be anchored in constitutional safeguards like the presumption of innocence and due process of law.

Curbing Air Pollution Crisis in India

This editorial is based on "Cloud seeding was never the solution for Delhi's air pollution," which was published in The Indian Express on 29/10/2025. The article argues that cloud seeding is an ineffective and symbolic solution for Delhi's severe air pollution, emphasising the need for long-term, science-based, and regionally coordinated actions to address the root causes.

Tag: GS Paper 3, Environmental Pollution & Degradation, Environmental Impact Assessment (EIA), Sustainable Development, Climate Change

Every winter, Delhi faces severe air pollution due to crop residue burning, vehicular emissions, and unfavourable weather conditions, trapping pollutants. In 2025, the Delhi government and IIT Kanpur conducted cloud seeding experiments to induce artificial rain, but the effort saw limited success because of low atmospheric moisture. The episode revealed that cloud seeding is a temporary, uncertain fix, underscoring the need for long-term, coordinated, and science-based strategies to tackle the root causes of pollution rather than relying on symbolic interventions.

What is Cloud Seeding?

💡 **About:** A 2024 report by the Indian Institute of Tropical Meteorology (IITM), Pune, defines **cloud seeding** as a weather modification technique that involves introducing 'seed' particles into suitable clouds to enhance rainfall.

✦ To induce artificial rainfall, suitable clouds are injected with salts such as silver iodide, potassium iodide, or sodium chloride, which act as the 'seed' to promote condensation and droplet formation.

💡 **Working Mechanism of Cloud Seeding:**

✦ Suitable clouds with adequate moisture and vertical thickness are identified.

✦ Seeding agents are released via aircraft, drones, rockets, or ground generators into these clouds.

✦ The chemicals facilitate the conversion of water vapour into larger droplets or ice crystals, which fall as rain or snow.

💡 **Necessary Conditions for Effective Cloud Seeding:**

✦ Presence of moisture-rich clouds (especially cumulus and nimbostratus types) with at least 50% moisture content.

✦ Cloud thickness of at least 1 kilometre and suitable temperatures.

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- ✦ Cold clouds with supercooled water droplets between -20°C and -7°C for cold cloud seeding.
- ✦ Warm clouds with temperatures above freezing for warm cloud seeding.
- ✦ Favourable wind direction and speed to keep seeding agents within the target area.
- ✦ Strong vertical updrafts to disperse agents and promote cloud development.

International Success and Applications:

- ✦ Used since the 1940s mainly to boost rainfall in drought-prone or water-scarce regions (e.g., USA, China, UAE).
- ✦ It can serve as short-term relief during droughts, support agriculture, and act as emergency air-quality intervention.
- ✦ Pakistan's 2023 artificial rain experiment in Lahore showed minimal rainfall but helped reduce AQI temporarily, with pollution rebounding after a few days.

Limitations of Cloud Seeding:

- ✦ Cannot induce rain without suitable clouds and adequate moisture.
- ✦ Effects are temporary, with rainfall lasting from a few hours to a couple of days.
- ✦ Measuring precise effectiveness is difficult due to natural atmospheric variability.
- ✦ Chemicals used pose potential environmental risks such as soil and water contamination; long-term effects require monitoring.

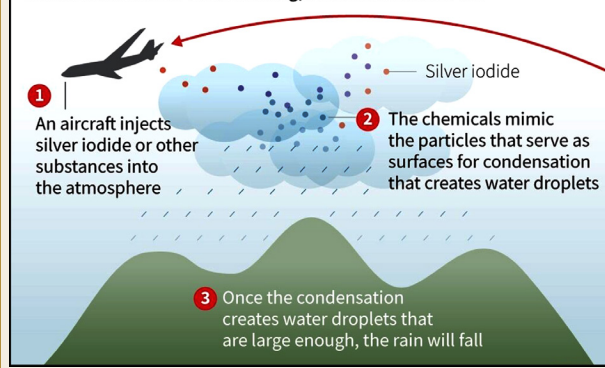
Delhi Cloud Seeding Experiment (2025):

- ✦ Conducted by the Delhi government in partnership with IIT Kanpur to explore artificial rain as a pollution control measure.
- ✦ Five cloud-seeding flights were carried out over northwest Delhi using silver iodide dispersal.
- ✦ Trials witnessed limited success to produce significant rainfall due to low moisture levels (around 10–15%) in Delhi's winter clouds.

