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EDITORIAL INDEX

India's space programme, a people's space journey

- India's space programme gained renewed public attention in 2025-26 due to major milestones such as an Indian astronaut interacting with the Prime Minister from the **International Space Station**, progress in Gaganyaan, rapid growth of private space startups, and the articulation of a long-term vision for India's space leadership during **Amrit Kaal.**

India's Space Programme:

- India's space programme, led by **Indian Space Research Organisation**, has evolved from a **mission-oriented scientific effort** into a people-centric national capability that supports governance, economy, security, and global cooperation.

Evolution through key missions:

- **Chandrayaan-1 (2008)** confirmed the presence of water molecules on the Moon.
- **Chandrayaan-2 (2019)** mapped the Moon in high precision and prepared technology for future landings.
- **Chandrayaan-3 (2023)** made India the first country to soft-land near the lunar south pole.
- **Mars Orbiter Mission (2014)** made India the first Asian country to reach Mars orbit and the only one to do so on its maiden attempt.
- **Aditya-L1** studies the Sun's corona and space weather.
- **XPoSat (2024)** studies black holes and extreme cosmic phenomena.
- **SpaDeX** successfully demonstrated in-orbit docking, a key capability for future space stations.
- India has also launched over 400 foreign satellites, making it a trusted and cost-effective global launch partner.

Why Does India's Space Programme Matters?

- Builds national capability and pride by placing India among leading spacefaring nations.
- Supports daily governance, including disaster management, **weather forecasting**, fisheries advisories, crop assessment, railway safety, and **infrastructure planning under PM Gati Shakti**.
- Strengthens strategic **autonomy in a critical frontier** involving communication, navigation, and surveillance.
- Inspires youth and STEM education, creating a pipeline of scientists, engineers, and innovators.

- Drives economic growth, innovation, and employment through the expanding space economy.
- Space in India has moved from being a scientific luxury to a democratic public utility.

How is India Expanding its Space Capability?

1. Human Spaceflight and Exploration Roadmap

- **Gaganyaan** aims to send Indian astronauts to space by 2027, with an approved outlay of ₹20,000+ crore.
- Four Indian Air Force test pilots are undergoing astronaut training.
- India plans to build a **Bharatiya Antariksh Station (BAS) by 2035** and achieve an Indian human Moon landing by 2040.

2. Policy and Institutional Expansion

- The government has opened the space sector to private players, leading to 350+ startups working on satellites, launch vehicles, and downstream services.
- India's space budget increased from ₹5,615 crore (2013-14) to ₹13,416 crore (2025-26), with an additional ₹5,000 crore in user funds.

3. Economic and Technological Push

- India's space economy is valued at $8 billion, projected to grow to $44 billion.
- Focus areas include semi-cryogenic engines, electric propulsion, quantum communication, in-orbit servicing, robotics, and autonomy.
- The government has set a target of five space unicorns and scaling launches to 50 per year.

4. Youth and Skill Development

- Hosting the International Olympiad on Astronomy and Astrophysics (2025) with participation from 60+ countries.
- Initiatives like ISRO Robotics Challenge and Bharatiya Antariksh Hackathon connect students directly with space technology.

Implications

- **Governance:** Better disaster preparedness, climate monitoring, and infrastructure planning.
- **Economy:** Job creation, startup growth, and export opportunities in high-tech sectors.
- **Security:** Enhanced surveillance, communication, and strategic deterrence.
- **Global standing:** India emerges as a reliable space partner and norm- shaper.
- **Society:** Greater scientific temper and aspiration among youth.

Challenges

- High cost of space missions and technological complexity
- Shortage of skilled manpower in advanced space technologies
- Intense global competition in launch services and satellite markets
- Requirement of sustained and predictable funding for long-term goals
- Need for better coordination across multiple missions, users, and agencies

Way Forward

- Strengthen public-private partnerships and promote indigenous manufacturing to reduce costs and improve efficiency.
- Expand specialised training programmes, deepen collaboration between universities and ISRO, and invest in long-term skill development.
- Focus on India's strength in low-cost, high-reliability missions and continuously improve launch frequency and success rates.
- Implement a clear 15-year integrated space roadmap aligned with the vision of **Viksit Bharat 2047** to ensure mission synergy.
- Encourage commercial revenues, user-based services, private investment, and international collaboration to supplement government funding.

Conclusion

- India's space programme has transformed into a people-centric national mission that combines science, development, security, and inspiration. As India enters Amrit Kaal, its space journey reflects growing confidence, global leadership, and the belief that the future belongs not just to rockets and satellites, but to citizens empowered by them.

Decision to End "10-minute Delivery" Model

- Recently, following intervention by Union Labour Minister Mansukh Mandaviya, delivery platforms Blinkit, Zepto, Zomato, and Swiggy have decided to remove the 10-minute delivery system from their applications.

Reasons for the Change

- The shift comes in the aftermath of a nationwide gig-worker strike on New Year's Eve 2025, during which delivery partners protested unsafe working conditions, heightened road accident risks, and

psychological stress arising from rigid ultra-fast delivery targets.

- Subsequently, the Union Labour Ministry directed major quick-commerce and food-delivery platforms, including Blinkit, Zepto, Swiggy, and Zomato to discontinue time-bound delivery branding that could incentivise unsafe work practices.

About the 10-Minute Delivery Model

- The 10-minute delivery model is a quick-commerce (q-commerce) strategy that relies on a dense network of nearby dark stores, AI-driven demand forecasting, and algorithm-optimised logistics. It aims to provide extreme convenience by delivering groceries, essential goods, and select retail products within ten minutes of order placement, primarily in high-density urban areas.

Rise of the Gig Economy in India

- India's gig economy—encompassing platforms such as Blinkit, Swiggy, Zomato, Zepto, Ola, and Uber—has expanded rapidly due to **increased digital penetration, urbanisation**, and a large young workforce. The sector has enabled flexible employment opportunities and economic inclusion, particularly for urban youth.

Trends of 10-minute delivery:

- Rapid expansion since 2021 with quick-commerce platforms competing on speed as a differentiator.
- Increasing use of algorithmic management to push delivery partners to meet tight timelines.
- Peak-demand dependence during festivals and late-night hours, intensifying work pressure.
- Rising worker mobilisation and strikes globally against hyper-speed delivery promises.

The Case for Banning 10-Minute Deliveries

- **Road Safety & Public Risk:** Ultra-compressed delivery timelines convert public roads into performance arenas, incentivising riders to violate traffic norms to avoid algorithmic penalties and income loss.
- E.g. In Bengaluru delivery clusters, traffic police reports show spikes in wrong-way driving and signal jumping **during peak "instant delivery" hours,** directly linking speed targets to unsafe behaviour.

- **Occupational Health Crisis:** Algorithmic gamification pushes riders into prolonged high-stress cycles, where earnings depend on continuous hyper-alertness, leading to physical exhaustion and

psychological burnout.

- E.g. Medical clinics around Delhi-NCR dark stores report increased cases of back injuries, wrist strain, and anxiety disorders among riders working 10–12 hour speed-based shifts.

- **Human Rights & Labor Dignity:** Reducing workers to time-optimised "delivery nodes" strips them of rest, autonomy, and humane working conditions, undermining the principle of dignified labour.
- E.g. Rider protests near quick-commerce warehouses highlight the absence of toilets, shade, or rest areas, revealing systemic neglect of basic workplace dignity.

- **Externalization of Costs:** Platforms internalize profits from speed while offloading fuel costs, vehicle depreciation, and accident risks entirely onto workers, distorting fair compensation.
- E.g. Despite higher delivery intensity, riders report declining per-order earnings as bonuses replace stable pay, while repair and fuel expenses rise sharply.

- **Regulatory Misalignment:** The instant delivery model circumvents the employer's duty of care by treating safety risks as individual choices rather than structural obligations.
- E.g. This directly conflicts with the Code on Social Security, which mandates health protection and accident safeguards for platform-based workers.

However, several structural challenges persist:

- **Uncertain incomes:** Heavy dependence on incentives and low base pay.
- **Algorithmic control:** Task allocation, performance evaluation, and remuneration determined by opaque platform algorithms.
- **High-pressure delivery models:** Ultra-fast delivery targets heighten accident risks and compromise worker safety.
- **Lack of social protection:** Limited access to health insurance, accident coverage, and pension benefits.
- Strikes during peak demand periods, including Christmas 2025, highlighted these systemic issues, with tens of thousands of gig workers protesting unsafe conditions and precarious livelihoods.

Challenges in Regulating Instant Delivery:

- **Consumer Dependency:** Once hyper-convenience becomes habitual, political resistance grows against any regulation perceived as reducing consumer comfort.

- E.g. During recent gig-worker strikes, public backlash against service suspensions revealed how instant delivery has become a perceived necessity rather than a luxury.

- **Algorithmic Opacity:** Opaque algorithms mask penalties through ranking and visibility controls, making regulatory detection and enforcement extremely difficult.
- E.g. Instead of explicit fines, platforms silently deprioritize slower riders via "shadow-banning," reducing orders without leaving auditable evidence.

- **Policy Arbitrage:** Inconsistent state-level regulation allows platforms to concentrate operations in regions with weaker labour protections.
- E.g. States like Rajasthan with specific gig-worker laws contrast sharply with states lacking any framework, enabling regulatory evasion.

- **Revenue vs. Safety Trade-off:** Speed restrictions may reduce order volumes, creating fear among workers that safety reforms will cut their already precarious incomes.
- E.g. Many riders hesitate to support bans as surge incentives linked to fast deliveries form a significant portion of daily earnings.

- **Evasive Business Modeling:** Platforms adapt language without changing pressure, maintaining unsafe expectations under new branding.
- E.g. Rebranding "10-minute delivery" as "Fastest" or "Priority" preserves the same speed incentives while bypassing explicit bans.

Legal Recognition under the Code on Social Security, 2020

- The Code on Social Security (SS), 2020 marks a significant milestone by formally recognising gig workers and platform workers within India's labour framework for the first time. Earlier, these workers were largely excluded from traditional labour laws such as the Payment of Wages Act, 1936 and the Employees' State Insurance Act, 1948.

Key definitions under the Code include:

- **Aggregator:** A digital intermediary connecting buyers with service providers.
- **Gig worker:** An individual working outside a conventional employer–employee relationship for remuneration.
- **Platform worker:** A person providing services through an online platform.

- **Platform work:** Work arrangements facilitated digitally in exchange for payment.

Social Security, Welfare, and Portability

- The Code mandates the creation of a Social Security Fund, financed through contributions from aggregators such as Amazon, Flipkart, Swiggy, and Zomato. The Fund is intended to support health insurance, accident coverage, maternity benefits, and old-age pensions for gig and platform workers.
- It also introduces portability of benefits through the e-Shram portal, enabling workers to retain entitlements while switching platforms or occupations. A centralised database facilitates targeted welfare delivery, skill development initiatives, and grievance redressal mechanisms, including toll-free helplines and facilitation centres.

Way Forward

- **Mandatory Safety Windows:** Regulation should replace arbitrary time promises with distance- and traffic-calibrated delivery windows prioritising legal compliance.
- E.g. A 5-km/20-minute cap aligns delivery expectations with urban traffic realities, reducing incentives for rule violations.

- **Algorithmic Accountability:** Platforms must disclose speed, pay, and penalty logic to ensure fairness and prevent hidden coercion.
- E.g. Mandating Explainable AI audits would allow regulators to detect discriminatory or unsafe incentive structures.

