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Budgetary allowances alone cannot solve India's R&D challenges. Critically examine the systemic and policy impediments beyond funding that hinder research, development, and innovation in India.

Introduction

While budgetary provisions such as the ₹1-lakh crore RDI scheme reflect political will, India's research and innovation ecosystem suffers from structural bottlenecks that require holistic reforms beyond fiscal allocations.

India's R&D Landscape: The Current Status

India's Gross Expenditure on R&D (GERD) has stagnated at around **0.65% of GDP** for over a decade, far below China (2.4%) and the U.S. (3.4%). Of this, the **government funds nearly 70%**, while the **private sector contributes less than 40%**, contrary to trends in developed nations where industry drives innovation.

Systemic and Policy Impediments Beyond Budgetary Allocation

- 1. Weak Institutional Architecture:** The newly created **Anusandhan National Research Foundation (ANRF)** aims to streamline research funding but overlaps and fragmentation persist among agencies like DST, DBT, CSIR, and ICMR. **Bureaucratic inertia**, delays in fund disbursement, and excessive procedural compliance discourage risk-taking among researchers.
- 2. Lack of Incentives for Private Sector Innovation:** The **RDI scheme** restricts support to **Technology Readiness Level-4 (TRL-4)** and above, ignoring early-stage innovations (TRL 1–3) that require the most support and bear the highest risk. **Limited industry-academia collaboration** and weak IP protection mechanisms (India ranks 42nd in WIPO's Global Innovation Index 2023) disincentivize long-term private R&D.
- 3. Brain Drain and Talent Deficit:** As per UNESCO, **over 85,000 Indian students went abroad for STEM education in 2023**, citing better research facilities and career prospects. **Underpaid, insecure research fellowships**, limited post-doctoral opportunities, and lack of recognition demoralize scientific talent, leading to 'brain waste' or emigration.
- 4. Inadequate Research Infrastructure and Manufacturing Base:** India lacks **world-class lab facilities**, clean rooms, or precision manufacturing infrastructure necessary for advanced research. Innovations in areas like **quantum computing, semiconductors, and defence technologies** falter due to poor integration with the manufacturing sector. The **PLI scheme** has improved electronics and biotech manufacturing, but sectoral linkages with domestic research remain weak.
- 5. Absence of Strategic Mission-Oriented Research:** Historically, disruptive innovations have emerged from **mission-driven public investment** (e.g., DARPA in the U.S., which led to the internet and GPS). India lacks a comparable **civil-military innovation complex**, limiting spillovers from defence R&D to civilian applications.
- 6. Education-Relevance Mismatch:** Indian higher education institutions lag in **research output and global rankings**; only 3 Indian universities feature in QS Top 200 (2025). Syllabi remain outdated and **emphasis on rote learning** undermines critical thinking and problem-solving, essential for innovation.

Way Forward

1. **Strengthen ANRF's autonomy** and ensure streamlined single-window funding with timely disbursal.
2. Establish **Innovation Clusters and Technology Transfer Offices (TTOs)** to bridge academia and industry.
3. Develop a **National Science Career Track** offering stable, merit-based positions for young researchers.
4. Build **mission-oriented R&D programs** in climate tech, quantum, AI, and space modelled on global best practices like EU's Horizon Europe.
5. Promote **deep-tech startups** through easier patent processes, tax incentives, and dedicated incubators.

Conclusion

India's innovation bottlenecks lie deeper than funding shortfalls. A transformative leap in R&D requires synchronized reforms in education, infrastructure, talent retention, and institutional accountability to unlock true innovation potential.

Restricted or selective franchise fundamentally disrupts electoral democracy. Critically analyze how such practices undermine universal adult suffrage, constitutional values, and create insecure citizens.

Introduction

India's democratic fabric is rooted in universal adult franchise. However, emerging practices like Bihar's Special Intensive Revision threaten to replace this principle with selective franchise, imperiling citizenship, equality, and participatory democracy.

Universal Adult Suffrage: A Constitutional Pillar

1. India adopted **universal adult suffrage** at the very birth of the Republic — a radical move unmatched even by older democracies like the UK and US at the time.
2. Enshrined in **Article 326 of the Constitution**, it guarantees voting rights to all citizens above 18, regardless of caste, class, education, property, or gender.
3. The **Representation of the People Act, 1951**, operationalised this inclusive vision, ensuring that the power to vote became the most fundamental means of political participation.

A Dangerous Precedent

1. The **Special Intensive Revision (SIR)** of electoral rolls launched in Bihar in June 2025 threatens to undermine this framework.
2. Unlike past roll revisions, the current SIR mandates submission of documentary proof — birth certificates, land records, matriculation certificates — excluding commonly held documents like Aadhaar, voter ID, or ration card. This disproportionately impacts rural populations, migrants, the landless, Dalits, and women.

3. With **50 million electors under scrutiny** within a single monsoon month, including peak flood season and migration periods, the exclusion risks are massive.
4. The arbitrary document requirements bear striking resemblance to the **NRC process in Assam**, which excluded nearly **1.9 million people**, sparking human rights concerns and international criticism.

Undermining Constitutional Values

1. **Equality and Inclusion Violated:** By creating eligibility hurdles, the state implicitly reverts to colonial-era logic — where education or property was a voting prerequisite. This directly violates **Article 14 (equality before law)** and the **egalitarian ethos** of the Constitution.
2. **Burden Shifted to the Citizen:** The foundational principle of **natural justice — innocent until proven guilty** — is flipped. Citizens must now prove their eligibility, effectively becoming “doubtful voters” in their own democracy.
3. **Citizenship Without Franchise:** The process risks producing a new class of **disenfranchised citizens** — people who retain formal citizenship but are stripped of voting rights. This echoes global cases of **voter suppression** through indirect disenfranchisement, such as literacy tests in pre-civil rights era USA.

