FEBRUARY 2025 CURRENT AFFAIRS

PART 2 | UPSC CSE 2025!



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1. FDI REFORM IN INSURANCE SECTOR

The Union Budget 2025-26 proposed raising the FDI limit in the insurance sector from 74% to 100%, aiming to attract global investments and achieve the goal of 'Insurance for All by 2047'.

About the Insurance Sector:

What is the Insurance Sector?

- A critical component of the financial services industry, providing risk protection through life, health, and general insurance products.
- Plays a vital role in economic stability by offering financial security against unforeseen events.

Global Status:

- India is the 10th largest insurance market globally and the 2nd largest among emerging markets.
- Expected to become the **6th largest market** by 2033, surpassing countries like Germany and Canada.
- o The market is projected to reach **USD 222 billion by 2026**.

• Insurance Density:

- It is the ratio of premiums collected by insurance companies to the country's population
- o Increased from **USD 11.1 in 2001 to USD 95 in 2023-24**.
 - Life Insurance Density: Stable at USD 70.
 - Non-Life Insurance Density: Rose from USD 22 to USD 25.

Insurance Penetration:

- o It is the percentage of a country's insurance premiums to its gross domestic product (GDP).
- o It's a measure of how developed a country's insurance sector is.

- o Declined from 4% in 2022-23 to 3.7% in 2023-24.
 - Life Insurance Penetration: Fell from 3% to 2.8%.
 - General Insurance Penetration: Remained at 1%.
- LIC and Market Composition:
 - Life Insurance Corporation (LIC): Holds 62.58% market share in new business premiums (FY23).
 - o **Private Sector:** Market share in general and health insurance rose from **48.03% in FY20 to 62.5% in FY23**.

Indian Insurance Sector: A Critical Analysis (MAINS) Introduction

Insurance plays a pivotal

role in financial intermediation, risk mitigation, and capital mobilization. In India, the sector has evolved from a state-controlled monopoly to a liberalized, competitive market, yet insurance penetration remains below global standards. The Union Budget 2025-26 proposal to raise FDI to 100% is a significant step towards deepening the market, enhancing efficiency, and achieving 'Insurance for All by 2047'.

Significance of Insurance Sector:

- Economic Growth: Contributes to financial inclusion & capital formation.
- **Social Security**: Reduces the burden of out-of-pocket expenditures.
- **Stability Factor**: Strengthens the financial sector by hedging against risks.

2. Historical Evolution of Insurance in India

Pre-Independence Era

- 1818: Oriental Life Insurance Company, India's first insurance firm, established.
- **1912**: **First legal framework**—The Insurance Act, 1912.
- **British Monopoly**: Racial discrimination against Indian policyholders.

Post-Independence: State Monopoly Era (1956-1991)

- 1956: Life Insurance Corporation (LIC) nationalized, consolidating 245 private insurers.
- **1972**: General insurance nationalized, creating **4 PSU insurers**—New India, United India, Oriental, and National Insurance.
- **Features**: Government monopoly, lack of innovation, low penetration.

Liberalization & Private Entry (1991-Present)

- 1999: Formation of Insurance Regulatory and Development Authority of India (IRDAI).
- **2000**: **Private players allowed**, enhancing competition (HDFC Life, ICICI Prudential, Max Life).

• FDI Progression:

o **2000**: 26%

o **2015**: 49%

o **2021**: 74%

o **2025** (proposed): 100%

3. Performance Trends in the Insurance Sector

Insurance Penetration (Premiums as % of GDP)

Indicator of sector development and financial inclusivity.

Year	Insurance Penetration (%)	Life Insurance (%)	General Insurance (%)
2000	2.7	2.2	0.5
2022	4.0	3.0	1.0
2023	3.7	2.8	1.0

> **Declining trend** despite market expansion—indicative of affordability issues and policy gaps.

Insurance Density (Premium Per Capita in USD)

Definition: Insurance density refers to the ratio of total insurance premiums collected to the total population of a country, indicating the per capita insurance premium expenditure.

Year	Insurance Density (USD)
2001	11.1
2023	95.0

♦ Life Insurance: USD 70 (stable)

♦ General Insurance: Increased from USD 22 to 25

4. LPG Reforms & Their Aftermath

Positive Outcomes of Liberalization

- **Greater Competition** \rightarrow Product innovation, better services.
- **▼ Technological Advancements** → Digital platforms like **Bima Sugam**.
- ✓ Financial Inclusion → Schemes like PMJJBY, PMSBY, and PMFBY.

Concerns Post-Liberalization

- **Declining Public Sector Share** → LIC's monopoly challenged.
- lacktriangle Unequal Rural Access ightarrow Urban-centric expansion of private insurers.
- \land **Regulatory Challenges** \rightarrow Complex compliance for new entrants.