- **Inflation-Indexed Earnings:** Stable livelihoods require pay structures that automatically adjust to rising fuel and maintenance costs.
- E.g. Linking per-kilometre rates to CPI or fuel indices protects riders from real-income erosion.

- **Judicial Oversight:** Dedicated grievance forums are needed to address arbitrary de-platforming and wage disputes swiftly.
- E.g. Karnataka's proposed Grievance Redressal Officer model offers a template for speedy, worker-centric justice.

- **Universal Social Security:** Safety nets must be automatic and universal rather than optional or privately negotiated.

- E.g. Shifting from opt-in insurance to state-mandated welfare boards ensures coverage irrespective of platform policies.

- The Social Security Code represents a paradigm shift by moving the gig workforce from an informal and vulnerable status towards legal recognition and protection. However, effective outcomes will depend on robust enforcement, regulation of unsafe delivery models, and greater transparency and accountability in platform algorithms. Ensuring fair wages, occupational safety, and comprehensive social security is crucial for building a resilient, inclusive, and formalised gig economy.

Conclusion

- Decision of Blinkit, Zepto, Zomato, and Swiggy to drop the "10-minute delivery" model underscore the need to balance consumer convenience with worker safety and dignity. It signals a broader shift within India's quick-commerce sector towards responsible labour practices and stronger regulatory oversight, an essential step for sustaining a future ready digital economy.

Transforming a Waste-Ridden Urban India

- Urban waste management has gained renewed global focus after COP30 (Belém, 2025) placed waste and circularity at the core of climate action, committing funds to cut methane emissions through initiatives like **No Organic Waste (NOW).**

Transforming a Waste-Ridden Urban India:

- It refers to India's shift from a **linear "collect–dump" model** of urban waste management to a circular economy framework, where waste is minimised, segregated, recycled, and reused as a resource to reduce pollution, emissions, and health risks in rapidly expanding cities.

Trends / data in urban waste:

- **Rising waste generation:** Urban India is projected to generate 165 million tonnes of municipal solid waste annually by 2030, reflecting rapid urbanisation.
- **Future burden:** By 2050, waste generation could rise to 436 million tonnes as the urban population approaches 814 million.
- **Climate impact:** Urban waste is estimated to emit over 41 million tonnes of greenhouse gases, mainly methane from organic waste.

- **Construction debris:** Cities generate about 12 million tonnes of construction and demolition (C&D) waste annually, a major contributor to urban pollution.

Organic Waste: An Opportunity

- **Composting at scale:** Large volumes of urban wet waste can be converted into nutrient-rich manure, reducing landfill pressure and closing the soil–nutrient loop.
- E.g. Under the **Market Development Assistance (MDA) scheme, 2025**, ₹1,500/tonne subsidy enabled cities like Varanasi to supply **Fermented Organic Manure (FOM)** to regional farmers.

- **Bio-methanation & CBG:** Anaerobic digestion of organic waste produces Compressed Biogas (CBG), linking waste management with clean energy and mobility.
- E.g. By 2025, **GOBARdhan** facilitated ~750 CBG projects, with Indore's 550 TPD plant fueling city buses and setting a national benchmark.

- **Methane reduction:** Diverting wet waste from dumpsites prevents anaerobic decay, significantly cutting methane—a potent short-lived climate pollutant.
- E.g. Alappuzha's decentralised composting, cited in the India Zero Waste Alliance (2025) report, showed measurable GHG reductions aligned with India's NDCs.

- **Decentralised solutions:** On-site waste processing eliminates transport costs, emissions, and secondary pollution from centralised dumping.
- E.g. Under SBM-U 2.0's Swachh Campus (2025) norms, hotels in Srinagar and Pattan achieved 100% in-situ food waste processing.

- **Livelihood generation:** Circular waste systems formalise informal labour, creating dignified green jobs and local economic value.
- E.g. The **SafaiMitra Suraksha Programme** (2025) integrated SHGs like Green Roing (Arunachal Pradesh) into composting and MRF operations.

Role of Swachh Bharat Mission (Urban) 2.0:

- **Garbage Free Cities (GFC) framework:** A star-rating system institutionalises scientific waste processing and zero-dumping as measurable governance outcomes.
- E.g. In Swachh Survekshan 2025, Navi Mumbai and Surat achieved 7-Star GFC status through 100% processing and legacy waste clearance.

- **Dump-site remediation**: Bio-mining reclaims land by segregating legacy waste into soil enricher, RDF, and recyclables.
- E.g. MCD (Aug 2025) reported 25,000 MT/day bio-mining across Ghazipur, Bhalswa, and Okhla landfills.

- **Source segregation push:** Mandatory three-bin segregation improves recycling purity and processing efficiency across the waste value chain.
- E.g. Mizoram's Adopt-a-Dustbin Scheme (2025) ensured near-100% segregation in Aizawl's commercial hubs through community monitoring.

- **Integration with climate goals:** SBM-U embeds circular economy principles to reduce urban emissions, especially methane.
- E.g. MoEFCC's 2025 Conclave linked SBM-U grants with reduction of Short-Lived Climate Pollutants (SLCPs).

- **Behavioural change:** Jan Andolan strategies make waste segregation a social norm through peer learning and nudges.
- E.g. Swachh Shehar Jodi (2025) paired cities like Ambikapur with laggards using gamified waste-tracking apps.

Challenges Associated

- **Poor segregation at source:** Mixed waste contaminates recyclables, damages machinery, and undermines waste-to-energy viability.
- E.g. Supreme Court (Feb 2025) flagged NCR cities like Gurgaon for <20% segregation, leading to WtE plant failures.

- **Plastic waste complexity:** Multi-layered plastics lack viable recycling markets, causing leakage despite EPR norms.
- E.g. CPCB EPR Portal (2025) showed shortages of food-grade recycled resin despite mandatory recycled-content rules.

- **C&D waste enforcement gaps:** Illegal dumping of debris clogs drains and worsens PM10 pollution in cities.

- E.g. CAG Audit (2025) found over 70% of ULBs lacked designated C&D waste collection points.

- **Municipal capacity constraints:** ULBs face shortages of funds, skilled staff, and technical oversight to run processing plants.
- E.g. NITI Aayog (2025) noted Tier-3 cities in UP lack sanitary inspectors to operate bio-methanation units.

- **Market & quality issues:** Poor compost quality reduces farmer trust and commercial uptake.
- E.g. India Zero Waste Alliance (2025) reported high rejection of city compost due to weak BIS enforcement and contamination.

Way Ahead:

- **Strengthen circular economy laws:** Effective implementation of Environment (C&D) Waste Management Rules, 2025 from April 2026 can fix accountability gaps.
- **Scale EPR beyond plastics:** Extending EPR to textiles, e-waste fractions, and packaging can shift the burden to producers.
- **Urban wastewater reuse:** Cities must accelerate reuse under AMRUT, as seen in treated wastewater supply to industries in Nagpur.
- **City-to-city knowledge sharing:** India's Cities Coalition for Circularity (C-3) can diffuse best practices across Asia-Pacific urban centres.
- **Citizen incentives**: Linking segregation and recycling to user-fee rebates or carbon credits can convert citizens into stakeholders.

Conclusion:

- India's urban waste crisis is no longer an aesthetic issue but a climate, health, and economic challenge. By embedding circularity, decentralised solutions, and citizen participation into urban governance, waste can become a resource. A decisive shift today will determine whether India's cities remain swamps of waste or engines of sustainable growth.

Surge in Silver Prices

- Silver prices **rose over 160%** in 2025, despite sharp interim corrections; December alone saw >30% gains amid global trade tensions.Over the full year, silver prices surged by more than 160%,

significantly outperforming gold and most other asset classes

- While global trade tensions and **US Federal Reserve rate cuts** supported precious metals broadly, silver's rally was driven by distinct industrial, supply-side, and speculative factors, making it fundamentally different from gold's traditional safe-haven rise.

Background: Silver and the Global Commodities Landscape

- Silver (Ag) is a **transition metal** with atomic **number 47**, known for its highest electrical and thermal conductivity, which makes it widely used in electronics, solar cells, and jewellery.
- Historically, silver has occupied a **hybrid position** in the global economy**—part precious metal, part industrial input.** Unlike gold, which is primarily held as a store of value**, silver's demand is deeply embedded in manufacturing, energy transition technologies, electronics, and healthcare.**
- Over the past decade, structural changes such as the rise of renewable energy, electric vehicles, and advanced electronics have steadily increased silver's industrial relevance. By 2025, these long-term trends converged with geopolitical disruptions and financial speculation, triggering an extraordinary price rally.

Broader Commodity Trend

- **Copper Rally:** Copper crossed $12,000 per tonne in 2025 due to tariff fears, supply shortages, and energy transition demand, mirroring silver's price dynamics.
- **Real Asset Shift:** Investors increasingly moved towards hard assets like metals and bitcoin amid geopolitical risks, fiscal stress, and weakening confidence in US financial assets.

Key Drivers of Silver Price Surge

- **Industrial Demand:** Silver is critical for solar panels, batteries, EVs and electronics; the clean energy push sharply raised demand. E.g., *solar PV alone uses ~15–20% of global silver demand*.
- **Critical Mineral Tag:** The US added silver to its Critical Minerals List, linking it to Section 232 tariff reviews and government financing priorities.
- **Geopolitical Risks:** China's rare metals export restrictions (2026–27) raised fears of supply disruption.
- **Stockpiling Effect:** US inventories hit 531 million ounces (Sept 2025), up 74% YoY (CME), draining availability in global hubs like London.
- **ETF-Led Demand:** Indian silver ETF inflows touched ₹5,342 crore in Sept 2025, far exceeding gold ETF inflows (₹1,233 crore), forcing fund houses to buy physical silver and tightening supply.

- **FOMO Dynamics:** Acute physical shortages pushed domestic silver prices 5–12% above global benchmarks, triggering fear of missing out among retail investors and reinforcing speculative buying cycles.
- **Dollar Weakness:** The US dollar is set to fall ~10% in 2025, encouraging the 'debasement trade' into silver, gold, copper, and bitcoin as hedges against currency depreciation.

COUNTRIES	PRODUCTION (in metric tonnes)	COUNTRIES	PRODUCTION (in metric tonnes)
Peru	4,000	Bolivia	1,360
Mexico	3,500	United States	1,280
China	3,000	Poland	1,200
Australia	1,700	Canada	700
Chile	1,500	Other countries	2,600
Russia	1,400		

SOURCE: USGS: Mineral Commodity Summary 2017

Why Silver Outperformed Gold?

- **Dual Demand Structure:** Silver derives value from industrial consumption, investment demand, and jewellery usage, whereas gold is dominated by investment and central bank demand.
- **Critical Role in Future Technologies: Silver is indispensable in solar photovoltaic cells, EV batteries, semiconductors,** medical equipment, and electronics, sectors that expanded rapidly in 2025.
- **Higher Price Elasticity: Because silver markets are smaller** and less liquid than gold, marginal changes in demand or supply produce outsized price movements.
- **Broader Buyer Base: Industrial firms, ETF investors,** retail buyers, and governments simultaneously competed for limited supplies, amplifying price volatility.

Distribution of Silver in World

- **Major Producers:** ***Mexico is the largest producer,*** followed by China, Peru, Chile, and Australia; most silver is mined as a by-product of copper, lead, and zinc.
- **Resource Concentration:** Silver reserves are concentrated in Latin America and Asia-Pacific, closely linked to major base-metal belts like the Andean copper belt.

Distribution of Silver in India

- **Limited Reserves:** India has no major primary silver mines; domestic availability depends largely on by-product recovery from lead–zinc mining.