Impact on Democratic Participation

The SIR, by institutionalizing **document-driven disenfranchisement**, may lead to:

1. **Delegitimization of elections**, with mass exclusions skewing electoral outcomes.
2. **Alienation of vulnerable groups**, especially migrants and minorities.
3. **Loss of public trust** in electoral institutions, already strained by controversies like electoral bonds and biased enforcement.
4. The Election Commission of India (ECI), once globally respected, risks becoming an instrument of exclusion rather than empowerment.

Way Forward

1. Ensure **transparent, inclusive voter verification**, using **self-attested affidavits** and **commonly held IDs**.
2. Implement **migrant-sensitive reforms**, such as **remote voting** (as explored by ECI in 2022).
3. Provide **legal aid and grievance redressal** mechanisms for excluded voters.
4. Strengthen the role of civil society and judiciary to oversee such exercises.
5. Reinforce voter registration as a **facilitation process**, not a punitive one.

Conclusion

India's democratic soul rests on the promise of universal franchise. Moves towards selective enfranchisement erode citizenship,

Custodial brutality highlights India's criminal justice system's failure due to inadequate reform. Critically analyze how prioritizing enforcement over reform impacts human rights, police accountability, and equitable justice delivery.

Introduction

Custodial deaths in India expose the deep fault lines within its criminal justice system, where enforcement overshadows reform, eroding public trust, compromising human rights, and weakening the very foundations of democratic accountability.

The Grim Reality of Custodial Brutality

1. Custodial violence remains one of the gravest human rights concerns in India. According to the **National Campaign Against Torture**, 125 people died in police custody in 2022, often due to torture.
2. The recent death of **Ajith Kumar** in Tamil Nadu, with 44 wounds and signs of abuse, is not an isolated incident but part of a recurring pattern. From **Vignesh** in Chennai (2022) to **Raja** in Villupuram (2024), each death reflects systemic failure — not just of the police, but of India's justice system.

Overemphasis on Enforcement over Reform

Despite allocating **thousands of crores annually** to policing, most states focus disproportionately on enforcement tools — surveillance, vehicles, and riot gear — rather than on **capacity-building and human rights safeguards**. Key reform areas like **mental health support, de-escalation training, and trauma-informed investigation** remain grossly underfunded.

1. **Police Welfare Neglected:** India's police-to-population ratio is **only 152 per lakh**, well below the UN-recommended **222 per lakh**. Overworked, undertrained, and stressed, officers often resort to force due to lack of emotional resilience and institutional support.
2. **Training Deficit:** Many police training modules are **outdated**, lacking focus on **human rights law, community policing, and ethical conduct**. Only 1.5% of police officers in India undergo in-service training annually (BPRD, 2022).
3. **Weak Internal Accountability:** The **National Human Rights Commission (NHRC)** and departmental inquiries rarely result in convictions. According to NCRB 2022, **zero convictions** were recorded in custodial death cases despite dozens of FIRs and magisterial inquiries.

Human Rights Erosion and Public Distrust

1. When force takes precedence over fairness, **citizens—especially the poor, Dalits, minorities, and migrants—become vulnerable targets**.
2. The erosion of **Article 21 (right to life)** and **Article 22 (protection from arbitrary arrest)** becomes routine. The institutional silence around these violations reflects a deep-seated apathy.

3. The failure to legislate **against custodial torture**, despite India being a signatory to the **UN Convention Against Torture (UNCAT)**, adds to the impunity.

4. The **Law Commission of India (273rd Report)** and multiple Supreme Court observations (e.g., *DK Basu v. State of West Bengal*, 1997) have recommended comprehensive anti-custodial violence laws, but to no avail.

Reforms to Redefine Justice Delivery

1. **Anti-Torture Legislation:** Enact a robust, time-bound, and enforceable **anti-custodial violence law**.
2. **Police Reform:** Implement the **Supreme Court's Prakash Singh guidelines**—separation of investigation from law and order, fixed tenure for officers, and independent police complaints authorities.
3. **Mental Health and Sensitization:** Mandate **quarterly counselling**, psychological evaluation, and **human rights-based training** for police personnel.
4. **Tech for Transparency:** Ensure **real-time monitored, tamper-proof CCTV coverage** in all custodial facilities; use **body cameras** and digital logs.
5. **Independent Oversight:** Empower **civil society and judiciary** to oversee custodial procedures and complaints.
6. **Victim Compensation:** Ensure swift, adequate **compensation and rehabilitation** for victims' families through legal aid and fast-track courts.

Conclusion

Enforcement without reform leads to brutality without justice. True public safety lies not in fear but in trust — earned through accountability, compassion, and a reimagined criminal justice system rooted in human dignity.

The 17th BRICS Summit's cohesion reflects efforts to build global resilience. Analyze BRICS's evolving role in shaping a multipolar world order and addressing developmental challenges amidst geopolitical shifts.

Introduction

The 17th BRICS Summit in Rio reaffirmed the group's commitment to global resilience. Amid rising multipolarity and geopolitical upheavals, BRICS is redefining its role in development, diplomacy, and economic realignment.

BRICS in Transition: A Bigger Table, Bolder Agenda

1. From its origins in 2006 as a coalition of fast-growing economies — Brazil, Russia, India, China, and South Africa (joined in 2010) — BRICS has gradually evolved into a platform for challenging the West-dominated global order.

2. The **17th Summit in Rio de Janeiro (2025)**, the first to include **new entrants** such as Egypt, Ethiopia, the UAE, Iran, and Indonesia, demonstrated the grouping's ambition to institutionalize a **multipolar global framework**.
3. With these additions, BRICS now represents over **50% of the global population, about 40% of global GDP (PPP), and 25% of global trade**.

BRICS and the Multipolar World Order

1. **Strategic Autonomy and Global Governance Reform:** BRICS has consistently called for democratization of global institutions like the **UN Security Council, IMF, and World Bank**. The **Rio Declaration** endorsed a greater role for India and Brazil in global governance, echoing long-standing demands for reform.
2. **De-dollarisation and Financial Sovereignty:** While India maintains a cautious stance, other members, especially Russia and Brazil, are championing **currency diversification** and **trade in local currencies**. The **BRICS Contingent Reserve Arrangement** and discussions on a **common settlement mechanism** signal long-term ambitions to challenge the dollar's hegemony.
3. **South-South Solidarity:** With more Global South nations onboard, BRICS is positioned as an alternative to Western blocs like G7. The Rio Summit condemned the **Israeli strikes on Gaza**, U.S. attacks on Iran's nuclear facilities, and retaliatory tariffs, asserting diplomatic independence from U.S.-led narratives.