- ✦ Minimal rainfall observed nearby in Noida (0.1–0.2 mm) but not directly over Delhi.
- ✦ Air quality monitoring showed small reductions in **PM_{2.5}** and **PM₁₀**, likely due to increased moisture aiding particle settling.
- ✦ Experts caution cloud seeding is not a sustainable solution and stress need for coordinated efforts addressing pollution sources.

Cloud seeding

Traditional method of rainmaking, in use since the 1940s



What are the Key Factors Contributing to the Worsening Air Pollution Crisis in India?

- ✦ **Vehicular Emissions:** India's rapid motorization has made vehicular emissions a major pollution source. In Delhi alone, transportation contributes over 30% of all greenhouse gas emissions. (*GHG Footprint of Major Cities in India*)
 - ✦ Vehicles emit fine particulate matter (PM_{2.5}), nitrogen oxides (NO_x), carbon monoxide (CO), and hydrocarbons, significantly worsening air quality.
 - ✦ Despite Bharat Stage VI (BS-VI) standards (2020), vehicle growth and non-compliance continue to pose risks.
 - ✦ Vehicular pollution causes respiratory issues, cardiovascular diseases, and reduced life expectancy.
 - ✦ According to the **Global Burden of Disease (GBD) 2023 Report**, air pollution remains among India's top three causes of premature death and disability.

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- ✍ According to the **State of Global Air 2024**, **air pollution causes over 2 million deaths annually in India.**
- 💡 **Industrial Pollution:** Coal-fired power plants, cement factories, and manufacturing units release sulfur dioxide (SO₂), particulate matter, and nitrogen oxides (NOx).
- ✖ Coal remains the **predominant source**, accounting for approximately **70% of electricity generation**, despite the growth in renewable energy installations.
 - ✖ Major **industrial belts** in states like **Maharashtra** and **Uttar Pradesh** contribute persistently high pollution loads.
 - ✖ These emissions contribute to **smog formation** and **acid rain**, exacerbating **respiratory** and **heart diseases**.
 - ✖ **Industrial pollution** often exceeds **permissible limits**, making **air quality hazardous** during winter, especially in **urban clusters**.
 - ✖ Many **projects** proceed without proper **Environmental Impact Assessments (EIA)** or disregard **clearance conditions** due to weak **State Pollution Control Boards (SPCBs)** and **monitoring bodies**.
 - ✍ The **Supreme Court** in **MC Mehta v. Union of India (2024)** noted more than **60% vacancy rates in some SPCBs**, crippling enforcement.
- 💡 **Crop Residue Burning:** Burning of wheat and rice residues in Punjab, Haryana, and Uttar Pradesh annually releases **millions of tons of smoke** and **particulate matter**.
- ✖ This practice, peaking in **October–November**, severely deteriorates **air quality** in **northern India**.
 - ✍ The problem persists because **government incentives** for **mechanized residue management** (like 'Happy Seeder' machines) have not adequately overcome the farmers' **immediate cost** and **logistical burden**.
 - ✖ The resulting **smog** pushes **Delhi's AQI** beyond **400**, causing **respiratory emergencies**, **school closures**, and **economic losses**.
 - ✖ With millions exposed daily to **particulate matter above safe limits**, the **pollution–NCD link** exacerbates **respiratory** and **cardiac morbidity**.
 - ✖ Despite **government incentives** for **mechanized residue management**, **crop burning** remains widespread due to **lack of awareness** and **cost-effective alternatives**.
- 💡 **Construction and Road Dust:** India's urban infrastructure boom generates vast **construction dust**. **Unpaved roads** and **vehicular movement** further stir **road dust**, adding to **PM10 pollution**.
- ✖ Dust aggravates **asthma**, **bronchitis**, and other **respiratory ailments**, particularly among **children and the elderly**.
 - ✖ During **dry seasons**, **dust** can account for up to **50% of PM10 levels** in cities like **Delhi** and **Bengaluru**.
 - ✖ **Regulatory bodies** and **ULBs** frequently demonstrate **poor oversight** and **inadequate enforcement** of existing guidelines related to **construction dust management** and **C&D waste disposal**. **Fines** are often **low** or **unevenly applied**, failing to act as a **significant deterrent**.
- 💡 **Improper Waste Management:** Open burning of municipal solid waste, including **plastics** and **electronic waste**, is common in **urban slums** and **peri-urban areas**.
- ✖ This emits **dioxins**, **furans**, **heavy metals**, and **particulate matter**.
 - ✖ Releases **toxic emissions** degrading **air** and **soil quality**, causing **chronic diseases** and **cancer risks**.
 - ✍ According to a report by **The Energy and Resources Institute (TERI)**, India generates an average of **62 million tonnes (MT) of waste annually**, including **7.9 MT of hazardous waste**, **5.6 MT of plastic waste**, **1.5 MT of e-waste**, and **0.17 MT of biomedical waste**.
 - ✍ Only **43 MT** of the total waste generated is **collected**, with **12 MT treated before disposal**, while the remaining **31 MT** is **discarded in wasteyards**.