Key Mining Region:

- **Zawar mines in Udaipur** district of Rajasthan is the major producer of silver [smelting of galena ore in Hindustan Zinc Smelter].
- The Tundoo Lead Smelter in Dhanbad district of Jharkhand is another major silver producer.
- Some silver is produced by **Kolar Gold Fields and Hutti gold mines.**
- The Hindustan Copper Ltd. at Maubhandar smelter in Singhbhum district of Jhakhand obtains silver from copper slimes.
- Silver is also produced by Vizag Zinc smelter in Andhra Pradesh from the lead concentrates.
- **Import Dependence:** India meets a large share of silver demand through imports, primarily from Mexico (largest supplier) and Peru.

Vitamin B12 Deficiency in India

- Vitamin B12 deficiency is a widespread, endemic public health problem in India.

Vitamin B12

- It is a **water-soluble vitamin** that contains cobalt and is therefore scientifically called **cobalamin.**
- The body can store vitamin B12 for 2 to 5 years, and it can get rid of any excess or unwanted vitamin B12 in the urine.
- The body **stores vitamin B12 in the liver.**
- It is a vitamin the body uses to make and support healthy nerve cells.
- It's also used to make healthy red blood cells and the genetic material inside cells called DNA.

- Your body cannot produce B12 on its own, so it must be obtained through foods high in vitamin B12 or supplements.
- It is naturally found in animal foods such as fish, meat, poultry, eggs, milk, and milk products.
- It is not present in plant foods unless fortified.

- **Essential Role:** It acts as a cofactor in DNA synthesis, the formation of Red Blood Cells (erythropoiesis), and the maintenance of the **myelin sheath** (the protective covering of nerves).
- **Metabolic Function:** It converts homocysteine into methionine, regulating amino-acid metabolism.
- **Absorption:** Intestinal absorption requires binding to intrinsic factor (IF), a protein secreted by the parietal cells in the stomach lining.
- **Sources:** It is synthesised by some bacteria and occurs naturally only in animal-derived foods (meat, fish, eggs, dairy); it is not naturally present in plant foods.

Vitamin B12 Deficiency

- **Global Prevalence:** In developed countries, it mainly affects the elderly, with a prevalence of 6%.
- **India's Burden:** In India, deficiency affects nearly 47% to 53% of the population across all age groups.
- **Underdiagnosis:** Non-specific symptoms such as fatigue, numbness, or poor concentration, along with prolonged liver storage, delay detection until advanced deficiency.

Major Causes of Deficiency in India

- **Dietary Habits:** The most common cause in India is a vegetarian or vegan diet lacking fortification.
- **Cooking Patterns:** Low milk intake and prolonged boiling reduce the availability of dietary vitamin B12.
- **Drug Effects:** Long-term use of diabetic medications (metformin) and antacids suppresses stomach acid, impairing vitamin B12 absorption.

THE B VITAMINS

VITAMIN	NAME	FOOD SOURCES
B1	THIAMIN	Soy burgers, cereals, acorn squash, lean pork chop
B2	RIBOFLAVIN	Fortified soy beverage, 2% plain yogurt, oysters, beef liver
B3	NIACIN	Peanut Butter, sunflower seeds, portobello mushrooms, tuna
B5	PANTHOTENIC ACID	Potatoes, oats, tomatoes, broccoli, whole
B6	PYRIDOXINE	Potatoes, legumes, noncitrus fruits, fortified cereals
B7	BIOTIN	Potatoes, legumes, fortified soy products, fortified cereals
B9	FOLATE	Fortified grains, leafy green vegetables, legumes, seeds
B12	COBALAMIN	Foods of animal origin (meat, fish, poultry, milk, cheese, eggs), fortified meat analogs, cereals

Major Health Effects

- **Megaloblastic Anaemia:** Impaired DNA synthesis causes RBCs to become abnormally large (megaloblasts) and immature, leading to chronic fatigue.
- **Demyelination:** Inadequate formation of the myelin sheath leads to subacute combined degeneration of the spinal cord, causing neuropathy and gait imbalance.
- **Psychiatric Disorders:** Severe deficiency causes depression, paranoia, and memory loss in the elderly; it can lead to dementia and cognitive decline.
- **Cardiovascular Risk:** Low B12 raises homocysteine, damaging artery linings and increasing early heart attack and stroke risk.
- **Maternal Complications:** Deficiency during pregnancy increases the risk of Neural Tube Defects

(NTDs), causing abortions and low birth weight.

- **Child Development:** Childhood deficiency impairs brain development, attention, and muscle strength.

Key Government Initiatives

- **Food Fortification:** The government mandates supplying fortified rice with iron, folic acid, and B12 through PDS, PM-POSHAN, and ICDS schemes.
- **Anaemia Mukt Bharat:** A "6x6x6" strategy that focuses on six age groups; while traditionally iron-focused, it now emphasises B12 and Folate to tackle "nutritional anaemia" holistically.
- **Mission Poshan 2.0:** A flagship programme aimed at improving maternal and child nutrition through community engagement and behaviour change.
- **FSSAI Standards:** The +F logo on food products helps consumers identify staples like milk or oil fortified with B12 and other micronutrients.

Biomaterials - Sustainable path for Circular Economy

- **Biomaterials,** derived from renewable biomass, are crucial for combating climate change by replacing fossil-fuel-based materials, significantly **cutting CO2 emissions,** reducing waste, and promoting **circular economies** through biodegradable or recyclable alternatives in construction, packaging, and textiles, though careful life cycle assessment (LCA) is needed to ensure sustainable sourcing and manage potential impacts like **microplastic pollution from bioplastics.**
- With the global shift toward low-carbon, circular production systems, biomaterials are emerging as a critical alternative to fossil-based plastics, textiles, and industrial materials.

What are Biomaterials?

- Biomaterials are substances derived wholly or partly from **biological sources** (plants, fungi, bacteria) or engineered using **biological processes (fermentation)** to replace or interact with conventional, petroleum-based materials.
- They are designed to be either chemically identical to existing materials or entirely novel with unique biodegradable properties.

Types of Biomaterials

1. Drop-in Biomaterials: Chemically identical to petroleum-based materials and compatible with

existing infrastructure (e.g., bio-PET).

- These are the plug-and-play versions.
- Their biggest advantage is that they can be used in existing manufacturing lines without any machinery upgrades.

2. Drop-out Biomaterials: Chemically different materials requiring new processing or disposal systems (e.g., **PLA – polylactic acid).**

- While they replace traditional plastics, they require separate end-of-life systems, like industrial composting facilities, because they don't mix with standard plastic recycling streams.

3. Novel Biomaterials: These are the super-materials of the future.

- They possess properties nature didn't intend for industrial use, such as self-healing composites for construction or 3D-printed bioactive scaffolds that help human bones regrow. Materials with new functionalities like self-healing, bio-activity, or tissue regeneration (e.g., biomedical scaffolds).

India's Current Status of Biomaterials

- **Market Size:** India's bioplastics market is valued at ~USD 500 million (2024) & is expected to boom.
- **Major Investments:** Balrampur Chini Mills' large PLA plant in Uttar Pradesh marks one of India's biggest biomaterials investments.
- **Startup Innovation:** Firms like Phool.co (temple waste biomaterials) and Praj Industries (bioplastics demo plants) are scaling innovation.

Significance of Biomaterials for India

- **Environmental Sustainability:** Plastics contribute ~3.4% of global GHG emissions; India generates ~4.1 million tonnes of plastic waste annually, making bio-alternatives crucial.
- **Industrial Competitiveness:** The Global bioplastics market is projected to reach USD 39–45 billion by 2030, requiring India to align with low-carbon trade norms.
- **Farmer Income Diversification:** Biomaterials can valorise over 350 million tonnes of Agri-residue annually, reducing stubble burning and boosting rural incomes.
- **Import Substitution:** India imports ~85% of its petrochemical feedstocks, exposing industry to shocks.

Key Challenges for India

- **Feedstock Competition:** Sugarcane and maize already account for ~70% of India's freshwater use, raising concerns about the food–fuel–material trade-off.
- **Environmental Stress:** Agriculture accounts for ~80% of freshwater withdrawals, increasing the risk of soil degradation if biomass demand rises unchecked.
- **Waste-Management Gaps:** Only ~30% of India's plastic waste is effectively recycled, undermining the end-of-life benefits of compostable biomaterials.
- **Technology Dependence:** Over 60% of advanced biopolymer processing and fermentation technologies are sourced from abroad, raising strategic vulnerability in scaling India's biomaterials industry.

Way Forward

- **Manufacturing Scale-Up:** Rapidly expand domestic fermentation and polymerisation capacity to reduce import dependence; E.g., UAE's Emirates Biotech PLA plant shows how scale lowers costs.
- **Procurement Push:** Leverage government purchasing power to create assured demand for biomaterials; E.g., the U.S. USDA BioPreferred Programme mandates bio-based products in federal procurement.
- **Regulatory Clarity:** Establish uniform definitions, labelling standards and clear end-of-life pathways to build industry confidence; E.g., the EU's Packaging & Packaging Waste Regulation.

500% tariffs ahead for India?

- The United States is considering a bipartisan bill allowing tariffs up to 500% on countries, including India, that continue purchasing Russian oil, after US President Donald Trump signalled support for the proposed Sanctioning Russia Act of 2025.
- The Sanctioning Russia Act of 2025, backed by US Senators led by Lindsey Graham, seeks to empower the US President to impose punitive tariffs (up to 500%) on countries buying Russian oil, to choke revenues funding Russia's war in Ukraine.

Background of the issue:

- After the Russia–Ukraine war (2022), India sharply increased imports of discounted Russian crude to protect energy security.
- The US and G7 imposed a $60/barrel price cap to limit Russian revenues without disrupting global oil markets.

- Despite reducing purchases marginally, India remains one of Russia's largest oil buyers, leading to earlier US penalty tariffs (25%, later 50%) on Indian exports.
- The proposed Bill escalates pressure by linking energy trade with secondary sanctions.