Addressing Developmental Challenges

1. **Energy and Food Security:** BRICS countries, many of whom are **resource-rich**, have committed to **collaborative energy transition**, particularly in renewables. The **BRICS Energy Research Cooperation Platform** focuses on technology sharing and green finance.
2. **Climate Change and Sustainability:** With the Global South disproportionately affected by climate shocks, BRICS calls for **climate justice**, fair finance, and equitable carbon budgeting — seen in the Rio statement's focus on **WTO reform** to support sustainable development.
3. **Health and Pandemic Preparedness:** The group's push for **vaccine equity** and joint production during COVID-19 remains a blueprint for future **public health cooperation**, especially via the **BRICS Vaccine R&D Center** and **BRICS Health Ministers' meetings**.
4. **Infrastructure and Digital Cooperation:** Through the **New Development Bank (NDB)**, BRICS funds critical infrastructure in member and partner countries. Digital inclusion, cybersecurity, and fintech cooperation are part of its expanding economic agenda.

Challenges and the Road Ahead

Despite its cohesion at the Rio Summit, **internal divergences** persist:

1. **India-China border tensions**, Russia's **Ukraine conflict**, and divergent views on U.S. relations hamper unified action.

2. Absence of joint communiqués, as seen in the **April 2025 BRICS FM meeting**, reflect these undercurrents.
3. However, the **absence of China and Russia** at the Rio Summit allowed **non-P5 countries** like India and Brazil to shape a **Global South-centric agenda**, leveraging their moral authority and development focus.

Conclusion

The 17th BRICS Summit affirmed a shared vision for a multipolar, equitable global order. As geopolitical realignments deepen, BRICS must synergize internal diversity to lead development and democratic multilateralism.

Examine how strategic investments in education, skill development, health, nutrition, and family planning can empower India's youth, enabling them to drive national progress through enhanced choice, control, and capital accumulation.

Introduction

With over 371 million youth, India holds unprecedented demographic power. Strategic investments in education, health, and empowerment are essential to convert this youth bulge into a national development dividend.

India's Youth: The Demographic Window of Opportunity

1. India, home to the world's **largest youth population**, stands at a crucial juncture. As per **UNICEF**, nearly **371 million individuals** in India are aged between 15 and 29 years.
2. This youth bulge, if invested in strategically, can add **up to \$1 trillion** to India's GDP by 2030, as projected by **NITI Aayog and World Bank**.
3. But realising this potential demands more than just economic growth—it requires a **rights-based, multisectoral approach** that equips youth with education, health, skills, and agency.

Key Pillars of Youth Empowerment

1. Education as the Foundation of Agency: Each additional year of secondary education reduces the probability of child marriage by 6% (**UNICEF**). Programmes like **Project Udaan** in Rajasthan used scholarships and reproductive health awareness to keep girls in school, preventing **30,000 child marriages** and **15,000 teenage pregnancies** between 2017 and 2022. Moreover, investing in secondary and tertiary education fosters **critical thinking, informed decision-making, and economic mobility**. The **National Education Policy (NEP) 2020** emphasizes vocational training, flexible learning, and digital literacy to enhance employability among adolescents.

2. Health, Nutrition, and Reproductive Rights: According to **NFHS-5 (2019–21)**:

- **23.3%** of women aged 20-24 were married before 18.
- **7%** of women aged 15–19 were pregnant or had given birth.

- 36% faced unintended pregnancies.

These indicators highlight gaps in **reproductive autonomy**, further echoed by **UNFPA's State of World Population Report 2025**, which reveals **30%** of Indian adults face unmet reproductive goals. Initiatives like **Advika (Odisha)**, with over **11,000 child-marriage-free villages**, offer adolescent health education, contraception access, and leadership training. Nutrition and mental health must also be part of the equation—stunting, anaemia, and psychological stress undermine both cognitive development and labour productivity.

3. Skill Development and Economic Empowerment: With **female labour force participation at just 24%** (PLFS, 2023), unlocking economic empowerment is vital. **Project Manzil** in Rajasthan enabled **28,000 young women** to complete skills training, with **16,000 entering dignified employment**—many becoming the first skilled earners in their families. Economic independence enhances **negotiation power, delays early marriage**, and encourages **reproductive autonomy**. Linking aspirations to dignified livelihoods, especially in gender-inclusive workplaces, is key.

Removing Structural Barriers

1. Social norms, unsafe public spaces, patriarchal mindsets, and insufficient childcare are hurdles to youth empowerment.
2. Conditional cash transfers, **behaviour change campaigns**, and **community mobilisation** (as demonstrated in Udaan and Manzil) can break these cycles of disempowerment.
3. The **State of World Population 2025** urges nations to focus on **universal access to SRH services, education, and childcare support**—not only as welfare investments, but as economic strategies.

Conclusion

Youth empowerment is not merely a demographic advantage—it is a strategic imperative. Investing in their health, skills, and autonomy is vital for equitable growth, gender justice, and national prosperity.

Critically analyze why India's development model, despite economic growth, has failed to adequately address complex, chronic health issues impacting adult women, leading to a "half-won battle."

Introduction

India's development narrative reflects significant strides in poverty reduction and child health. Yet, persistent neglect of adult women's chronic and reproductive health marks a troubling shortfall—a truly half-won battle.

India's Growth Story: Progress with Blind Spots

1. Over the past two decades, India has witnessed transformative gains: reduction in child mortality, improved nutrition, increased institutional deliveries, and enhanced WASH (Water, Sanitation, and Hygiene) access.
2. **NFHS-5 (2019–21)** reveals a 10% reduction in stunting since 2015-16. As incomes rise, malnutrition and adolescent health indicators improve significantly. However, this trajectory flattens when it comes to **adult women's chronic and reproductive health**.