5. Shortcomings in the Indian Insurance Sector

- \times Low Penetration: Far below global average (~7%).
- X High Premium Costs: 18% GST on insurance premiums.
- X Claim Settlement Issues: Tedious process, high rejection rates.
- X Limited Awareness: Financial illiteracy in rural areas.
- **X** Underdeveloped Reinsurance Market: Dependence on global players like Lloyd's.

Challenges Facing the Sector

Structural Issues

- **Concentration of Market Power**: LIC dominates life insurance.
- ▲ Capital Constraints: Indian insurers struggle to maintain solvency ratios.

Regulatory & Policy Issues

- **^! Unstable FDI Policies** → Frequent amendments deter long-term investments.
- \land **Excessive Compliance** \rightarrow Bureaucratic hurdles in claim settlements.

Economic & Technological Barriers

- **Inflation & Healthcare Costs** \rightarrow Leads to underinsurance.
- \land Cybersecurity Risks \rightarrow Increased digital fraud cases.

Government Initiatives & Schemes

FDI Reforms:

Proposed 100% FDI in Budget 2025-26.

Regulatory Push:

- **IRDAI reforms** to promote transparency.
- **Bima Sugam**: A one-stop digital insurance marketplace.

Major Social Security Schemes:

Scheme	Coverage	Premium	Target Beneficiaries
PMJJBY	₹2 lakh (Life)	₹330/year	Low-income individuals
PMSBY	₹2 lakh (Accidental)	₹12/year	Workers, rural population
PMFBY	Crop insurance	Subsidized	Farmers
Ayushman Bharat	₹5 lakh (Health)	Free	Poor & vulnerable families

Way Forward: Strengthening the Insurance Sector

Expanding Insurance Coverage

- ✓ Increase Financial Literacy → Target rural areas via self-help groups (SHGs).
- **Reduce GST on Premiums** \rightarrow Make policies more affordable.
- ightharpoonup Leverage JAM Trinity ightharpoonup Link insurance schemes to Jan Dhan-Aadhaar-Mobile.

Strengthening Regulatory & Institutional Framework

- **V** Balanced FDI Approach → Safeguard national interests.
- **V** Faster Claim Settlement \rightarrow Use AI-driven automation.
- \checkmark Consumer Protection \rightarrow Simplify policy documentation.

™Digital & Technological Integration

- **Promote InsurTech Startups** \rightarrow AI, blockchain for fraud detection.
- **Cybersecurity Investments** → Prevent data breaches.

Developing New Insurance Products

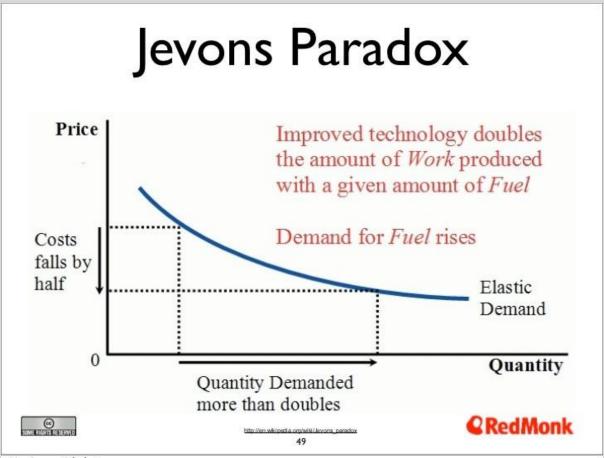
- **Climate Risk Insurance** → Address extreme weather events.
- ightharpoonup Old Age & Pension Schemes ightharpoonup Cater to an aging population.
- \checkmark Affordable Urban Health Plans \rightarrow Reduce out-of-pocket expenses.

Conclusion

India's insurance sector has undergone significant transformation, yet penetration, affordability, and efficiency remain challenges. With FDI liberalization, digital expansion, and rural outreach, India can achieve universal insurance coverage by 2047. A balanced policy approach, consumer-centric regulations, and technology-driven solutions are key to a robust insurance ecosystem.

2. **Jevons Paradox**

The Jevons Paradox has resurfaced in economic discussions after the DeepSeek AI launch led to a selloff in global tech stocks, raising concerns over AI chip demand.



Having said that...

UK Economist William Stanley Jevons (1835-1882)
As steam engines become more efficient, consumption of coal increases!

What is Jevons Paradox?

 It states that when a resource becomes more efficient and cheaper to use, overall consumption increases instead of decreasing.

• Theory & Origin:

 Proposed by William Stanley Jevons in 1865, observing that improved coal efficiency led to higher coal consumption instead of savings.

• Factors Influencing Jevons Paradox

- o **Cost Reduction:** Lower usage costs drive higher demand.
- Increased Accessibility: Efficiency makes resources more widespread.
- **Economic Growth:** Higher productivity spurs industrial expansion.
- o **Elastic Demand:** When demand is highly responsive to price changes, consumption rises sharply.