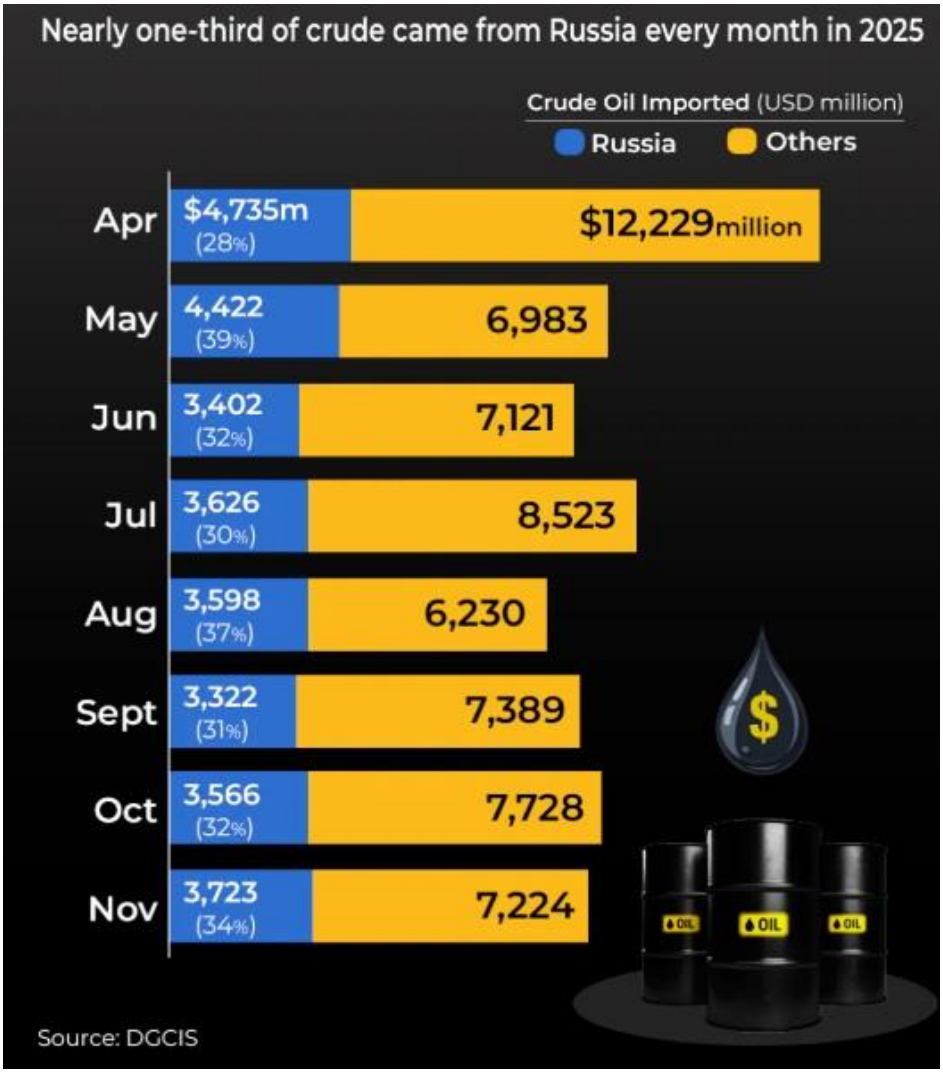
Key Features Sanctioning Russia Act of 2025:

- **Secondary sanctions framework:** Empowers the US President to impose secondary tariffs and sanctions on countries that continue purchasing Russian oil, gas, uranium, and petroleum products, even if they are not directly trading with the US.
- **Punitive tariff provision:** Mandates tariffs of up to 500% on goods and services imported into the US from countries that knowingly engage in trade involving Russian-origin energy products.
- **Financial isolation of Russia:** Directs the US Treasury to impose property-blocking sanctions on Russian financial institutions and foreign entities transacting with them.
- **Presidential discretion:** Grants the President authority to determine tariff levels and targets, giving significant leverage in diplomatic negotiations.
- **National interest waiver**: Allows the President to waive the 500% tariffs for up to 180 days for specific countries, goods, or services if deemed in the US national interest.
- **Strategic objective:** Aims to cripple Russia's war-financing capacity and pressure third countries to reduce reliance on discounted Russian energy.

Implications of a 500% U.S. tariff on India

- **Trade and export shock:** A 500% tariff would operate as a de facto trade embargo, making Indian goods commercially unviable in the U.S. market. E.g. GTRI estimates exports worth ~$120 billion could be hit, with labour-intensive sectors like textiles, gems and jewellery—already under 50% tariffs since Aug 2025—facing closures and job losses.

- **Energy security dilemma:** Cheap Russian crude has helped India manage inflation and fiscal stress, making sudden disengagement economically costly. E.g. Early-2026 assessments suggest shifting away from Russian oil could raise India's import bill by $9–11 billion, prompting refiners like Reliance to pause Russian cargoes to avoid sanctions exposure.



- **Geopolitical strain:** The tariff threat strains the India–US Comprehensive Global Strategic

Partnership and raises concerns of selective enforcement. E.g. Indian officials note the contradiction that China, the largest buyer of Russian energy, has largely avoided equivalent penalties, undermining trust in a rules-based order.

- **Global market distortion:** Extreme secondary sanctions risk fragmenting energy markets and financial systems, accelerating economic bloc formation. E.g. Legal scrutiny in the US over using IEEPA for such tariffs could push countries like India and Brazil toward non-dollar payment systems, accelerating de-dollarisation.
- **Pressure on strategic autonomy:** India's ability to balance ties with Washington and Moscow faces its sternest test since the Cold War. E.g. The US exit from the International Solar Alliance (Jan 2026) alongside tariff threats signals a shift toward transactional diplomacy that constrains India's policy independence.

Way ahead for India

- **Accelerate energy diversification:** Reducing exposure to Russian crude lowers vulnerability to sanctions-driven coercion. E.g. India is expanding sourcing from Guyana, Brazil and West Asia to bring Russian oil dependence below a "sanction-safe" threshold.
- **Diplomatic price-cap renegotiation:** India must frame its oil imports as stabilising, not distorting, global energy markets. E.g. High-level talks led by EAM S. Jaishankar can highlight how Indian buying prevents oil spikes to $120/barrel, which would hurt US consumers too.
- **Hedge via new FTAs:** Diversifying export markets can cushion MSMEs from U.S. tariff shocks. E.g. Fast-tracking UK and EU FTAs can provide alternate demand channels for tariff-hit sectors like apparel and engineering goods.
- **Legal and multilateral recourse:** Unilateral tariffs of this scale challenge core trade law principles. E.g. A coordinated challenge at the WTO or G20 could question 500% tariffs as violations of MFN obligations.
- **Structural energy transition:** Reducing fossil fuel dependence weakens external economic leverage over India. E.g. Scaling up the National Green Hydrogen Mission and EV adoption can permanently dilute crude-oil-linked geopolitical pressure.

Conclusion:

- The proposed 500% tariff threat goes beyond trade, challenging India's energy security and strategic autonomy. While Russian oil remains economically attractive, prolonged confrontation with the US carries high costs. A calibrated mix of diplomacy, diversification, and energy transition will be crucial to safeguard India's economic and geopolitical interests.

GSDP as Criterion for Tax Devolution

- Central tax devolution to States is guided by Finance Commission recommendations; while 15th FC norms are in force, 16th FC recommendations are awaited. **GSDP (Gross State Domestic Product)** is crucial for the **16th Finance Commission (FC)** as states, especially high-performing ones, demand it be a major factor in central tax devolution, arguing it better reflects tax-raising capacity than population, while weaker states seek higher shares and borrowing limits for development, all in a context of increased central cesses and GST-related revenue issues, making the 16th FC''s recommendations vital for balancing fiscal federalism.
- Rising Centre–State tensions over tax devolution have revived debate on using GSDP as a criterion.

What is Tax Devolution?

- Tax devolution refers to the distribution of **tax revenues between the central government and the state governments.** It is a constitutional mechanism established to allocate the proceeds of certain taxes among the Union and the states in a fair and equitable manner.
- **Article 280(3)(a)** of the Constitution of India mandates that the Finance Commission (FC) has the responsibility to make recommendations regarding the division of the net proceeds of taxes between the Union and the states.

15th Finance Commission

- The Finance Commission is a **constitutional body** that determines the method and formula for distributing the tax proceeds between the Centre and states, and among the states as per the constitutional arrangement and present requirements.
- Under **Article 280** of the Constitution, the President of India is required to constitute a Finance Commission at an interval of five years or earlier.
- The 15th Finance Commission was constituted by the President of India in November 2017, under the chairmanship of **NK Singh.**
- Its recommendations will cover a period of five years from the year **2021-22 to 2025-26.**

What GSDP Means for the 16th FC:

- **The 16th Finance Commission (16th FC) of India, chaired by Dr. Arvind Panagariya, was constituted in late 2023 and submitted its report in November 2025, recommending fiscal**

arrangements for 2026-2031.

- **Tax Base Indicator:** GSDP shows a state''s economic size and output, indicating its potential to generate taxes, making it a strong proxy for tax accrual.
- **State Demands:** Developed states like Tamil Nadu and Maharashtra want more weightage for GSDP (contribution to national GDP) in the devolution formula, reducing reliance on population/income distance.
- **High Performers'' Grievance: States** contributing more to national GDP feel shortchanged as they receive less from central taxes, a trend highlighted by the 15th FC''s formula.

Key Issues & Demands for the 16th FC (Chaired by Arvind Panagariya):

- **Increased Tax Devolution:** States push for a higher share (e.g., 50%) of central taxes from the **current 41%.**
- **Relaxed Borrowing Limits:** Climate-affected and developing states seek extra borrowing space (beyond 3% of GSDP) for development.
- **Special Grants:** Hilly, border, and disaster-prone states request more grants for infrastructure and climate resilience.
- **Addressing Fiscal Imbalances:** Concerns over GST impact, rising cesses (not shared with states), and Centrally Sponsored Schemes (CSS) affecting state autonomy.

The 16th FC''s Role:

- It recommends the principles for dividing central taxes (vertical devolution) and allocating funds among states (horizontal devolution) for the period starting April 1, 2026.
- Its report, submitted in November 2025, addresses these complex issues, with Parliament yet to approve its recommendations.

Gross State Domestic Product (GSDP)

- **Definition:** GSDP measures the total economic output produced within a State, capturing the scale and structure of its economy.
- **Tax Base Indicator:** It reflects income generation and production activity, which form the underlying base for both direct and indirect taxes.
- **Uniform Effort Assumption:** Since tax effort does not vary widely across States, GSDP reasonably approximates tax-accrual capacity at the State level.

Historical Trajectory of Centre-State Financial Relations (As per former RBI Governor)

- **Docile Federalism (1947–early 1970s):** Strong central control, facilitated by one-party dominance, with States heavily dependent on central transfers.
- **Cooperative Federalism (1970s–mid-1990s):** Greater State participation in development planning and fiscal decision-making.
- **Combative Federalism (mid-1990s–present):** Frequent Centre–State disputes over resources, taxation powers, and fiscal autonomy, especially in the post-GST era.

Why Tax Devolution is Contested?

- **GST Centralisation:** After GST, States surrendered key taxation powers; GST compensation ended in June 2022, while many States still report revenue shortfalls relative to pre-GST growth trends.
- **Cess Expansion:** Cesses and surcharges form ~22–25% of the Centre's gross tax revenue, but are not shareable with States, shrinking the divisible pool (Union Budget data).
- **CSS Dominance:** Centrally Sponsored Schemes account for **~40% of Central transfers**, limiting States' flexibility to allocate funds based on local priorities (RBI State Finances).
- **Equity Skew:** Under the 15th FC, **weight for income distance (45%) and population (15%) reduced** the relative shares of fiscally high-performing States.
- **Declining Autonomy**: States' own tax revenue averages ~7% of GSDP, while expenditure responsibilities continue to rise, widening vertical fiscal imbalance.

Tax Contribution vs Tax Collection

- **PAN Bias:** Direct taxes are recorded where PAN/registered offices are located, not where production occurs; E.g., factories in Tamil Nadu generate output, but taxes are booked in headquarters States.
- **Multi-State Firms:** Large firms operate across States, but tax is booked centrally, distorting estimates.
- **Labour Mobility:** Migrant labour generates income in host States, but tax attribution remains unclear.

Why GSDP Is a Better Proxy for Tax Devolution?

- **Direct Taxes Link:** The correlation between GSDP and direct tax collections is 0.75 (2023–24), showing that States with larger economies contribute more to direct taxes.

- **GST Alignment:** GSDP has a 0.91 correlation with GST collections, reflecting GST's destination-based nature and close link with economic activity.
- **Efficiency–Equity Balance:** GSDP correlates 0.81 with tax collections and 0.58 with devolution shares, balancing efficiency in contribution recognition with redistribution goals.
- **Lower Distortion:** Unlike PAN-based tax attribution, GSDP reduces distortions from headquarters-based booking and better reflects real production across States.