3. The gains in maternal and child health, largely driven by **Janani Suraksha Yojana**, **POSHAN Abhiyan**, and WASH-focused schemes like **Swachh Bharat**, have not extended into **women's midlife and geriatric health**.
4. This exposes a fundamental limitation in India's development model—it is reactive, infrastructure-driven, and stops short of ensuring **life-course care**.

Symptoms of a Systemic Blind Spot

1. Chronic Reproductive Health Neglect: As highlighted in the article, health issues such as **hysterectomies**, **polycystic ovary syndrome (PCOS)**, uterine fibroids, and difficult **menopausal transitions** show **no direct improvement** with rising State incomes. Many rural women undergo **unnecessary hysterectomies** due to the absence of non-surgical options, awareness, or early intervention—raising concerns of **medical exploitation and structural failure**. A 2018 study by the National Health Systems Resource Centre found **inappropriate hysterectomy rates in states like Andhra Pradesh and Bihar**, often among underprivileged women.

2. Transactional vs. Relational Healthcare: The Indian health system remains oriented around **one-time health interventions**—immunisation, childbirth, sterilisation—but fails at **continuous care**, especially for women post-childbirth. Mid-life issues such as **osteoporosis**, **anaemia**, **cervical cancer**, **hypertension**, or **mental health disorders** receive limited focus. As per **IHME 2019 data**, **non-communicable diseases account for 62% of all deaths among women**, yet primary care rarely addresses chronic disease management tailored to female physiology.

3. Overreliance on Product-Based Progress: Wealth has increased access to modern sanitary products, nutrition supplements, and private healthcare. Yet, these do not substitute for a **robust public health system** or **quality counselling**. Without sustained engagement, even rising per capita income fails to yield well-being for adult women. The health system focuses on **what can be bought**, not **what must be built**—such as trust, continuity, and culturally sensitive care.

Bridging the Generational Gap: A Way Forward

1. **Life-Cycle Approach to Women's Health:** Policy must evolve from **maternal-centric** to **women-centric**, integrating care across adolescence, fertility, menopause, and beyond. Metrics must go beyond child mortality to include **cervical cancer screening rates**, **chronic anaemia**, and menopause care.
2. **Strengthening Human Infrastructure:** Empowering **ASHA and Anganwadi workers** with training in chronic care, counselling, and women's health beyond maternity can ensure continuum of care. These frontline workers are vital to transitioning from product-based to **relationship-based care**.
3. **Equity in Preventive and Geriatric Healthcare:** Schemes like **Ayushman Bharat** must be recalibrated to prioritise **preventive screening** for NCDs and reproductive disorders in adult women. Menopause clinics, cancer screening camps, and gynaecological check-ups should become routine at **Health and Wellness Centres**.
4. **Gender-Sensitive Data and Policy:** NFHS, NSSO, and HMIS must collect **age-segmented, gender-specific data** on chronic morbidity and service utilisation. **Gender budgeting** should allocate dedicated funds to address mid-life women's health.

Conclusion

India's growth story is incomplete without the health and dignity of adult women. Bridging this gap requires reimagining care—beyond childbirth, toward holistic, lifelong well-being rooted in rights and equity.

Despite aspirations for English medium education, uneven state policies on instruction medium exist. Analyze the social justice and governance implications of language imposition, affecting equitable educational access and opportunities for citizens.

Introduction

Language in education is more than a medium—it's a gateway to opportunity. In India, uneven language policies risk perpetuating inequality and excluding the marginalized from aspirational, upwardly mobile educational trajectories.

Social Justice and Governance Implications

1. Uneven State Language Policies: States like **Andhra Pradesh** and **Karnataka** have implemented English medium education in public schools, while others, such as **Tamil Nadu**, prioritize regional languages. The **Supreme Court (2014)** ruled against Karnataka's attempt to impose Kannada, upholding **constitutional choice in instruction medium**.

2. NEP 2020 and Linguistic Concerns: Promotes mother tongue-based education till Grade 5 under the **Three-Language Formula**. Criticized for being **perceived as anti-English**, especially in non-Hindi states fearing **linguistic hegemony**. Risks centralizing language policy in a **federal setup**, undermining linguistic diversity.

3. Governance Ambiguities: Right to Education Act (2009) doesn't specify medium of instruction. **Articles 19(1)(a)** and **30** protect freedom of expression and linguistic minority rights. In the absence of clear national guidelines, **state-level inconsistencies** emerge, affecting educational access.

4. Social Justice Dimensions: English proficiency = economic empowerment: Key to global job markets and higher education. **Marginalized groups (Dalits, Adivasis, OBCs)** seek English as a tool for **upward mobility**. Denying English medium in public schools forces poor students into **vernacular-only education**, while wealthier students access private English schools, **widening inequality**.

5. Educational Outcomes and Dual Track System: ASER 2022: Only **25.3%** of Grade 5 government school children could read basic English, vs **41.5%** in private schools. Unequal instruction medium leads to **disparate academic achievement**, reinforcing a **class-based educational hierarchy**.

6. Challenges to Implementation: Shortage of trained **bilingual teachers**, especially in rural areas. Lack of **curriculum and materials** in multiple languages hampers quality. Linguistic identity vs. aspirations: States struggle to balance **cultural preservation** with **modern opportunities**.

The Way Forward

- 1. Respect Parental Choice:** Allow families to select preferred instruction medium, especially in public schools.

2. **Multilingual Pedagogy:** Introduce early mother-tongue instruction with **gradual integration of English**.
3. **Strengthen Public English Medium Schools:** Ensure quality English medium education in government institutions to level the playing field.
4. **Capacity Building:** Invest in **teacher training**, bilingual materials, and digital content.
5. **Policy Coherence:** National and state policies must align to promote both **equity and aspiration**.

Conclusion

Educational equity requires linguistic inclusion. Policymaking must uphold choice, balance aspirations with local identities, and empower the most disadvantaged—not entrench privilege through unequal language access in education.