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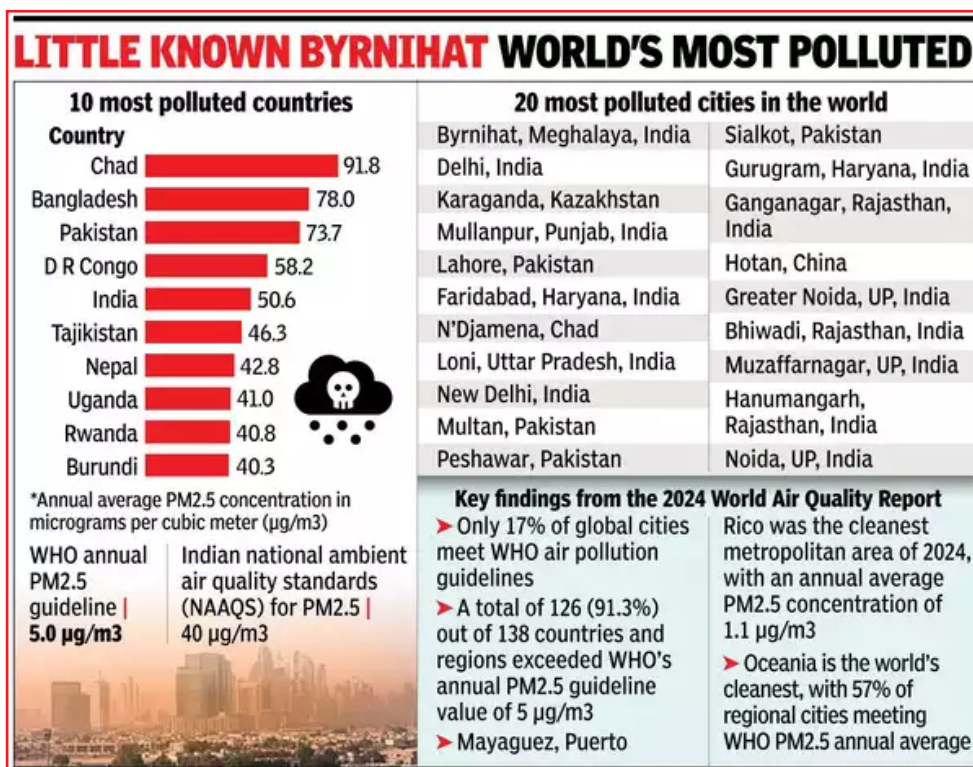
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- 💡 **Household Air Pollution:** Around 41% of the Indian population still uses wood, cow dung, or other biomass as cooking fuel, cumulatively emitting around 340 million tonnes of carbon dioxide into the environment every year- about 13% of India's total greenhouse gas emissions.
 - ✦ This releases harmful particulates and toxic gases indoors and outdoors.
 - ✦ **Chronic Obstructive Pulmonary Disease (COPD)** accounts for 75% of chronic respiratory diseases, heavily linked to indoor cooking fuel smoke and urban ambient pollution.
- 💡 **Meteorological and Geographical Factors:** Temperature inversions, low wind speeds, and dense fog during winter months trap pollutants near the surface.
 - ✦ The Indo-Gangetic Plain's flat topography and high population density worsen pollutant accumulation.
 - ✦ Leads to multi-day pollution spikes, acute respiratory distress, and hospitalization surges across North India.
 - ✦ Studies estimate life expectancy reductions of over 8 years in highly polluted cities due to chronic exposure.



Framework For Air Pollution Management in India

💡 Constitutional Provisions:

- ✦ **Article 21 – Right to Life:** Includes the right to a healthy environment; courts have expanded this to environmental protection.
- ✦ **Article 48A – Directive Principle:** Mandates the state to protect and improve the environment and safeguard forests and wildlife.
- ✦ **Article 51A(g) – Fundamental Duties:** Obligates citizens to protect the environment.