Winners and Losers Under GSDP-Based Formula

- **Major Gainers**: Maharashtra, Karnataka, Tamil Nadu and Gujarat would gain as their higher GSDP shares better reflect real economic output and tax contribution.
- **Relative Losers:** Uttar Pradesh, Bihar and Madhya Pradesh would see reduced shares since current transfers exceed their GSDP-based entitlement, though redistribution would continue.

Way Forward

- **Addressing the Divisible Pool:** A constitutional amendment or a binding commitment to cap cesses at 10% of GTR would ensure states get their fair share of the vertical pie.
- **Specific Purpose Grants:** Rather than altering the devolution formula, Centre can use **Article 275 grants** to support urban infrastructure in major industrial hubs. This supports the "engines of growth" without distorting the equity-based devolution formula.
- **SDG-Linked Devolution:** Link incentives to outcomes in Health, Education, and Climate Action, ensuring that funds result in tangible development in lagging states.

Supreme court's green governance

- Recent articles have highlighted concerns over the Supreme Court's evolving role in environmental governance, pointing to frequent policy reversals and uncertainty arising from judicially driven green regulations, especially visible in 2025 environmental rulings.
- The Supreme Court's proactive role in environmental protection, where it goes beyond adjudicating legality and issues continuous, policy-shaping directions—often through continuing mandamus—to compensate for regulatory failure.

Major Supreme Court judgments on environment in 2025:

1. **Vanashakti v. Union of India (2025)**

- Initially held ex post facto environmental clearances illegal as violative of the precautionary principle.
- Later reversed in review, allowing such clearances citing disruption to ongoing projects, raising concerns of doctrinal inconsistency.

2. **Aravalli Hills Mining Matter (2025)**

- Court adopted a restrictive definition of **Aravallis (excluding areas below 100 metres),** opening large tracts to mining.
- Order later stayed by a coordinate bench, and an expert committee constituted.

3. **Kancha Gachibowli Forest Case, Hyderabad (2025)**

- Suo motu cognisance of mass tree felling for IT infrastructure.
- Court stayed further deforestation citing biodiversity loss and public trust doctrine.

4. **K. Ranjitsinh v. Union of India (Great Indian Bustard case)**

- Continued strong conservation stance: undergrounding power lines, habitat restoration, predator-proof fencing.
- Reaffirmed link between environmental protection and inter-generational equity.

5. **Delhi-NCR Air Pollution cases (2025)**

- Court repeatedly directed Commission for Air Quality Management (CAQM) on long-term planning, data transparency, and enforcement.
- Highlighted regulatory delay and lack of coordinated airshed-level governance.

6. **Stray Dog Management Case (2025)**

- Initial order for relocation of stray dogs later modified to sterilisation-and-release policy.
- Reflected judicial struggle to balance animal welfare with public safety.

Successes of the Supreme Court in Environmental Conservation

- **Strengthened environmental jurisprudence:** The Court has constitutionalised environmental protection by embedding global environmental principles into Article 21, moving beyond statutory interpretation to rights-based climate and ecological justice.
- **Checked executive inaction:** The Court has acted as a constitutional watchdog, compelling lethargic regulators to fulfil statutory duties when governance paralysis threatens public health.

- **Prevented irreversible ecological damage:** Applying the precautionary principle, the Court has halted environmentally risky activities until scientific certainty and safeguards are ensured.
- **Expanded the public trust doctrine:** The Court has reinforced that natural resources are held by the State in trusteeship, not ownership, for present and future generations. E.g. Vellore District **Environment Monitoring Committee v. District Collector (2025)** imposed restoration liability on polluting tanneries under Polluter Pays.
- **Mainstreamed environmental rights under Article 21:** Environmental protection has been linked to dignity, health, and equality, making it a non-derogable constitutional obligation. **E.g. Union of India v. Rajiv Suri (2024–25)** mandated rapid constitution of SEIAAs to prevent bypassing environmental scrutiny.

Issues and Challenges Associated

- **Judicial overreach into regulation:** The Court sometimes prescribes technical or operational solutions, blurring the separation between adjudication and administration. E.g. In Delhi air pollution cases, directions on smog towers and traffic management intruded into CAQM's technical domain.
- **Policy uncertainty due to reversals:** Frequent dilution or reversal of landmark rulings weakens regulatory predictability and long-term environmental planning. E.g. Vanashakti v. Union of India (2025) reversed the ban on post-facto clearances within months, unsettling environmental jurisprudence.
- **Expertise paradox:** Judicial reliance on expert committees, followed by rejection or reconstitution, undermines scientific consistency. E.g. The fluctuating judicial definition of "Aravalli Hills" led to repeated committee reviews before a final standard emerged.
- **Shrinking space for public challenge:** Direct Supreme Court intervention can sideline statutory forums, narrowing participatory environmental justice. E.g. Mining proponents bypassed NGT proceedings in 2025 by approaching the Supreme Court directly, muting local objections.
- **Continuing mandamus fatigue:** Long-running cases risk judicial micromanagement, replacing durable policy reform with interim governance. E.g. The 1-km ESZ mandate (2022) was modified after protests, reflecting instability inherent in prolonged mandamus.

Way Ahead

- **Re-anchor to legality:** Judicial review should prioritise due process, statutory compliance, and reasoning, not policy design.
- **Discipline, don't replace:** The Court should enforce accountability rather than substitute

governance.

- E.g. Holding officials liable for failure to utilise CAMPA funds would strengthen execution without micromanagement.
- **Clear thresholds for intervention:** A principled standard can prevent arbitrary dilution of environmental safeguards.
- E.g. A Doctrine of Non-Regression would have avoided reversal on post-facto environmental clearances.
- **Strengthen institutions:** Robust regulators reduce dependence on judicial governance.
- E.g. Filling vacancies in SPCBs, CAQM, and NGT would decentralise environmental justice and restore institutional balance.

Conclusion:

The Supreme Court remains a crucial guardian of India's environmental rights where governance fails. However, frequent doctrinal shifts and regulatory substitution risk eroding certainty and institutional balance. A principle-based, regulator-disciplining—not regulator-replacing—approach is essential for sustainable and democratic green governance.

Concerns over impending delimitation

- With the 2026 delimitation on the horizon, concerns over its impact on federal balance have intensified. Union Home Minister recently assured that **no southern state would lose Lok Sabha seats**, addressing fears of reduced political influence. However, states like Tamil Nadu and Kerala remain apprehensive about the reallocation favouring high-population states like Uttar Pradesh and Bihar.

Delimitation Process in India

- Delimitation refers to the process of **fixing boundaries of territorial constituencies** in a country to ensure proportionate representation based on population changes. In India, this exercise is carried out by an independent and high-powered body known as the **Delimitation Commission** or Boundary Commission.

Constitutional Basis of Delimitation in India

- **Article 82:** Mandates the Parliament to enact a Delimitation Act after every Census and constitute

a Delimitation Commission.

- **Article 170:** Governs the division of territorial constituencies for State Legislative Assemblies after each Census.

Composition of the Delimitation Commission

- **Appointment:** The President of India appoints the Delimitation Commission in consultation with the Election Commission of India (ECI).
- **Members:** A retired Supreme Court judge (Chairperson), the Chief Election Commissioner, and the respective State Election Commissioners.
- **Independence:** Functions without executive influence.
- **Authority:** Its decisions are final, cannot be challenged in court, and are beyond modification by Parliament or State Assemblies.

Historical Timeline of Delimitation Exercises in India

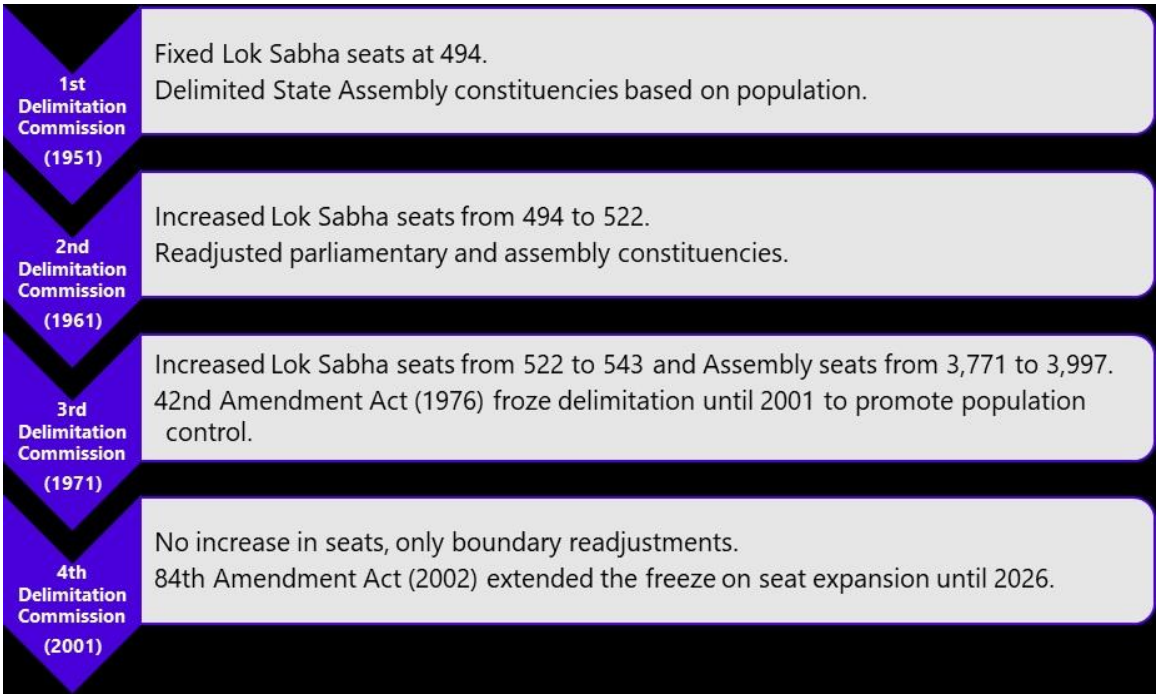
- Delimitation Commissions were established under the **Delimitation Acts of 1952, 1962, 1972, & 2002.**
- Notably, no Delimitation Commission was constituted after the 1981 and 1991 Censuses due to political and demographic considerations.
- **Reason for Freezing Delimitation in 1976:** To encourage population control, preserve federal balance, and maintain political stability by preventing regional tensions over seat reallocation.

- The 1976 freeze on the delimitation of parliamentary and assembly constituencies, introduced via the **42nd Amendment Act** during the Emergency, was implemented to prevent states that successfully implemented family planning programs from losing political representation. By freezing seat allocations **based on the 1971 Census until 2001** (later extended to 2026), it encouraged population control measures and stabilized federal dynamics.
- **The 84th Constitutional Amendment Act, 2001,** extended the freeze on the total number of Lok Sabha and State Assembly seats, maintaining them at 1971 levels, until the first census taken after 2026

What has changed in India's delimitation framework?

- **Constitutional freeze:** Parliamentary seats were frozen based on the **1971 Census** to incentivise population stabilisation.

- **Policy shift:** The freeze ends after the first Census conducted post-2026.
- **Institutional trigger:** A new Delimitation Commission is expected to be constituted after **2029.**
- **Structural impact:** Representation will realign strictly with population size, altering regional political balance.



Why do southern States face disproportionate losses?

- **Demographic success:** Southern States reduced fertility through education and health investments.
- **Relative population decline:** Slower population growth reduces their share in national totals.
- **Seat reallocation effect:** Population-based delimitation transfers seats to high-growth northern States.
- **Political consequence:** Reduced parliamentary influence despite better governance outcomes.