3. Quantum Teleportation

Introduction

Quantum teleportation is a phenomenon in quantum mechanics where the state of a quantum particle (like an electron or photon) is transferred from one location to another without physically moving the particle itself. This is possible due to **quantum entanglement**, a process that allows two or more particles to be intrinsically linked.

Quantum teleportation does not allow faster-than-light communication but is crucial for the development of **quantum computing**, **secure communication**, **and advanced cryptography**.

Step-by-Step Process of Quantum Teleportation

Step 1: Entanglement Generation

- Two particles, **B** and **C**, are entangled.
- One particle (B) is sent to the receiver while the sender keeps the other (C).

Step 2: Interaction with the Unknown State

- A third particle, **A**, whose quantum state is unknown, interacts with **C** at the sender's end.
- A measurement is performed on **A and C**, causing their quantum states to collapse into a new correlated state.

Step 3: Classical Information Transmission

- The measurement results are sent to the receiver through a classical communication channel (radio, fiber optics, etc.).
- Since classical communication is involved, **instantaneous teleportation is not possible**.

Step 4: Reconstruction at Receiver's End

- The receiver applies a quantum operation on the entangled particle **B** based on the received classical information.
- This transforms **B** into an **exact replica** of the original particle **A**.

Key Principle: No-Cloning Theorem

• The original state of **A** is lost once the teleportation process is complete, ensuring that no exact copies are created.

Implications of Quantum Teleportation

1. Quantum Computing & Information Processing

- Enables **error correction** in quantum computers by transferring qubits across different quantum systems.
- Essential for **scalable quantum networks** connecting multiple quantum computers.

2. Secure Quantum Communication

- Forms the basis for **Quantum Key Distribution (QKD)**, ensuring ultra-secure encryption for communication.
- Protects against cyber threats and data breaches in a post-quantum world.

3. Deep Space Communication

- Potential for instant, tamper-proof communication in space missions.
- Can improve satellite-based secure networks.

4. Fundamental Physics & Research

- Helps in understanding quantum entanglement and information theory.
- Could lead to future discoveries in quantum gravity and teleportation in physics.

Challenges in Quantum Teleportation

1. Technological Limitations

- Requires **extremely low temperatures** and high-precision control of quantum states.
- Current experiments are limited to **small-scale quantum systems** (individual qubits).

2. Distance Constraints

- Long-distance teleportation is challenging due to **decoherence** (loss of quantum information due to environmental interactions).
- The longest successful teleportation (China's Micius satellite) was **1,200 km**.

3. Need for Classical Communication

• Teleportation is not instantaneous as classical information must be transmitted, limiting **real-time applications**.

4. High Infrastructure Costs

• Quantum teleportation requires **advanced optical and cryogenic systems**, making large-scale deployment costly.

Opportunities for India & the World

1. Leadership in Quantum Technology

- Nations like China, the US, and the EU are heavily investing in **quantum research**.
- India can leverage its talent pool and **develop indigenous quantum** capabilities.

2. National Security & Cybersecurity

- Quantum cryptography can protect sensitive government and defense communications.
- Potential to **counter cyber threats** posed by quantum computers.

3. Economic & Scientific Advancements

- Quantum technology is expected to be a **trillion-dollar industry** in the coming decades.
- Startups, academia, and industry can collaborate for **commercial** applications.

India's National Quantum Mission (NQM)

1. Introduction & Objectives

- Launched in April 2023, India's ₹6,000 crore (\$730 million) initiative to boost quantum technology research.
- Aims to position India as a global leader in quantum computing, cryptography, and materials science.

2. Key Areas of Focus

- **Quantum Computing:** Development of 50-100 qubit quantum computers.
- **Quantum Communication:** Secure satellite-based QKD and fiber-optic quantum networks.
- **✓ Quantum Materials & Sensors:** Precision sensors for defense and space applications.
- **Workforce Development:** Establishing **Quantum Centers of Excellence** in IITs, IISc, and national labs.

3. Strategic Importance

- Strengthens India's cybersecurity and defense communication networks.
- Helps India compete with global quantum leaders like China and the US.
- Supports initiatives like **Digital India and Aatmanirbhar Bharat** in emerging technologies.

Conclusion

Quantum teleportation is a breakthrough in quantum mechanics with applications in secure communication, computing, and national security. While challenges remain, India's National Quantum Mission (NQM) is a step toward achieving self-reliance in quantum technologies. With strategic investments, India can emerge as a global quantum leader in the 21st century.

4. Beggar-Thy-Neighbour Policy

Definition:

Beggar-thy-neighbour policies refer to economic measures adopted by a country to improve its own economic condition at the expense of other nations. These policies are often protectionist and include high tariffs, import quotas, and currency devaluation to gain a competitive advantage in global trade.