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💡 Key Environmental Laws:

- ✦ **Environment (Protection) Act, 1986**: Provides overarching powers to the central government to protect and improve environmental quality.
- ✦ **Air (Prevention and Control of Pollution) Act, 1981**: Addresses air pollution and empowers regulatory authorities.
- ✦ **Forest Conservation Act, 1980**: Regulates diversion of forest land for non-forest purposes.
- ✦ **Coastal Regulation Zone (CRZ) Notification, 2011**: Regulates development in coastal areas.
- ✦ **EIA Notification, 2006**: Mandates Environmental Clearance (EC) for developmental projects.

💡 Regulatory and Institutional Mechanisms:

- ✦ **Ministry of Environment, Forest and Climate Change (MoEFCC)**: Formulates policies, grants ECs, and oversees environmental compliance.
- ✦ **Central and State Pollution Control Boards**: Monitor air and water pollution, enforce regulations.
- ✦ **National Green Tribunal (NGT)**: Specialised judicial body for the speedy resolution of environmental disputes and the enforcement of environmental laws.

What are the Key Steps Taken by the Government to Curb Air Pollution India?

- 💡 **National Clean Air Programme (NCAP)**
- 💡 **Notification of Ambient Air Quality Standards**
- 💡 **Revision of emission standards for industrial sectors** from time to time
- 💡 **Setting up of monitoring network** for assessment of **ambient air quality**
- 💡 **Promotion of ethanol blending**
- 💡 **Launching of National Air Quality Index (AQI)**
- 💡 **Leapfrogging from BS-IV to BS-VI fuel standards**
- 💡 **Introduction of BS-VI compliant vehicles** across the country since **April 2020**
- 💡 **Notification of Construction and Demolition Waste Management Rules**
- 💡 **Installation of online continuous (24x7) monitoring devices** by major industries
- 💡 **Constitution of Commission on Air Quality Management (CAQM)** in NCR and adjoining areas
- 💡 **Notification of Graded Response Action Plan (GRAP)** for Delhi and NCR
- ✦ **GRAP categorises pollution response measures into four stages, depending on the AQI levels.**

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STAGE 1 (AQI 'POOR' - 201 TO 300)



Stopping all construction and demolition activities with plot size of 500 sqm or more which have not been registered on dust mitigation monitoring portals

- Mechanised sweeping, water sprinkling on roads
- Enforcing guidelines on use of anti-smog guns at construction site
- Enforcing ban on open burning of waste and PUC for vehicles
- Discoms to minimise power supply interruptions in NCR
- Encourage offices to start unified commute for employees to reduce traffic



STAGE 2 (AQI 'VERY POOR' - 301 TO 400)



Stopping use of diesel generator sets except for essential and emergency services (hospitals, railways, metro, airports, water pumping stations, 'projects of national importance')

- Not allowing coal/firewood in tandoors at hotels
- Enhance parking fees to discourage private transport
- Augment CNG/ electric bus and metro services by procuring additional fleet and increasing the frequency of service



STAGE 3 (AQI 'SEVERE' - 401 TO 450)



Ban on construction and demolition activities except railway, metro, hospitals, sanitation projects etc, linear public projects like highways, roads, flyovers

- Closure of industries that have PNG supply and are not running on approved fuels. In industrial areas that don't have PNG supply, industries not running on approved fuels will operate only for five days a week
- State governments in NCR may impose restrictions on BS III petrol and BS IV diesel four-wheelers



STAGE 4 (AQI 'SEVERE +' - MORE THAN 450)



State govts can consider closing schools; odd-even vehicle system; decide on letting public, pvt offices to work on 50% strength, rest to work from home

- Stop entry of truck traffic (except essentials, CNG, e-trucks). Ban on plying of Delhi-registered diesel medium- and heavy-goods vehicles, except essentials
- Ban on plying of four-wheeler diesel vehicles, except BS-VI and vehicles for essential services
- Ban C&D activities in linear public projects such as highways, roads, flyovers

(Actions under Stages II, III and IV will be invoked three days in advance of AQI reaching the projected level)

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What Comprehensive Measures are Required to Curb Air Pollution Effectively in India?