How does population-based representation create perverse incentives?

- **Rewarding high fertility:** States with higher population growth gain more seats.
- **Punishing stabilisation:** States that controlled population lose political power.
- **Policy distortion:** Weakens incentives for long-term human development investments.
- **Federal imbalance:** Shifts dominance towards large-population States.

What alternative models are being proposed?

- **Increasing total seats:** Expands Lok Sabha strength while retaining proportional shares.
- **Redistribution using 2011 Census:** Adjusts seats without penalising earlier performers.
- **Equal State representation:** Ensures minimum parity across States regardless of population.
- **Weighted representation:** Balances population size with demographic performance indicators.

Why is the Digressive Proportionality principle relevant?

- **Conceptual basis:** Larger States receive more seats but fewer per capita than smaller States.
- **Comparative example:** Used in the European Union Parliament.
- **Equity outcome:** Prevents domination by large States.
- **Democratic balance:** Protects both population equality and federal fairness.

What role should constitutional institutions play?

- **Finance Commission precedent:** Rewards demographic performance through fiscal transfers.
- **Institutional symmetry:** Delimitation Commission can adopt similar equity principles.
- **Performance linkage:** Aligns political representation with responsible governance.
- **Negotiated federalism:** Requires Centre–State consensus before implementation.

Conclusion

- Delimitation must strike a balance between **population-based representation** and **federal equity**. A purely demographic approach risks penalising States that achieved population stabilisation through effective governance. A calibrated, consensus-driven framework is necessary to preserve cooperative federalism, democratic fairness, and long-term national unity.

Early investment in children

- India's early childhood investment debate has gained urgency after policy experts and economists highlighted that foundational learning gaps are limiting India's demographic dividend, even as the country targets **a $30-trillion economy by 2047.**

What it is?

- Early investment in children refers to systematic public and social investment from pre-conception to 8 years of age (the first 3,000 days), covering nutrition, health, emotional care, early learning and cognitive stimulation, which together shape life-long productivity.

Key Trends in Children's Investment

- **NIPUN Bharat & FLN Focus:** India has pivoted toward ensuring every child achieves basic reading and math by Grade 3 to fix learning poverty.
- E.g. **FLN State Rankings** show that states using localized mother-tongue instruction have recorded a 12% rise in oral reading fluency.
- **POSHAN 2.0 & Anganwadi ECCE:** The government now integrates nutrition with early learning so that Anganwadis become full child-development centres.
- E.g. **Mission Saksham Anganwadi** upgraded over two lakh centres with digital tools and play-based learning kits.
- **ASER Learning Deficits:** While enrolment is near universal, actual learning outcomes remain weak in primary grades.
- E.g. A rural Bihar pilot found that nearly 40% of Grade-5 students still need Grade-2 level remedial math support.
- **Urban Lifestyle Threats:** Children face rising risks from screens, inactivity and emotional isolation in cities.
- E.g. Pediatric health surveys show a 15% rise in digital eye strain among children aged four to eight.
- **Global SDG-4 Mandates:** International frameworks push India to treat early childhood education as a core development right.
- E.g. Global education reviews praised India's draft Right to Early Childhood Care framework.

Why Early Investment is Essential?

- **Time-bound brain development**: About 85% of brain wiring is completed by age six, making early stimulation irreplaceable.
- E.g. Infants exposed to rich parent-child interaction develop three times larger vocabularies by age five.
- **Workforce productivity:** Cognitive and emotional foundations built early determine adult employability.
- E.g. Children who attended quality preschools earn about 20% higher entry-level wages.
- **Breaking inter-generational poverty:** Early intervention prevents disadvantage from becoming permanent.
- E.g. Community childcare under women-livelihood missions increased mothers' workforce participation.
- **The Heckman curve:** Returns on early childhood spending exceed all later education investments.

- E.g. NITI Aayog estimates one rupee spent early saves eleven rupees in future health and productivity losses.
- **Reducing public expenditure:** Strong early foundations lower later costs of dropouts, crime and disease.
- E.g. States with high ECCE coverage have 25% lower school dropout and juvenile delinquency rates.

Initiatives Taken in India:

- **ICDS (1975):** Provides integrated services of nutrition, health check-ups, immunisation and early care to children under six through Anganwadis.
- **Mission POSHAN 2.0:** Combines nutrition support with early childhood education under the idea of **"Poshan bhi, Padhai bhi"** to improve holistic development.
- **Saksham Anganwadi Mission:** Upgrades Anganwadi centres with better buildings, digital tools and play-based learning material for quality ECCE delivery.
- **NIPUN Bharat:** Aims to ensure every child achieves foundational reading, writing and numeracy skills by the end of Grade 3.
- **NEP 2020:** Formally integrates Early Childhood Care and Education into the school system through the 5+3+3+4 curricular structure.

Key Challenges in India

- **Fragmented governance:** Child health, nutrition and learning data remain poorly integrated.
- E.g. Mother-child health records do not synchronise with school enrolment databases.
- **Anganwadi capacity gaps:** Workers are trained for nutrition but not early pedagogy.
- E.g. Surveys show most Anganwadi workers feel unprepared to deliver play-based learning.
- **School-readiness crisis:** Children enter Grade-1 without basic cognitive and motor skills.
- E.g. Vidya Pravesh assessments show one-third of rural children cannot identify shapes or colours.
- **Urban middle-class neglect:** Many private preschools lack developmental standards.
- E.g. Urban child audits found nearly half of kindergartens have no outdoor play space.
- **Low public spending:** Early childhood receives a tiny share of education budgets.
- E.g. ECCE spending remains near one-tenth of one percent of GDP despite high returns.

Way ahead:

- **National ECCD Mission:** A mission-mode programme should integrate health, nutrition, early learning and parenting support from pre-conception to eight years, ensuring no child falls through

policy silos during the most critical brain-development phase.

- **Integrated Child Development Hubs:** Co-locating Anganwadis with primary schools will allow smooth transition from play-based learning to formal education while sharing teachers, health services and learning resources.
- **Parent education programmes:** Training parents in talking, reading, playing and responsive caregiving ensures that cognitive and emotional stimulation continues at home, where children spend most of their early years.
- **Legal right to Early Childhood Education:** Bringing ages 3–6 under the RTE Act will force states to guarantee quality preschool access, trained educators and minimum standards, making early learning a justiciable right.
- **CSR and philanthropy for Anganwadis:** Private and philanthropic funding can modernise Anganwadis with better infrastructure, learning kits and training, accelerating quality improvement without burdening public finances.

Conclusion:

- India's future workforce is being shaped not in universities, but in homes, Anganwadis and early classrooms today. Without strong early foundations, economic ambition will remain fragile. Investing in children is not welfare—it is nation-building in its most powerful form.

PSLV Mission Failures: What Consecutive Setbacks Mean for ISRO

- PSLV mission failures in 2025–26 raise concerns over ISRO's quality control, third-stage reliability, transparency, and commercial credibility in global space markets.

PSLV Mission Failures

- The Indian Space Research Organisation's **first launch of the year** ended in failure when the **PSLV-C62** mission carrying 16 satellites failed to reach its intended orbit.
- This marks the second consecutive failure of the PSLV, ISRO's workhorse launch vehicle for over three decades.
- In both the January 2026 failure and the earlier setback **(PSLV-C61 in May 2025)**, the rocket performed normally through the first two stages but developed problems during the third stage, which is critical for achieving orbital velocity.
- The previous failure was attributed to an unexpected drop in combustion chamber pressure,

though the **Failure Analysis Committee** report was not made public. While the cause of the latest failure is yet to be confirmed, it is suspected to be similar.

- A pressure drop during the third stage reduces thrust, preventing the rocket from attaining the acceleration required to sustain orbit around the Earth.

PSLV: How India's Workhorse Rocket Reaches Orbit

- Polar Satellite Launch Vehicle (PSLV) is a **four-stage launch vehicle**, with each stage using its own engine and fuel to sequentially propel the mission before detaching once its role is complete.

First Stage: Lift-off and Atmospheric Ascent

- The first stage handles lift-off and a near-vertical climb to about 50–60 km.
- Using **solid propellant**, it overcomes gravity and atmospheric drag, consuming massive fuel in under two minutes before being jettisoned.

Second Stage: Vertical-to-Horizontal Transition

- Powered by the indigenously developed **Vikas engine** and a **liquid fuel**, the second stage continues ascent while building horizontal velocity.
- It takes the rocket to roughly 220–250 km altitude and accelerates it to about 14,000 km/h, significantly reducing overall mass.

Third Stage: Rapid Acceleration

- In this phase, the vehicle moves almost entirely horizontally on a sub-orbital path.
- Burning **solid fuel,** the third stage rapidly accelerates the rocket to orbital speeds of around 26,000–28,000 km/h—crucial for preventing it from falling back to Earth.
- The third stage is, therefore, about rapid acceleration. The PSLV rocket burns solid fuel to achieve this.

Fourth Stage: Precise Orbital Insertion

- The final stage uses **liquid propulsion** to precisely place satellites into their designated low-Earth orbits, typically between **250 and 2,000 km.**
- Once payload deployment is complete, all stages have separated, having fulfilled their roles.

The Critical Role of PSLV's Third Stage

- The third stage is one of the most delicate phases of a launch.
- If the rocket fails to achieve the required velocity, it cannot sustain orbit and is pulled back by

Earth's gravity, as seen in the PSLV-C61 failure last year.

- In this stage, **solid fuel burns and turns into gas**, increasing pressure inside the combustion chamber.
- The high-pressure gas exits through a nozzle, producing thrust that rapidly accelerates the rocket to near-orbital speeds.
- Higher chamber pressure results in greater thrust and acceleration. Any pressure drop—due to leakage or other faults—reduces thrust, preventing the rocket from attaining the speed needed to maintain orbit.

What Went Wrong Earlier

- Last year's failure was attributed to a manufacturing defect that caused leakage and reduced pressure in the combustion chamber.
- If the latest failure is due to a similar issue, it could pose a reputational challenge for Indian Space Research Organisation.

Strategic Implications: The Loss of EOS-N1

- The primary payload, EOS-N1, was a high-stakes asset for India's national security and governance.

Hyperspectral Imaging (HSI):

- Unlike standard optical sensors, HSI captures data across hundreds of narrow spectral bands. This allows for **"material fingerprinting"—**the ability to distinguish between a camouflaged tank and the surrounding foliage.

Surveillance Gap:

- The loss of this satellite creates a gap in India's **Space-Based Surveillance (SBS)** capabilities at a time of heightened regional geopolitical tension.

Civilian Applications:

- The mission was intended to aid in precision agriculture, mineral exploration, and environmental monitoring, all of which now face delays.

Commercial and Global Market Dimensions

- ISRO's commercial arm, NewSpace India Limited (NSIL), operates in a highly competitive global market.