Origin & Context:

- Coined by **Adam Smith** in *The Wealth of Nations* (1776) to critique mercantilist trade practices.
- Became prominent during the **Great Depression (1930s)** when countries imposed retaliatory tariffs and currency devaluations, worsening the global economic crisis.

Key Features:

- 1. **Tariffs and Quotas:** High tariffs or strict import quotas protect domestic industries from foreign competition.
- 2. **Currency Manipulation:** Deliberate devaluation of currency to make exports cheaper and imports expensive.
- 3. **Trade Surplus Focus:** Policies aimed at maximizing exports and minimizing imports to achieve a favorable balance of trade.

Significance & Impact:

✓ Short-Term Benefits:

- Protects domestic industries and saves jobs.
- Enhances national security by reducing dependence on foreign goods.
- Boosts domestic production and demand.

X Long-Term Consequences:

- **Global Trade Wars:** Retaliatory tariffs and devaluations reduce overall trade.
- **Higher Consumer Prices:** Domestic consumers face inflation due to costlier imports.
- **Economic Instability:** Can contribute to financial crises, as seen during the Great Depression.

Examples in Global Economy:

- **Smoot-Hawley Tariff Act (1930):** The U.S. imposed high tariffs, leading to global retaliations and worsening the Depression.
- **China-U.S. Trade War (2018-Present):** Tariff hikes and trade restrictions affecting global supply chains.
- **Post-COVID Protectionism:** Many countries imposed restrictions on essential goods exports, impacting global trade.

Relevance for India:

- India's **Self-Reliant (Atmanirbhar Bharat) policy** seeks economic self-sufficiency without extreme protectionism.
- India has **imposed tariffs** on Chinese goods but also engages in **bilateral trade agreements** to avoid trade wars.
- WTO & Free Trade Agreements (FTAs): India navigates between protecting domestic industries and engaging in global trade.

Conclusion:

While beggar-thy-neighbour policies may offer short-term economic benefits, they often lead to long-term global economic instability. A balanced approach, integrating protectionist measures with international cooperation, is key to sustainable economic growth.

5.De-notified Tribes Classification

After three years of research, the Anthropological Survey of India (AnSI) and Tribal Research Institutes (TRIs) have for the first time systematically categorized 268 denotified, semi-nomadic, and nomadic tribes across India.

Denotified Tribes (DNTs) in India: Issues, Challenges, and Policy Measures

Who Are Denotified Tribes (DNTs)?

Definition:

Denotified Tribes (DNTs) are communities that were formerly classified as "criminal tribes" under the Criminal Tribes Act of 1871 during British rule in India. They were stigmatized as hereditary criminals and subjected to strict surveillance.

Post-Independence Developments:

- In 1952, the Criminal Tribes Act was repealed, and these communities were "de-notified."
- Despite legal de-notification, they continue to face social stigma and economic hardships.

Sub-Categorization:

- DNTs, along with Nomadic Tribes (NTs) and Semi-Nomadic Tribes (SNTs), form a significant marginalized group.
- They often lack a clear classification under Scheduled Castes (SC), Scheduled Tribes (ST), or Other Backward Classes (OBC).

Key Findings from Recent Classification Study

- **268 communities** systematically documented for the first time.
- **179 communities** recommended for inclusion under SC/ST/OBC categories to provide reservation benefits.
- **63 communities** found untraceable, possibly due to merging with other groups or migration.
- **Political and legal implications**: The classification has sparked debates on reservations and special status.

Issues Faced by Denotified Tribes

1. Identity and Stigma

- Despite being de-notified, many DNTs are still socially ostracized and labeled as criminals.
- The lack of identity certificates further alienates them from mainstream society.

2. Lack of Classification

 269 DNT communities remain outside SC/ST/OBC categorization, leading to exclusion from reservation benefits and welfare schemes.

3. Economic Marginalization

- Limited access to education, healthcare, housing, and employment.
- Most engage in traditional occupations that are unregulated, low-paying, or seasonal.

4. Delay in Implementing Reforms

- o The Idate Commission (2015-2017) recommended classification and sub-quotas, but its proposals remain unimplemented.
- Government initiatives like the SEED scheme have seen slow progress.

5. Displacement and Loss of Livelihoods

- Many DNTs are nomadic or semi-nomadic, leading to landlessness and displacement.
- o Industrialization and urbanization have further eroded their traditional livelihoods.

6. Administrative Apathy

- State governments have been slow in issuing caste certificates to DNT communities.
- Poor coordination between Union and state governments delays reforms.

Government Initiatives

1. Repeal of the Criminal Tribes Act (1952)

Abolished the designation of hereditary criminal tribes.