- 💡 **Strengthen and Mandate Strict Emission Standards:** States must explicitly recognise and implement the right to a clean and healthy environment as a fundamental right, as affirmed by the Supreme Court.
 - ✦ The EIA process must be non-negotiable and inclusive, ensuring all projects— industrial, educational, or infrastructure, undergo full impact evaluation with mandatory public consultations.
 - ✦ India should rigorously enforce Bharat Stage VI (BS-VI) vehicular standards nationwide and phase out older, polluting vehicles through incentivized scrappage schemes.
 - ✦ Regulations need legal backing for stringent implementation, akin to European Union practices, where emission limits are coupled with penalties and real-world testing.
 - ✦ Such measures could reduce vehicular PM2.5 and NOx emissions substantially to improve urban air quality.
- 💡 **Promote Clean and Renewable Energy Century-Wide:** Accelerating the transition from coal and fossil fuels to renewables like solar, wind, and hydropower is crucial.
 - ✦ India's renewable energy capacity reached over 225 GW by 2025, but to achieve the 500 GW target by 2030, it must:
 - 📎 Invest strategically in Green Energy Corridors to enable grid stability and efficient renewable power evacuation.
 - 📎 Digitise grid management using AI and smart metering to forecast demand, manage variability, and optimise dispatch of intermittent resources such as solar and wind.
 - 📎 Implement policies like waiving Inter-State Transmission System charges and expanding General Network Access, facilitating smoother market entry and project connectivity.
 - ✦ This shift will simultaneously lower CO2 emissions and particulate pollution, addressing climate change and air quality in tandem.
- 💡 **Implement Integrated Agricultural Waste Management:** Building on [Commission for Air Quality Management's](#) coordination, India must enhance technology adoption for crop residue management—mechanical removal, biochar production, and bioenergy use.
 - ✦ Providing incentives for farmers to adopt sustainable alternatives to stubble burning—such as the Pusa Decomposer and biomass utilization for biogas production—can significantly reduce air pollution.
 - ✦ This replicates successful programs in California's San Joaquin Valley, where strict crop burning laws and alternatives led to measurable air quality improvements.
- 💡 **Expand Urban Green Infrastructure and Dust Control:** Large-scale urban afforestation, roadside greenbelts, and permeable surfaces can trap particulate pollution and reduce urban heat islands.
 - ✦ Coupled with dust suppression technologies—anti-smog guns, water sprinklers, and paving unpaved roads—cities like Delhi can manage construction dust, which accounts for nearly half of urban PM10 pollution during dry seasons.
 - ✦ Singapore's green urban planning offers a model for integrating vegetation and urban development effectively.
- 💡 **Strengthen Waste Management to Halt Open Burning:** India must fast-track the implementation of scientific municipal solid waste management practices—segregation, recycling, composting, and waste-to-energy projects—to eliminate open burning of waste, a dangerous source of dioxins and particulate matter.
 - ✦ Cities like Pune have demonstrated success through community participation in waste segregation and processing, leading to measurable air quality benefits.

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✦ The Supreme Court, through MC Mehta v. Union of India (1986) and subsequent rulings, reinforced this approach by upholding the “Polluter Pays Principle” and the “Precautionary Principle” as foundational to India’s environmental jurisprudence.

💡 **Institutionalise Regional and Multi-Sectoral Governance:** Air pollution is transboundary; hence, the central government must empower bodies like the Commission for Air Quality Management with adequate authority, funding, and interstate coordination capabilities.

✦ Multi-sector committees, incorporating health, urban planning, transport, and agriculture ministries, can design integrated action plans.

✦ The European Union’s coordinated member-state approach to transboundary pollution control exemplifies this practice.

💡 **Enhance Real-Time Air Quality Monitoring and Public Awareness:** Expand deployment of low-cost sensors integrated with satellite and AI analytics for real-time air quality alerts and forecasting.

✦ Integrate AI, IoT sensors, satellite monitoring, and third-party audits mandated by the

Environment Audit Rules, 2025, to detect violations early.

📎 AI-supported analytics help courts and policymakers identify enforcement gaps and direct resources effectively.

📎 Real-time data dashboards for air quality will empower both regulators and communities.

✦ Transparent, accessible data will empower citizens and authorities to enact emergency measures.

✦ Health advisories and educational campaigns must engage communities in sustainable behaviours.

✦ South Korea’s comprehensive air quality alert system offers a successful example.

Conclusion:

Every breath we take is a gift from the planet—safeguarding air quality is safeguarding life itself. Thus, India must align its pollution control efforts with SDG 3 (Health), SDG 7 (Clean Energy), SDG 11 (Sustainable Cities), and SDG 13 (Climate Action) by strengthening emission norms, promoting renewables, managing waste sustainably, and fostering inclusive, science-based governance to ensure clean air, public health, and environmental justice for future generations.