Market Share at Risk:

- The global small-satellite launch market is valued at billions of dollars. Companies like **SpaceX**

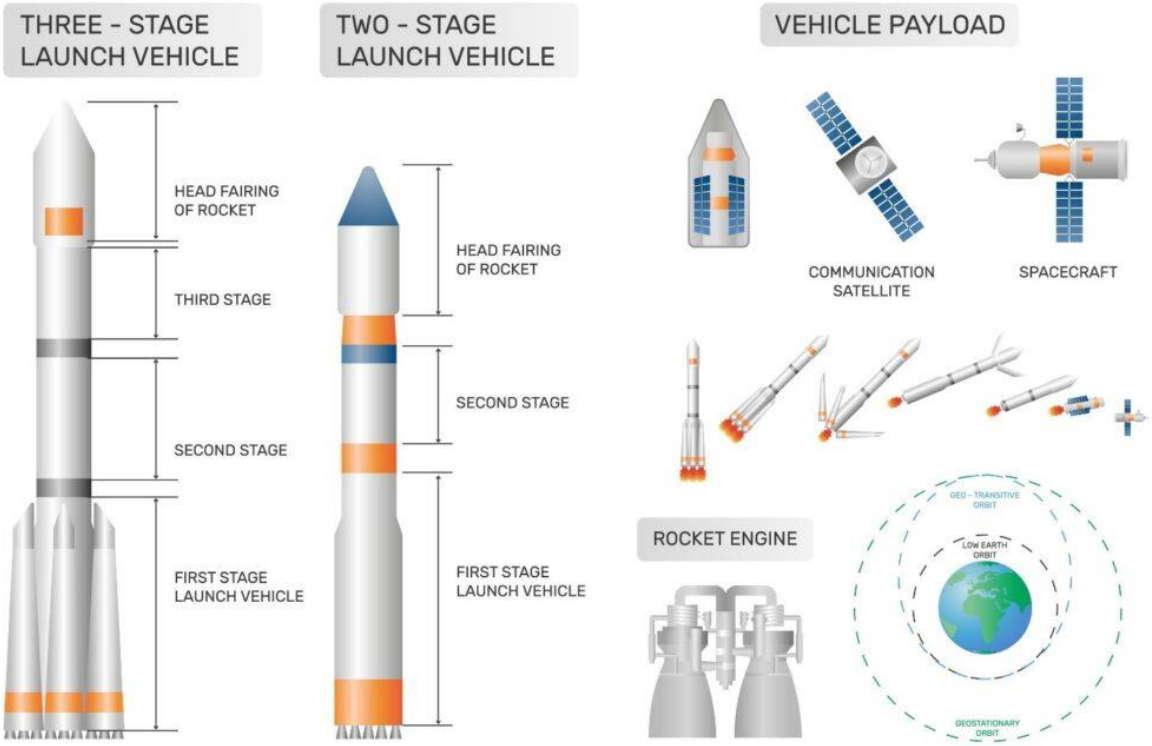
(Falcon 9) and Rocket Lab provide stiff competition.

International Partnerships:

- PSLV-C62 carried 15 payloads from Spain, Brazil, and Nepal. Repeated failures could lead these nations to seek more "reliable" alternatives, despite ISRO's cost advantage.

Insurance Costs:

- Frequent failures lead to higher insurance premiums for satellites launched via PSLV, effectively neutralizing India's low-cost advantage.



Institutional and Reputational Dimensions

The "Chandrayaan Effect":

- Following the global acclaim of Chandrayaan-3, the public and government expectations are at an all-time high. A failure in a "routine" launch vehicle like the PSLV is perceived more harshly than a failure in an experimental mission.

Credibility of the "Workhorse" Label:

- The PSLV has flown 64 missions with only five failures (a ~92% success rate). While statistically strong, the clustering of failures suggests an institutional "fatigue" or a need for modernizing the production line.

Human Resource Strain:

- With ISRO simultaneously focusing on Gaganyaan, the Moon, and the Sun (Aditya), resources and senior expertise may be stretched thin across too many high-priority verticals.

Impact on Future Missions

Gaganyaan (Human Spaceflight):

- Although Gaganyaan uses the LVM3, any failure within ISRO's ecosystem triggers a "pause" and a rigorous safety audit, potentially delaying the human spaceflight timeline.

Bharatiya Antariksha Station:

- The goal of an Indian space station by 2035 relies on a high frequency of successful launches. These setbacks necessitate a re-evaluation of the "assembly line" approach to rocket manufacturing.

Way Forward

Root Cause Analysis (RCA):

- A transparent, "no-blame" investigation into the PS3 stage production at the Satish Dhawan Space Centre (SDSC).

End-to-End Digitalization:

- Implementing advanced Digital Twins and AI-based monitoring for every stage of rocket assembly to detect micro-anomalies before launch.

Private Sector Integration:

- Accelerating the transfer of PSLV technology to the private sector (via the HAL-L&T consortium) could allow ISRO to focus on R&D while ensuring industrial-grade quality control for routine launches.

Restoring Global Trust:

- Proactive communication with international partners (Spain, Brazil, Nepal) to assure them of corrective measures, possibly offering "re-launch" slots at subsidized rates.

Fallout of Repeated PSLV Failures for ISRO

- Space missions allow little margin for error, and while failures are not uncommon globally, back-to-back setbacks involving the trusted PSLV are a serious concern for ISRO.
- With three of its last six missions failing, ISRO faces an unusually high failure rate.
- As the PSLV is a key revenue generator through commercial and foreign launches, questions over its reliability could hurt both credibility and finances.

- However, ISRO's strong history of recovery from crises offers hope that it can restore confidence after the latest mission.

The Bigger Picture

- Regardless of the precise technical causes, the central concern is institutional.
- By keeping the **PSLV-C61 FAC (Failure Analysis Committee) report** internal, ISRO avoided external scrutiny of its corrective measures and return-to-flight criteria.
- Launching **PSLV-C62** just eight months after a major failure, without public disclosure of investigation findings, has intensified questions about transparency, quality control, and risk management—now placing ISRO under sharper technical and reputational scrutiny.

Conclusion

- While consecutive PSLV failures are a significant setback, they offer a critical opportunity for ISRO to institutionalize more rigorous quality controls.
- By addressing the PS3 stage anomalies transparently and leveraging private sector partnerships, India can restore global confidence, ensuring its "workhorse" remains a reliable pillar for future strategic and commercial milestones.

The continued custody in Delhi Riots case

- The Supreme Court's order dated January 5, 2026, in the **Delhi Riots "larger conspiracy"** case has once again brought into sharp focus the fragile state of **personal liberty in India's criminal justice system**. While the Court granted bail to five accused persons, it denied bail to Umar Khalid and Sharjeel Imam, despite both having spent over five years in custody without the commencement of trial. The editorial questions whether prolonged incarceration without trial can be reconciled with constitutional guarantees under Article 21.

Core Issue

- The central issue is whether continued imprisonment without trial, based on expansive interpretations of anti-terror laws, amounts to a violation of personal liberty.
- The case raises fundamental concerns about:
- The right to a speedy trial,
- The interpretation of "terrorism" under the UAPA,

- The judiciary's duty to scrutinise prosecution claims rather than defer to them.

Prolonged Custody and Article 21

- Article 21 of the Constitution **guarantees the right to life and personal liberty**, which judicial precedent has repeatedly interpreted to include the right to a speedy trial.

The Supreme Court itself has acknowledged that:

- If the State cannot ensure a trial within a reasonable period, it **cannot justifiably oppose bail.**
- In this case, the accused have remained incarcerated for over **five years,** while the trial has not even commenced.
- The sheer scale of the prosecution - involving hundreds of witnesses - makes the prospect of a timely conclusion implausible, raising the risk of indefinite incarceration without adjudication of guilt.

Unconvincing Reasoning in Bail Denial

- The Court distinguished Umar Khalid and Sharjeel Imam from other accused on the ground that they were alleged to have "conceptualised" or "orchestrated" the riots.

This reasoning is problematic because:

- At the bail stage, accusations remain untested allegations.
- The right to liberty cannot be made contingent on the gravity of claims alone, especially when no trial has begun.
- **Individuals do not lose their right to a speedy trial merely because the State labels them as principal conspirators.**
- Delays in trial cannot be attributed to accused persons, who have no control over courtroom schedules or prosecutorial pace.

Expansive Interpretation of UAPA

- **Section 15 of the UAPA defines terrorism** and includes the phrase "by any other means," which the Court interpreted broadly to include acts such as protest-related chakka jams.
- **This interpretation raises serious concerns:**
- Criminal law traditionally requires narrow interpretation to prevent state overreach.
- Broad readings of vague phrases expand prosecutorial discretion and dilute safeguards against misuse.
- Acts of protest, even disruptive ones, risk being subsumed under anti-terror provisions without clear evidence of violence or intent to terrorise.

- Such interpretive expansion strengthens the coercive power of the State at the cost of individual liberty.

Prolonged Incarceration and the Bail Question

- **Under Section 43D (5) of the UAPA,** bail can be denied if the court believes there is a prima facie case against the accused.
- All appellants highlighted their long custody since 2020, with the trial still at the charge-framing stage.
- They relied on the **Union of India v. K A Najeeb ruling**, where the Supreme Court of India held that constitutional courts may grant bail under UAPA if there is no likelihood of a speedy trial, to protect Article 21 rights to life and liberty.

SC's Clarification on K.A. Najeeb

- The Court clarified that K.A. Najeeb is not a mechanical rule.
- Delay does not automatically override statutory bail bars; it acts as a trigger for heightened judicial scrutiny, not a "trump card."
- The Court noted the voluminous record—over 1,000 documents and 835 witnesses—and procedural objections by the defence, holding that the delay cannot be attributed solely to the prosecution.
- The Court held that delay must be weighed against the gravity of the offence and the role of the accused.
- For alleged "masterminds" Umar Khalid and Sharjeel Imam, their conspiratorial centrality meant the statutory bar on bail prevailed despite delay.
- For co-accused characterised as facilitators with limited logistical or local roles, continued custody was deemed punitive.
- As they lacked the autonomous capacity to affect the trial, the balance tilted in favour of liberty

Bail and "Prima Facie" Standard

The problem lies in:

- The elasticity of what constitutes a prima facie case,
- Courts relying heavily on prosecution narratives rather than tested evidence,
- The colonial origins of such provisions, historically used to suppress political dissent.
- By widening the scope of Section 15, denial of bail becomes almost automatic, transforming pre-trial detention into a punitive measure.

Need for Scrutiny, Not Deference

Key concerns include:

- Evidence on record primarily indicates organisation or facilitation of protests, not terrorist acts.
- The prosecution's claim of a larger conspiracy is treated as plausible without rigorous examination.
- Courts must distinguish between examining possible defences and uncritically accepting prosecutorial inferences.
- When liberty hangs in the balance after years of incarceration, judicial scrutiny must be exacting, not deferential.

Historical Lessons on "Conspiracy"

- History shows that conspiracy charges are often used to compensate for the absence of direct evidence. From **the Dreyfus Affair** to modern political trials, such allegations have justified prolonged imprisonment without proof.

Cautions :

- Allegations of conspiracy demand greater scrutiny, not relaxed standards.
- Absence of direct evidence should not legitimise endless incarceration.
- Protest and dissent must not be blurred with violence or terrorism.

Conclusion

- The continued imprisonment of Umar Khalid and Sharjeel Imam without trial represents a grave injustice. It undermines the constitutional promise that liberty cannot be sacrificed to mere suspicion or prosecutorial convenience.
- If prolonged custody without trial becomes acceptable, the right to liberty risks becoming illusory. The judiciary's role is not merely to manage national security concerns, but to act as the ultimate guardian of constitutional freedoms. Denial of bail in such circumstances is not just a legal error — it is a constitutional failure that must be corrected.

NITI Aayog report on Convergence of MSME Sector Schemes

- NITI Aayog has released a comprehensive report in January 2026 proposing convergence of MSME schemes to reduce duplication, improve efficiency and enhance last-mile delivery.
- The report is a policy blueprint prepared by the **Administrative Staff College of India (ASCI)** for

NITI Aayog, analysing **18 centrally administered MSME schemes** and recommending information and process convergence to improve outcomes, coordination and resource utilisation.

What are MSMEs?