2. Idate Commission (2015-2017)

- o Recommended classification under SC/ST/OBC categories.
- Proposed a sub-quota for DNTs within the reservation framework.

3. **SEED Scheme (2022)**

- Aims at the socio-economic empowerment of DNTs, NTs, and SNTs.
- Provides support for education, housing, livelihoods, and health.
- Implementation has been slow, with only around 200,000 certificates issued.

4. Development and Welfare Board for DNTs (DWBDNC)

 Established under the Ministry of Social Justice and Empowerment to oversee the welfare of these communities.

5. Financial Aid

- Special scholarships for DNT students.
- o Skill development programs under central schemes.

Shortcomings of Government Initiatives

1. Poor Implementation

 The SEED scheme took two years to become operational, and its progress remains sluggish.

2. Inadequate Classification

 Many DNT communities are yet to be included in SC/ST/OBC categories, leaving them outside reservation benefits.

3. Administrative Hurdles

 Delays in issuing caste certificates hinder access to welfare programs.

4. Insufficient Awareness

 Welfare schemes lack widespread awareness among DNT communities, leading to poor uptake.

5. Limited Budget Allocation

 Welfare programs often face budgetary constraints, limiting their effectiveness.

Challenges and Policy Debates

Support for SC/ST/OBC Inclusion

- o Ensures access to education, jobs, and social welfare schemes.
- o Provides legal recognition and identity to these communities.

Demand for a Separate Reservation Category

 Some advocate for a distinct classification, fearing dilution of existing SC/ST/OBC reservations.

Political Controversies

 Activists question the basis of classification and its potential impact on current reservation structures.

• Historical Misclassification

 Earlier census data wrongly categorized some tribes as castes, creating identity confusion.

Way Forward

1. Expedited Classification

 Implement the Idate Commission's recommendations for categorizing DNTs under SC/ST/OBC and create a dedicated sub-quota.

2. Strengthening the SEED Scheme

 Improve implementation with proper monitoring and state coordination.

3. Awareness and Outreach

 Launch mass campaigns to inform DNTs about their rights and welfare schemes.

4. Focus on Education and Livelihoods

 Prioritize scholarships, vocational training, and skill development programs for DNT youth.

5. Legal Protection

 Enact strict laws to prevent discrimination and stigmatization of DNTs

6. Dedicated Budget

 Allocate sufficient funds to ensure the effective execution of welfare programs.

7. Community Participation

 Engage DNT leaders and stakeholders in policymaking to address their unique needs effectively.

Conclusion

Addressing the systemic issues faced by Denotified Tribes is crucial for their socio-economic upliftment. Effective governance, inclusive policies, and targeted interventions can help fulfill the constitutional promise of equality and justice for these marginalized communities.

6. Annual Status of Education Report (ASER) 2024 – Key Highlights

1. Conducting Agency: Pratham NGO

2. Survey Scope:

- Rural household survey assessing schooling status and learning levels.
- Covers three groups: Pre-primary (3-5 years), Elementary (6-14 years), Older Children (15-16 years).

3. Enrollment Trends:

- Overall enrollment rate (6-14 years): 98.1% (2024)
- Pre-school (3-5 years): Enrollment of 5-year-olds rose from 58.5% (2018) to 71.4% (2024).

4. Government School Enrollment:

 66.8% in 2024, nearly returning to pre-pandemic levels (65.6% in 2018, 72.9% in 2022).

5. Learning Recovery:

○ Class III (Class II-level reading): 27.1% (2024) \rightarrow Up from 20.5% (2022)

- Class V (Class II-level reading): 48.7% (2024) → Approaching 50.4% (2018, pre-pandemic).
- o Class III (subtraction): 33.7% (2024) \rightarrow Highest in a decade.
- o Class V (division): 30.7% (2024) \rightarrow Surpassing pre-pandemic 27.8% (2018).

6. Digital Literacy Insights:

- ASER 2024 introduced smartphone access & digital skills assessment.
- Gender gap: 85.5% boys vs. 79.4% girls reported knowing how to use smartphones.

7. State-wise Gains:

- Low-performing states (UP, Bihar, MP, TN): Significant recovery in learning.
- High-performing states (HP, Maharashtra, Uttarakhand,
 Odisha): 10% increase in reading.

Mains (GS3)

1. Enrollment & Schooling Trends - A Positive Outlook

- ✓ Near-universal enrollment (98.1%) indicates the success of Right to Education (RTE) Act (2009), NEP 2020, and the NIPUN Bharat Mission.
- ✓ **Pre-school gains** reflect increasing awareness of **early childhood education** and expansion of **Anganwadi-Balvatika linkages** under NEP 2020.

Challenges:

- Transition from enrollment to learning outcomes remains an issue.
- Dropout risk in secondary education still persists.