For better health outcomes, Census 2027 must capture actionable health data. Analyze how this comprehensive demographic data can strengthen evidence-based governance and equitable public health policy in India.

Introduction

Census 2027 presents a pivotal opportunity to shift from mere headcount to a health-intelligence tool that informs inclusive, data-driven governance and ensures better healthcare delivery across demographic, regional, and economic divides.

The Need for Health-Centric Census Data

1. **Population Health Complexity:** With over **1.4 billion citizens**, India faces a dual burden — tackling **communicable diseases** (like TB, leprosy) and the rapid rise of **non-communicable diseases** (NCDs), including diabetes, hypertension, and mental illness.
2. **Regional Disparities:** Tertiary care is urban-centric; rural and tribal belts suffer from limited access to even primary healthcare.
3. **Demographic Transitions:** India's ageing population (projected **227 million elderly by 2036**) demands location-sensitive healthcare services and geriatric care planning.

How Census 2027 Can Enable Evidence-Based Public Health Policy

1. **Mapping Disease Burden and Service Gaps:** Collecting data on **age, disability, chronic illness, and access to services** allows micro-level planning. Example: TB control success — India reduced TB deaths by **21.4% between 2015 and 2023** using demographic targeting.
2. **Targeting Underserved Populations:** Accurate household-level data can identify **geographical gaps** in PHCs, Health and Wellness Centres (HWCs), and diagnostics. Tamil Nadu and Kerala effectively used census-based planning for **PHC expansion and staff allocation**.

3. Catalyzing Mass Health Screening Campaigns: Census-linked digital health registries can guide **mobile van diagnostics**, **CSR-funded camps**, and **NGO-supported outreach**. PPP models can be enabled based on population density and disease vulnerability in specific census blocks.

4. Strengthening Nutrition and Maternal-Child Health: Census data revealing **malnutrition or anaemia clusters** can refine food security schemes like **ICDS**, **PDS**, and **Midday Meals**. Panchayats and SHGs can promote **kitchen gardens** and **millet cultivation**, particularly in food-insecure belts.

5. Geriatric Health and Elder-Care Services: Elderly-focused mapping helps initiate **telemedicine**, **home-based care**, and **geriatric mobile units** in districts with high senior populations. Example: **Kerala and Himachal Pradesh** have integrated community care for the elderly using such data insights.

Policy Implications and Governance Gains

1. **More Equitable Allocation:** Shifting from uniform distribution to **need-based health investment**.
2. **Real-Time Decision-Making:** A digitally enabled census allows integration with **ABHA health IDs**, **PM-JAY data**, and **district health dashboards**.
3. **Crisis Preparedness:** COVID-19 showed the value of granular health data — with **930 million tests** and **2.2 billion vaccine doses administered** based on local risk mapping.

Challenges to Address

1. **Digital Infrastructure Gaps:** Internet and device access in tribal and remote areas may limit real-time data updates.
2. **Training Enumerators:** Health-based census will require skilled workforce, ethical safeguards, and integration with health ministries.
3. **Data Privacy and Consent:** Sensitive health data needs strong **regulatory frameworks** under **Digital Personal Data Protection Act, 2023**.

Conclusion

Census 2027 must become a blueprint for health-first governance. Beyond numbers, it must map needs, empower communities, and enable a public health model rooted in equity, precision, and human dignity.

India's carbon credit scheme targets require economy-wide assessment, not merely entity-level. Critically analyze how this approach optimizes climate action, ensures equitable burden-sharing, and promotes sustainable economic growth.

Introduction

India's Carbon Credit Trading Scheme (CCTS) aims to decarbonize industry through market-based incentives. For effective climate action, assessing ambition at the economy-wide level is vital over narrow entity-level evaluation.

Why Entity-Level Assessment is Inadequate

1. **Fragmented Picture:** Emissions intensity may rise in some entities while falling in others, masking aggregate efficiency gains.
2. **Market Flexibility Ignored:** A key strength of trading schemes lies in **cost-effective abatement**, not uniform reductions across all sectors or units.
3. **Past Performance under PAT:** Under PAT Cycle I (2012–14), energy intensity **rose in chlor-alkali and paper**, but overall economy-wide energy intensity **declined**. This demonstrates that **entity-level variations** don't preclude aggregate improvements.

Rationale for Economy-Wide Evaluation

1. **Externality Management:** Carbon markets exist to address market failures (GHG externalities) — their success hinges on **total emissions reduced**, not on **who reduces** them.
2. **Equity in Cost Distribution:** High-cost abatement units can **purchase credits**, while low-cost entities earn through overachievement. This promotes **equitable burden-sharing** and avoids economically disruptive mandates.

India's CCTS and the Economy-Wide Perspective

1. **Eight Industrial Sectors Covered:** Cement, steel, aluminium, petrochemicals, refineries, chlor-alkali, textiles, and paper & pulp.
2. **Targeted Metric:** Emissions Intensity of Value Added (EIVA) — CO₂ per unit of economic output.
3. **Projected Annual EIVA Reduction:** **1.68% (2023–2027)** for covered sectors (based on production and price projections). **2.53% needed** (CEEW modelling) in manufacturing to align with **India's 2030 NDCs**. Indicates a shortfall, calling for upward revision in target ambition.

Comparative Sectoral Insights

1. **Power Sector:** Projected to decarbonize faster due to easier low-cost options (renewables, efficiency improvements). Emissions intensity decline estimated at **3.44% annually (2025–2030)**.
2. **Industry:** Faces structural inertia and high capital lock-in, thus needing **complementary policy instruments** beyond trading (like tech transfer and green finance).

Global Comparisons

1. **EU Emissions Trading System (ETS):** Operates with **economy-wide caps**, allowing trading across sectors.
2. **China's ETS:** Initially power-sector focused, now expanding to other industries, emphasizes **aggregate emissions reduction**, not uniformity.

Benefits of an Economy-Wide Assessment Approach

1. **Optimizes Climate Outcomes:** Achieves maximum emissions reduction at lowest economic cost.