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Drishti Mains Questions

1. Examine how South-South and Triangular Cooperation (SSTC) strengthens sustainable development among developing countries and complements traditional North-South aid models.
2. India has emerged as the world's third-largest startup ecosystem, yet its long-term sustainability depends on inclusivity, deep-tech innovation, and regulatory resilience. Discuss the factors driving this growth, the key challenges it faces, and suggest measures to make the ecosystem more equitable and globally competitive
3. The civil services are often called the "steel frame" of India, holding together the administrative fabric of the nation. How can reforms ensure this steel frame remains both resilient and adaptable in the face of contemporary governance challenges?
4. Assess the progress India has made in disaster risk reduction and management in recent years. Critically examine the challenges that continue to undermine resilience and preparedness. How can India align its strategies with the Sendai Framework to further strengthen disaster education, community preparedness, and risk-informed development?
5. Analyse the arguments for and against the legalisation of active euthanasia in India within the constitutional mandate of the right to life.
6. Across the globe, India's diaspora serves as a bridge linking domestic goals with international influence. How can India harness its diaspora to boost economy, diplomacy, and soft power while bridging policy gaps?
7. "Like unlocking a nation's hidden treasure, empowering women fuels social transformation." Critically analyse the multifaceted barriers that continue to impede women's empowerment in India despite constitutional safeguards.
8. Examine the key reforms transforming the Indian judiciary and suggest measures to enhance its efficiency, transparency, and accessibility
9. "Environmental justice is the delicate balance where development meets dignity." Discuss the challenges and prospects of achieving environmental justice in India amid rapid urbanisation and industrialisation.
10. "Population planning is not merely counting people but shaping the nation's future."
Discuss the strategic importance of technology adoption, citizen participation, and sustainable development priorities in India's demographic mission.
11. Engaging the Taliban requires balancing principled diplomacy and realpolitik. In this context, discuss India's Afghanistan policy and its impact on national security and global geopolitics.
12. "Clean energy cooperation is the new frontier of international alliances." Analyse the role of the India-Australia Renewable Energy Partnership in addressing climate change and reducing critical mineral supply dependencies.
13. Analyse the major policy measures driving India's renewable energy expansion. Evaluate their impact on the country's energy security and achievement of climate goals
14. Artificial Intelligence (AI) has the potential to make healthcare in India more equitable and efficient, yet it also raises critical concerns regarding ethics, accountability, and inclusion. Discuss.

Drishti Mains Questions

15. As India transitions from communicable to lifestyle diseases, the challenge is not of infection but of inaction. Examine how India's health policies are adapting to address the growing burden of Non-Communicable Diseases (NCDs) in a rapidly urbanising society.
16. "India's journey to Viksit Bharat 2047 will depend not merely on technological advancement but on how effectively it harnesses and retains its intellectual talent." Examine the key challenges and strategic reforms needed to transform India from a talent-exporting to a talent-attracting innovation economy.
17. Critically examine the relevance of the National Commission for Minorities (NCM) in safeguarding minority rights in India. Suggest reforms to enhance its autonomy, accountability, and effectiveness.
18. Domestic workers form the unseen backbone of urban households. Examine the key challenges in securing legal protection and social security for domestic workers in India and suggest measures to ensure their rights and dignity.
19. When crises become global but responses remain national, institutions built for unity risk irrelevance. Discuss how institutional reforms can restore the legitimacy and effectiveness of multilateral governance in the 21st century.
20. "In an age where pixels can lie and voices can deceive, truth itself risks becoming negotiable." Discuss how India's legal and ethical frameworks can preserve informational integrity in the era of deepfakes and synthetic media.
21. From dignity to safety, child health lies at the heart of sustainable development. Critically evaluate whether current policy frameworks sufficiently address paediatric drug safety as a public health priority.
22. The strategic partnership between India and Nepal is influenced by regional geopolitics and internal political dynamics. Discuss the key issues affecting this relationship and propose measures to enhance mutual cooperation.
23. India's rapid urbanisation presents both opportunities and complex challenges. Discuss the major challenges arising from this growth and their impact on urban governance and sustainability.
24. The 130th Amendment Bill proposes a new constitutional threshold for political accountability. Critically examine how the Bill balances the removal of ministers detained for serious crimes with the principles of due process and democratic legitimacy.
25. Short-term interventions such as cloud seeding offer rain to wash away haze but fall short of systemic reform in India's air pollution mitigation strategy. Critically examine.