2. Learning Recovery & Factors Behind Improvement

- ♦ Key Drivers of Learning Gains in Reading & Arithmetic
- Post-Pandemic Catch-Up Programs:
 - Focused interventions like NIPUN Bharat Mission (2021) accelerated Foundational Literacy and Numeracy (FLN).
 - Teacher Training & Pedagogical Reforms:

- More states adopted **activity-based learning** (e.g., Tamil Nadu's **Ennum Ezhuthum** mission).
 - **✓** Technology in Education:
- Initiatives like **PM e-Vidya**, **DIKSHA**, and state-led **EdTech** solutions helped bridge learning gaps.
 - **✓** Community & NGO-Led Interventions:
- **Pratham's Teaching at the Right Level (TaRL)** method widely adopted in low-performing states.
 - ✓ Increased Parental Awareness & Digital Access:
- Greater involvement in early childhood learning (noted in rising preschool enrollments).

Challenges & Areas for Improvement:

- Quality of Learning Outcomes: Gains are significant but uneven across states.
- Shortfall in Foundational Numeracy: Class III subtraction ability (33.7%) is still below optimal levels.

3. Government vs. Private Schools - A Surprising Shift

- ✓ Arithmetic improvement higher in government schools (+36.6%) than private schools (+10.2%).
- ✓ Class III government school reading levels rose to 23.4% (from 16.3% in 2022).
- Reasons for Government School Gains:
 - Increased public funding post-pandemic (Samagra Shiksha Abhiyan).
 - Mid-Day Meal (PM POSHAN) + improved school infrastructure = better retention.
 - Shift in parental preference during COVID-19 (cost factors).

Challenges:

- Private schools still outperform in absolute learning levels.
- Need for curriculum redesign & localized teaching strategies.

4. Digital Literacy & Gender Gap - A Growing Concern

- First-time digital literacy assessment: Focus on smartphone access & digital skills (14-16 years).
- ✓ More boys (85.5%) than girls (79.4%) reported knowing how to use smartphones.
- ♦ Why Does the Gender Divide Persist?
 - Cultural barriers limiting girls' access to devices.
 - Digital infrastructure (internet availability) remains weak in rural areas.
 - · Need for gender-sensitive digital literacy programs.
- **✓** Policy Measures to Bridge the Gap:
 - Expand PM e-Vidya & DIKSHA content in regional languages.
 - Targeted digital inclusion initiatives (E.g., Haryana's Super 100 Program for girls).

5. State-wise Performance - A Differentiated Recovery

- **☑ UP, Bihar, MP, Tamil Nadu:** Strong recovery in learning.
- **✓ HP, Maharashtra, Uttarakhand, Odisha:** 10-percentage point rise in reading.
- Factors Behind State-wise Gains:
 - Localized FLN initiatives (e.g., Mission Prerna in UP, Mo School in Odisha).
 - Better teacher-student ratios in high-performing states.
 - Improved infrastructure under Samagra Shiksha Abhiyan.

Challenges & Policy Recommendations:

- Address intra-state rural-urban disparities.
- Customize interventions for lagging districts (district-level FLN tracking).

NIPUN Bharat (National Initiative for Proficiency in Reading with Understanding and Numeracy)

Introduction

- ◆ Launched: July 2021 under Samagra Shiksha Abhiyan
- **♦** Ministry: Ministry of Education (MoE)
- ♦ Objective: Ensure foundational literacy and numeracy (FLN) for all children by Grade 3 by 2026-27.

Why Was NIPUN Bharat Launched?

- ASER 2018 & 2022 reports showed low literacy & numeracy levels among primary students, worsened by COVID-19.
- NEP 2020 identified FLN as a national priority, emphasizing early-grade interventions.
- Early learning crisis: Children struggle to read basic texts or solve simple math problems, affecting future learning outcomes.

Key Features of NIPUN Bharat

1. Foundational Literacy & Numeracy (FLN) Goals

- Reading & Writing Proficiency: Children should read Class II-level texts fluently by Class III.
- **☑** Basic Numeracy: Mastery of addition, subtraction, multiplication, and division by Grade 3.
- Cognitive & Language Development: Focus on oral language skills, listening, and comprehension.

2. Pedagogical & Assessment Reforms

- ✓ Activity-Based Learning & Play-Based Methods aligned with NEP 2020's emphasis on experiential learning.
- **✓** Teacher Training via NISHTHA (National Initiative for School Heads and Teachers' Holistic Advancement).
- ✓ Continuous Assessment: National Achievement Survey (NAS) & State
 Learning Outcome Surveys monitor progress.

3. Implementation Framework

- ightharpoonup National Steering Committee (Chaired by Education Minister) ightharpoonup Oversees policy & execution.
- ightharpoonup State FLN Missions ightharpoonup State governments drive region-specific strategies.
- lacktright District-Level Task Forces ightarrow Ensure last-mile implementation.
- ightharpoonup School Development Plans (SDPs) ightharpoonup Schools integrate FLN goals into daily teaching.