2. **Promotes Sustainable Growth:** Allows industry to adapt without compromising competitiveness.
3. **Drives Innovation:** Incentivizes cost-effective, clean technologies across the economy.
4. **Supports Net-Zero Goals:** Aligns with India's 2070 **net-zero commitment** and global climate responsibilities.

Way Forward

1. **Increase CCTS Target Ambition:** Align with decadal decarbonization rates required for NDC goals.
2. **Robust Modelling:** Conduct sector-wide economic and emissions modelling to fine-tune aggregate caps.
3. **Complementary Policies:** Invest in green hydrogen, CCUS, and hard-to-abate sector transitions.
4. **Transparent Monitoring:** Real-time emissions tracking and third-party verification to maintain market integrity.

Conclusion

India's carbon trading framework must shift from micro-level scrutiny to macro-level ambition. Economy-wide assessment ensures climate effectiveness, fairness, and sustains industrial growth within ecological thresholds.

The changing employment landscape reveals a disconnect between education and jobs in India. Examine the structural reforms needed to enhance employability, boost productivity, and foster inclusive economic growth.

Introduction

Despite India's demographic dividend and educational expansion, youth unemployment and unemployability persist. Bridging the education-employment disconnect through systemic reforms is crucial for productivity and inclusive, future-ready economic growth.

The Education-Employment Disconnect: A Critical Overview

1. **Youth unemployment is structural:** According to the India Employment Report 2024 (ILO-IHD), **youth constitute 83% of the unemployed.**
2. **Education without employability:** Over the past two decades, unemployment among those with secondary or higher education has doubled.
3. **Low job readiness:** The Economic Survey 2023-24 indicates that **only 50% of graduates are job-ready.**
4. **Skill mismatch:** 75% of youth lack basic digital skills, including email handling and spreadsheet use.
5. **AI-driven disruption:** As per the WEF Future of Jobs Report 2025, **92 million jobs could be displaced by 2030**, even as 170 million new ones emerge — highlighting the need for agile skilling.

Informality and Underemployment in the Labour Market

1. **90% of the Indian workforce is informal**, and **regular salaried jobs have declined** since 2018.
2. **Rise of contract work** offers flexibility but lacks social protection, as reflected in EPFO trends.
3. **EPFO data (March 2025)**: 18–21 age group forms 18–22% of new enrolments — indicating increased formalisation, but without clarity on wage security and long-term growth.

Key Structural Reforms Needed

1. **Industry-Academia Linkages**: Mandate **formal partnerships between higher education institutions and industry**. Examples: IITs' collaboration with TCS, Infosys; the German Dual Vocational Training model.
2. **Accountability for Placements**: Introduce **job-linked accreditation** systems for universities and colleges. Promote **outcome-based education (OBE)** frameworks already adopted by NBA-accredited engineering colleges.
3. **Curriculum Modernisation and Soft Skills**: Universalise **Tinker Labs, Idea Labs** for experiential learning. Embed **critical thinking, communication, and foreign languages** into all streams — echoing NEP 2020 goals.
4. **Global Employability Strategy**: Develop skilling programmes for **international labour markets** in health, eldercare, logistics, etc. Example: EU's **Link4Skills Project** with India's International Institute of Migration and Development.
5. **Indian Education Services**: Establish an **elite Indian Education Services** cadre to attract talent into education management and policy. Aligns with the idea of **professionalising educational leadership**, similar to the UK's National College for Teaching and Leadership.
6. **Opening Academia to Industry Experts**: Allow lateral entry of **industry professionals as adjunct faculty**. Example: IIT-Madras's "Professors of Practice" model enhancing practical exposure.
7. **Leveraging Digital Ecosystems and Labour Reforms**: Expand Skill India Digital Platform, NSDC's tie-ups with Google, AWS. Implement Code on Wages and Code on Occupational Safety to improve labour conditions and productivity.

Conclusion

To convert India's demographic potential into an economic dividend, systemic educational reforms, demand-responsive skilling, and institutional innovation are imperative to bridge the education-employment gap and enable inclusive growth.

Denmark's plan to use copyright law against deepfakes highlights digital identity protection. Examine the efficacy and challenges of legal frameworks in combating technological misuse, balancing innovation with individual digital security.

Introduction

As deepfake technology advances, safeguarding digital identity becomes essential. Denmark's proposal to use copyright law for deepfake regulation signals a novel legal response to preserve individual rights in a digital era.

Deepfakes: An Emerging Threat to Digital Identity

1. **Definition:** Deepfakes are AI-generated synthetic media that replicate an individual's voice, appearance, or expressions to depict events that never occurred.
2. **Rise in misuse:** According to Sensity AI, deepfake videos online have doubled every six months since 2019, with **over 90% being non-consensual pornography**.
3. **Consequences:** Deepfakes have been used for cyberbullying, political misinformation (e.g., Ukraine conflict), financial fraud, and identity theft, undermining trust and democracy.
4. **India's experience:** Cases involving fake videos of celebrities like Rashmika Mandanna and public figures have stirred demand for urgent legal remedies.

Denmark's Legal Innovation: Copyright-Based Deepfake Regulation

1. **Imitation Protection:** Prohibits sharing deepfakes using someone's voice or face without consent.
2. **Performance Protection:** Covers acts not traditionally protected by copyright (e.g., spontaneous artistic performances).
3. **50-Year Protection:** Prohibits publication of deepfakes for up to five decades post an individual's death.
4. **Consent-centric approach:** The onus lies on the content creator to prove prior consent from the impersonated individual.
5. **Platform accountability:** Mandates removal of deepfakes and imposes **penalties on non-compliant digital platforms**.

Efficacy of Legal Frameworks in Combating Deepfakes

1. **Expanding rights:** Unlike India and most nations, Denmark's law extends protections to **all individuals**, not just public figures.
2. **Civil remedy:** Enables take-downs and compensation, shifting enforcement to courts rather than vague penal provisions.
3. **Preventive power:** Harm-agnostic design deters creation and dissemination by outlawing realism-based impersonation, regardless of intent.

Global and Indian Legal Landscape

1. **India:** No standalone deepfake law. Courts rely on:

1. **Privacy rights** (Puttaswamy judgment, 2017).