Impact of NIPUN Bharat (As Seen in ASER 2024)

1. Improvement in Reading Skills

- Class III students reading at Class II level: 27.1% in 2024 (up from 20.5% in 2022).
- Class V students reading Class II-level text: 48.7% in 2024 (compared to 42.8% in 2022).
- Sign of recovery from pandemic-induced learning losses.

2. Growth in Arithmetic Proficiency

- Class V (division skills): 30.7% in 2024 surpassing pre-pandemic (27.8% in 2018).
- Indicates success of targeted numeracy programs.

3. Government Schools Outperforming Private Schools in Arithmetic

- W Government schools saw a 36.6% increase in subtraction skills in Class III, compared to just 10.2% in private schools.
- NIPUN Bharat's structured interventions helped bridge learning gaps in public schools.

Challenges & Way Forward

1. Uneven Implementation Across States

- \Rightarrow Performance varies \rightarrow Some states like Uttarakhand, Odisha, Maharashtra saw strong gains, but lag in UP, Bihar.
- Solution: Strengthen state monitoring mechanisms under State FLN Missions.

2. Teacher Training Gaps

- Not all teachers are fully trained in FLN methodologies.
- Solution: Scale up NISHTHA teacher training & introduce tech-based learning aids.
- 3. Digital Divide in Foundational Learning
- ** ASER 2024 shows gender gap in smartphone access (85.5% boys vs. 79.4% girls).
- Solution: Expand digital literacy under NIPUN Bharat, especially for girls & marginalized groups.

7. UDISE+ AND SCHOOL INFRASTRUCTURE IN INDIA

What is UDISE+?

Unified District Information System for Education Plus (UDISE+) is an integrated school database system under the Ministry of Education. It collects, verifies, and analyzes data on school infrastructure, enrolment, and quality indicators, aiding in evidence-based policymaking.

Dimensions in E-Governance (GS-2):

- Transparency & Accountability: Helps track real-time school performance.
- Data-Driven Decision-Making: Supports education planning and resource allocation.
- Efficiency & Monitoring: Enables digital oversight for infrastructure and enrolment trends.

Key Findings of UDISE+ (2023-24)

- 1. Basic School Infrastructure (GS-2 & GS-3: Education, Public Infrastructure)
 - Electricity: 1.52 lakh schools still lack electricity; government schools account for most of them.
 - Drinking Water: 24,580 schools lack drinking water facilities despite claims of availability.
 - Toilets: 67,000 schools, mostly government-run, operate without functional toilets.
- Governance Concern: Poor infrastructure impacts learning outcomes, student retention, and hygiene (SDG 4 Quality Education).
- 2. Access for Differently-Abled Students (GS-2: Social Justice)
 - Only 33.2% of government schools have disabled-friendly toilets; just 30.6% are functional.
 - 77% of schools have ramps, but only 52.3% include handrails.
- Policy Implication: Violation of the Rights of Persons with Disabilities Act, 2016; need for inclusive school infrastructure under NEP 2020.
- 3. Technology & Co-Curricular Activities (GS-3: Science & Tech in Education)
 - 50% of schools lack functional computers; only 17.5% have arts & crafts rooms.
 - Only 1.6 lakh out of 2.86 lakh secondary schools have integrated science labs.
- Digital Divide: Limits skill development, affecting India's demographic dividend.
- 4. Renewable Energy Adoption (GS-3: Sustainable Development & Energy Security)
 - Only 10.5% of schools have solar panels, with government schools faring worse (8.8%).
- Opportunity: Aligns with India's green energy goals (National Solar Mission).

5. Regional Disparities (GS-2: Governance & GS-3: Development Issues)

- Single-Teacher Schools:
 - $_{\odot}$ Declined from 1.18 lakh (2022-23) to 1.10 lakh (2023-24) \rightarrow positive trend.
 - Student enrolment in such schools also dropped from 47.43 lakh to 39.94 lakh.
- Concern: Decline may indicate consolidation of schools but raises questions on quality teacher availability.
 - Zero Enrolment Schools:
 - o Increased from 10,294 (2022-23) to 12,954 (2023-24).
 - Highest in West Bengal (3,254), Rajasthan (2,167),
 Telangana (2,097).
- Policy Challenge: Could indicate school closures, migration trends, or inefficiencies in resource distribution.

8. State of Groundwater in India (2024)

The Annual Groundwater Quality Report 2024 has pointed out concerns regarding ground water in various parts of the country arising from nitrates, arsenic, fluoride and uranium among others.

1. High Dependence:

- Groundwater accounts for 65% of India's irrigation and 85% of its drinking water needs.
- India is the world's largest user of groundwater, withdrawing over 250 billion cubic meters annually.

2. Depletion:

- Reports by the Central Ground Water Board (CGWB) indicate that over 20% of India's groundwater blocks are either overexploited or critical.
- States like Punjab, Haryana, Rajasthan, Uttar Pradesh, and Tamil Nadu are experiencing alarming depletion rates.

3. Contamination:

- Groundwater contamination from arsenic, fluoride, nitrates, and heavy metals is widespread.
- 29% of wells tested by the Ministry of Jal Shakti in 2022-23 were contaminated.

Reasons for Groundwater Depletion

1. Unregulated Extraction:

 Unchecked and unregulated borewells, particularly for agriculture, have led to excessive withdrawals.

2. Water-Intensive Agriculture:

- Cultivation of water-intensive crops like paddy and sugarcane in water-scarce regions (e.g., Punjab and Maharashtra) exacerbates the issue.
- Overdependence on free electricity and subsidies for irrigation has worsened overextraction.

3. Climate Change:

 Reduced rainfall and erratic monsoon patterns limit natural groundwater recharge.

4. Urbanization and Industrialization:

 Increased demand for water in urban areas and industries, combined with impermeable surfaces, reduces recharge capacity.

5. Neglect of Traditional Water Systems:

o Traditional water-harvesting systems like tanks and ponds have been abandoned in favor of modern infrastructure.

6. Overuse of Fertilizers:

• Excessive use of chemical fertilizers contributes to nitrate contamination in groundwater.

Challenges in Groundwater Conservation

1. Fragmented Governance:

 Water is a state subject, leading to lack of coordinated efforts between central and state governments.

2. Poor Implementation:

 Conservation policies like groundwater regulations often remain on paper due to weak enforcement mechanisms.

3. Lack of Awareness:

• Farmers and industries lack awareness of sustainable water use practices.

4. Inadequate Data:

 Limited real-time monitoring of groundwater levels and quality hampers effective policy formulation.

5. Resistance to Change:

 Farmers are resistant to shifting away from water-intensive crops due to entrenched practices and economic incentives.

6. Urban Groundwater Exploitation:

 Urban areas often lack centralized water supply systems, leading to overdependence on groundwater.

GOVERNMENT MEASURES

1. Jal Shakti Abhiyan:

- Focuses on rainwater harvesting, water conservation, and rejuvenation of water bodies.
- o Implementation remains inconsistent across regions.

2. Atal Bhujal Yojana (ABHY):

- A community-driven scheme to manage groundwater in overexploited regions.
- o Limited success due to slow adoption by states.

3. National Water Policy (2012):

 Advocates for water conservation and the sustainable use of groundwater.

4. Subsidy Reforms:

 Some states like Gujarat have introduced reforms in electricity subsidies to discourage overextraction of groundwater.

5. Groundwater Regulation:

- Guidelines by the CGWB aim to regulate groundwater extraction for industries and agriculture.
- Compliance remains poor.

6. Promotion of Micro-Irrigation:

 Subsidies for micro-irrigation techniques like drip and sprinkler irrigation to reduce water use in agriculture.

Shortcomings in Government Efforts

1. Policy Gaps:

o There is no comprehensive and binding national law for groundwater management.

2. Implementation Issues:

 Lack of coordination between states and the Centre slows the progress of schemes like ABHY.

3. Focus on Demand, Not Supply:

 Policies focus on curbing extraction but neglect recharge and augmentation efforts.

4. Political Incentives:

• Free electricity for farmers in many states continues to encourage overuse of groundwater.

5. Insufficient Monitoring:

• Absence of real-time monitoring systems for groundwater levels and contamination.

6. Limited Community Participation:

o Insufficient involvement of local communities in water conservation programs.

Way Forward

1. Strengthen Regulation:

- Enact a national law on groundwater management with a focus on sustainability.
- o Ensure stricter enforcement of existing guidelines.

2. Promote Water-Efficient Crops:

- Encourage crop diversification towards less water-intensive crops.
- Provide financial incentives to farmers for adopting sustainable practices.

3. Integrate Technology:

 Use GIS and remote sensing for real-time monitoring of groundwater levels and quality.

4. Recharge Infrastructure:

- Revive traditional water-harvesting systems like tanks, stepwells, and ponds.
- Expand artificial recharge projects in overexploited areas.

5. Rationalize Subsidies:

 Reform electricity and fertilizer subsidies to discourage overuse of groundwater.

6. Awareness Campaigns:

 Educate farmers, industries, and urban residents on water conservation methods.

7. Community-Driven Models:

o Involve local stakeholders in water management through participatory programs like Atal Bhujal Yojana.

8. Climate Resilience:

 Integrate groundwater conservation into climate adaptation strategies.

By addressing governance, technology, and behavioral issues, India can ensure sustainable groundwater management for future generations.

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