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2. **Publicity rights** (e.g., Amitabh Bachchan, Anil Kapoor cases).
3. **Defamation and IT Act (Section 66E, 67).**
2. **EU's AI Act:** Imposes transparency obligations for deepfake content.
3. **USA:** Some states (e.g., California, Texas) ban deepfakes in election/pornographic contexts. No federal law yet.
4. **China:** 2023 regulations require explicit consent before publishing synthetic content.

Implementation and Enforcement Challenges

1. **Jurisdictional limits:** Denmark's law applies only within national boundaries — enforcement against foreign violators is difficult.
2. **Enforcement burden:** Courts may be overburdened; proving consent or realism might be technically complex.
3. **Satire and fair use:** Ambiguity over what qualifies as parody or fair expression could lead to litigation.
4. **Tech evolution:** Deepfake detection often lags behind creation capabilities, requiring constant upskilling of enforcement agencies.

Balancing Innovation with Rights

1. Laws must **protect digital rights** without stifling innovation in generative AI.
2. Promoting **AI ethics frameworks**, encouraging watermarking standards, and public awareness campaigns are key complements to legal tools.
3. **India's opportunity:** With the upcoming **Digital India Act**, India can integrate consent-driven deepfake regulation inspired by Denmark.

Conclusion

Denmark's copyright-based model offers a progressive path for digital identity protection. Yet, global collaboration, technical safeguards, and agile enforcement remain essential to curb deepfake misuse without curbing innovation.

World Youth Skills Day highlights women's underrepresentation in STEM careers. Examine the socio-economic and institutional barriers preventing industry from leveraging this talent pool, hindering India's inclusive development.

Introduction

Despite India producing the highest proportion of female STEM graduates globally, women remain underrepresented in technical careers. This mismatch reflects deep-rooted socio-economic and institutional barriers limiting inclusive, gender-equitable growth.

The Gender Paradox in STEM Education and Employment

1. **High female STEM graduates:** As per **All India Survey on Higher Education (AISHE) 2021-22**, women constitute **43% of STEM graduates**, the highest among major economies.
2. **Low workforce participation:** However, **only 27%** of India's STEM workforce comprises women (UNESCO, 2021).
3. This mismatch underlines a persistent **education-employment disconnect**, especially in science, engineering, and tech sectors.

Socio-Economic Barriers Hindering Women's STEM Careers

1. **Rigid gender roles:** Societal expectations often restrict women's choices. Technical fields like mechanical engineering or coding are seen as "masculine," discouraging female participation.
2. **Domestic responsibilities:** Childbirth, caregiving, and marriage-related transitions disproportionately affect women's career continuity, especially in demanding STEM roles.
3. **Urban-rural divide:** Female Labour Force Participation Rate (FLFPR) is **47.6% in rural areas vs. 25.4% in urban India** (PLFS 2023-24), reflecting limited formal job access.
4. **Safety concerns:** Fear of harassment and lack of secure work environments in industrial and fieldwork roles deter women from entering or continuing in STEM careers.

Institutional Gaps in Industry and Education Linkages

1. **Lack of industry-academia coordination:** Institutions often impart generic skills, disconnected from industry needs, especially for emerging tech like AI, data science, and robotics.
2. **Inadequate mentoring and internships:** Limited exposure to workplace cultures or role models prevents women from visualizing themselves in leadership roles within STEM domains.
3. **Unwelcoming workplaces:** World Bank studies highlight how **gender bias**, lack of pay equity, and career stagnation lead women to exit STEM jobs despite being qualified.

Policy Interventions and Government Efforts

1. **NEP 2020** promotes experiential learning and inclusion in STEM; Skill India and PM Vishwakarma Yojana push technical training.
2. **Gender Budget 2025-26** allocation: ₹4.49 lakh crore (8.8% of total budget), aimed at women-led development.
3. **Union Budget initiatives:** Term loans for women entrepreneurs, new National Skill Training Institutes for technical upskilling.

Private Sector Role: Emerging Good Practices

1. **UN Women's WeSTEM Programme:** Run in Madhya Pradesh and Gujarat with the Micron Foundation, it links technical training with safety, community awareness, and career pathways.
2. **Corporate mentoring and role models:** Firms are creating inclusive HR policies, mentorship networks, and maternity-career re-entry programmes.
3. Yet, such models are not yet mainstream, and impact remains limited without broader industry adoption.

The Economic Case for Inclusion

1. **McKinsey Global Institute:** Closing the gender gap could add **\$700 billion** to India's GDP by 2025.
2. **World Bank:** Achieving 50% female workforce participation could raise GDP growth by **1 percentage point annually**.
3. Investing in women in STEM is not just moral—it is economic necessity.

Conclusion

To harness its demographic dividend, India must dismantle the barriers keeping women out of STEM careers. Only a gender-inclusive, industry-driven approach can unlock full economic potential and equitable growth.

The POCSO Act's blanket criminalization of adolescent relationships warrants revisit. Critically examine how this approach impacts adolescent autonomy, judicial discretion, and the law's effectiveness in truly protecting children.

Introduction

India's POCSO Act, designed to protect children from sexual exploitation, criminalises all adolescent sexual activity. While well-intentioned, its blanket approach raises concerns over autonomy, justice, and effective child protection.

The Legal Framework and Its Rationale

1. **The POCSO Act, 2012** defines a 'child' as anyone under 18 and criminalises all sexual acts involving minors, even if consensual.
2. Raised the age of consent from 16 to 18 years, aligning with international norms, but without nuanced differentiation between exploitative and non-exploitative adolescent relationships.

The Judicial Conundrum: Consent vs. Protection

1. **Re: Right to Privacy of Adolescents (2025):** Supreme Court upheld conviction under POCSO but refrained from sentencing a man in a consensual relationship with a 14-year-old girl, recognising harm from prolonged judicial intervention.
2. Court acknowledged a **"collective failure of systems"**, but refused to relax the assumption of exploitation due to legal constraints.

3. Despite international recognition of evolving adolescent capacity (e.g., UNCRC's General Comment No. 20), Indian law treats adolescents only as victims, denying them agency.

Impact on Adolescent Autonomy

1. Criminalisation often contradicts lived realities of older adolescents (16–18), especially in rural and lower socio-economic settings where early relationships and marriages are common.
2. **Enfold and P39A Study (2020):** In 25.4% of POCSO cases studied in West Bengal, Assam, Maharashtra, relationships were consensual. In 82% of such cases, the girl refused to testify against the partner.
3. Instead of protection, the law often leads to **institutionalisation, family rejection, trauma, and stigma** for adolescent girls asserting agency within patriarchal constraints.

Judicial Discretion and Paternalism

1. Courts face limitations due to the rigid structure of the Act.
2. While some High Courts (e.g., Calcutta High Court, 2022) took a humane approach, others (e.g., Bombay High Court, 2025) refused to quash charges citing lack of policy clarity.
3. Lack of scope for **judicial discretion** in consensual cases reduces scope for context-based justice, often leading to disproportionate sentencing or trauma-driven proceedings.

Misalignment with Ground Realities

1. The law fails to distinguish between:
 - **Consensual peer relationships** and
 - **Exploitative or coercive acts** by adults or persons in positions of authority.
2. It often criminalises marginalised youth for asserting **limited choices** within societal and economic constraints, especially in child marriage or elopement contexts.

Way Forward: Towards Nuanced Reform

1. Introduce **graded consent framework** recognising adolescents aged 16–18, while maintaining strict protection from coercion, grooming, or abuse by adults in authority.
2. Expand judicial discretion and allow context-specific rulings.
3. Integrate **Comprehensive Sexuality Education**, life-skills training, and psychosocial counselling as part of child protection strategies.
4. Encourage **community-level engagement** to address patriarchal control, stigma, and family abandonment of adolescents.
5. State responses must become **support-oriented**, not merely punitive.

Conclusion

The POCSO Act must evolve to balance protection with adolescent rights. Reforms enabling discretion, context sensitivity, and agency are essential to safeguard vulnerable youth without criminalising their autonomy or lived experiences.

Community Forest Resource (CFR) rights demand a paradigm shift in forest governance. Critically analyze how shedding historical baggage and empowering local communities can foster inclusive development and ecological sustainability.

Introduction

The Forest Rights Act (FRA), 2006, through Community Forest Resource (CFR) rights, envisions a transformative shift in forest governance by recognizing gram sabhas as rightful stewards of forest landscapes.

Colonial Legacy in Forest Governance

1. India's forest management continues to be dominated by a legacy of **centralised, colonial-era control**, primarily aimed at **timber extraction**. The Indian Forest Act of 1927 institutionalised the alienation of forest-dwelling communities, disregarding their customary rights and ecological knowledge.
2. The **working plan system**, rooted in "scientific forestry", has long emphasised timber productivity over ecosystem balance or community needs.
3. This model ignored indigenous knowledge systems, marginalized local communities, and accelerated **ecological degradation**, including biodiversity loss, invasive species proliferation, and shrinking access to forest resources for forest-dependent populations.

CFR Rights under FRA: A Radical Alternative

1. The **Forest Rights Act (FRA), 2006**, particularly under **Section 3(1)(i)**, empowers gram sabhas to protect, conserve, manage, and regenerate forests under their customary tenure.
2. As of 2024, over **10,000 gram sabhas** have received CFRR titles, yet **fewer than 1,000** have been able to prepare management plans—owing largely to bureaucratic roadblocks and institutional resistance.
3. The FRA mandates that **CFR management plans** developed by gram sabhas override existing forest working plans in those areas. This implies a **democratic decentralisation** of forest governance.

Inclusive Development through CFR Rights

Empowering local communities through CFR rights can foster **inclusive development** in multiple ways:

1. **Livelihood Security:** CFR-based governance prioritises **non-timber forest products (NTFPs)**, which form a significant source of income, especially for tribal and forest-dependent communities.
 - Example: In Odisha, **Mendha Lekha** village in Gadchiroli district demonstrated the successful sustainable harvesting of bamboo under CFR rights, increasing local incomes and autonomy.

2. **Gender Inclusion:** Women, traditionally involved in forest collection and use, gain formal decision-making roles in gram sabhas, promoting **gender-sensitive resource governance**.
3. **Social Justice:** CFRR serves as a tool to **rectify historical injustice**, particularly towards Scheduled Tribes and Other Traditional Forest Dwellers (OTFDs), by reinstating their role as custodians of forests.

Ecological Sustainability through Community Governance

Community forest governance is more **contextual, adaptive, and holistic** compared to technocratic, top-down models.

1. **Indigenous knowledge** systems emphasise biodiversity conservation, soil health, and water management—practices deeply embedded in cultural traditions and rituals.
2. **Climate Resilience:** Decentralised governance allows flexible responses to **climate variability** and shifting local ecologies, which bureaucratic working plans often fail to address.
3. Scientific studies (e.g., from **CIFOR** and **FAO**) have shown that **community-managed forests globally exhibit lower deforestation rates** and better regeneration outcomes compared to state-managed forests.

Challenges and Path Forward

1. **Institutional Resistance:** Forest departments have attempted to dilute CFR autonomy by insisting on compliance with the **National Working Plan Code (NWPC)**, despite FRA's statutory precedence.
2. **Capacity Constraints:** Gram sabhas often lack access to funds, technical support, or legal literacy to effectively draft and implement CFR plans.

Reforms Needed:

1. MoTA must issue **binding guidelines** upholding gram sabhas' autonomy in CFR planning.
2. Initiatives like the **Dharti Aaba Janjatiya Gram Utkarsh Abhiyan** must be scaled and improved with iterative, participatory frameworks.
3. Forest departments must shift from a **timber-centric paradigm** to a **people-and-ecosystem-centric science** of forest governance.

Conclusion

True forest justice requires dismantling colonial frameworks, affirming community rights, and reimagining conservation through people-centric governance. CFR rights offer a vital path towards ecological integrity and inclusive rural development.