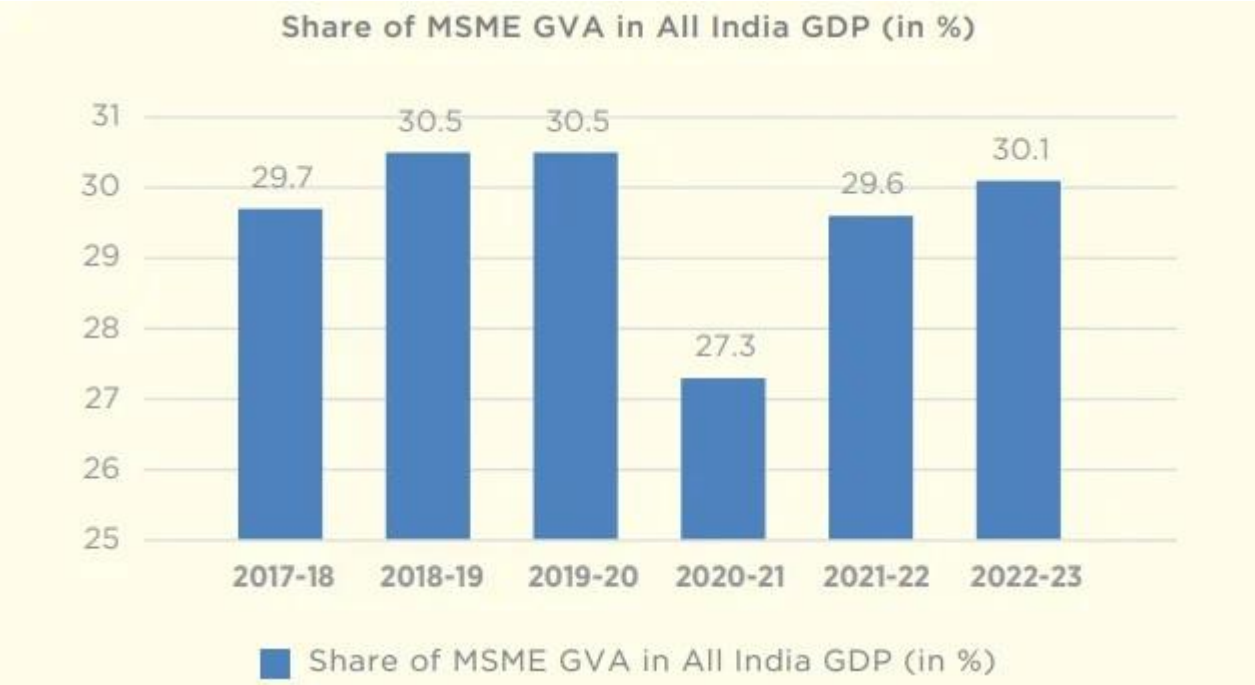
- **MSMEs are businesses defined and categorized based on their investment in plant, machinery, or equipment and their annual turnover and are the foundation stone of India's economic framework.**
- Government spending on the MSME sector has risen sharply to **Rs 22,094 crores in 2023-24 from Rs 6,717 crores in 2019-20.**
- **Classification**: The MSME sector is classified in accordance with the **Micro, Small and Medium Enterprises Development (MSMED) Act, 2006**, based on investment in plant and machinery and turnover, with a revised classification effective from **1st April, 2025.**

Enterprise	Earlier Classification		Revised Classification	
	Investment in plant and machinery	Turnover	Investment in plant and machinery	Turnover
Micro	Not exceeding Rs. 1 crore.	Not exceeding Rs. 5 crores.	Not exceeding Rs. 2.5 crore.	Not exceeding Rs. 10 crores.
Small	Not exceeding Rs. 10 crores.	Not exceeding Rs. 50 crores.	Not exceeding Rs. 25 crores.	Not exceeding Rs. 100 crores.
Medium	Not exceeding Rs 50 crores.	Not exceeding Rs. 250 crores.	Not exceeding Rs 125 crores.	Not exceeding Rs. 500 crores.

Key facts of MSME sector:

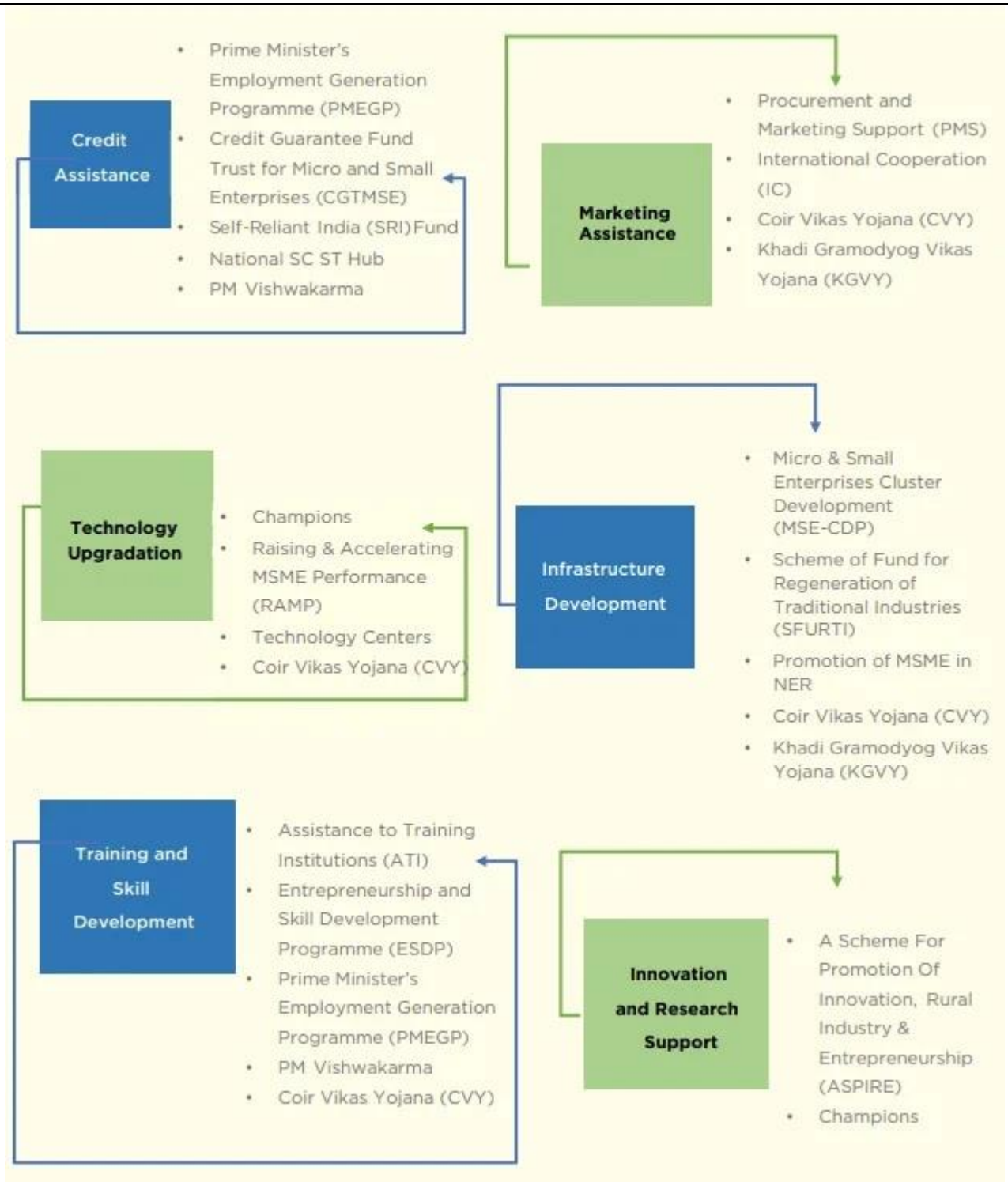
- **GDP contribution:** MSMEs contribute around 29–30% of India's GDP, underscoring their role as growth engines.
- **Employment:** The sector employs over 28.7 crore people, second only to agriculture in workforce absorption.
- **Exports:** MSMEs account for about **45–46% of India's exports**, despite only ~1% being direct exporters.
- **Scale & spread:** India has 6.3+ crore MSMEs, with ~51% located in rural areas, highlighting inclusiveness and informality challenges.
- **Rising public support:** Government MSME budget outlay rose from ₹6,717 crore (2019–20) to

₹22,094 crore (2023–24), increasing the need for efficient delivery.



Key Organizations Attached to Ministry of MSMEs:

- **Office of the Development Commissioner (DC-MSME):** Implements MSME policies and programs, advises on policy, offers consultancy, facilitates technology upgrades, and develops human resources through training.
- **Khadi and Village Industries Commission (KVIC):** Promotes rural employment through khadi and village industries by producing saleable articles, fostering self-reliance, and providing training, research, and raw materials.
- **Coir Board:** Develops the coir industry by promoting exports, advancing research, and improving workers'' living conditions.
- **National Small Industries Corporation (NSIC):** Promotes MSME growth through marketing support, credit facilitation, raw material provision, and a network of technical service centers across India.
- **National Institute for Micro, Small and Medium Enterprises (NIMSME):** Premier training institute offering capacity-building programs for entrepreneurs and officials to enhance MSME capabilities and competitiveness.
- **Mahatma Gandhi Institute for Rural Industrialisation (MGIRI):** Accelerates sustainable rural industrialization by attracting professionals to Gram Swaraj, empowering traditional artisans, and encouraging innovation through R&D and pilot studies.



Opportunities for scheme convergence:

- **Unified digital access to schemes:** Multiple portals increase compliance costs and information asymmetry; a single digital window simplifies discovery, eligibility checks and applications for MSMEs.

- **Cluster development rationalisation:** Overlapping cluster schemes dilute funding and governance; convergence can improve scale, infrastructure quality and collective competitiveness.
- **Skill programme alignment:** Fragmented skilling schemes target the same beneficiaries, causing duplication and weak industry linkage; alignment improves outcomes and employability.
- **Marketing support integration:** Dispersed marketing schemes limit scale and visibility; integration enables coordinated domestic and export promotion for MSMEs. E.g. A unified Marketing Assistance Wing can streamline MSME participation in India International Trade Fair, buyer–seller meets and overseas expos under one framework.
- **Innovation ecosystem consolidation:** Parallel incubation schemes fragment funds and mentoring; convergence strengthens innovation pipelines and rural enterprise support. E.g. Integrating ASPIRE into MSME Innovative can enhance agro-rural incubators by combining grassroots innovation with advanced incubation infrastructure.

Key initiatives for MSMEs:

- **Udyam Registration & Udyam Assist Platform:** Enable easy digital registration and formalisation of MSMEs, improving access to credit, schemes and market opportunities.
- **PMEGP & PM Vishwakarma:** Promote self-employment, entrepreneurship and traditional artisan livelihoods through credit-linked subsidies and skill support.
- **CGTMSE & SRI Fund:** Provide collateral-free loans and equity infusion to MSMEs and startups, reducing financing gaps and risk aversion.
- **RAMP Programme:** Enhances MSME productivity, resilience and global competitiveness through reforms, capacity building and performance-linked incentives.
- **GeM & Public Procurement Policy:** Ensures assured market access by mandating government procurement from MSMEs through transparent digital platforms.

Challenges associated with convergence:

- **Inter-ministerial silos:** Ministries often protect jurisdictional control, slowing data sharing and coordinated implementation of converged schemes.
- E.g. Overlaps between MSME Ministry and Rural Development Ministry in coir and village industries have historically delayed unified cluster governance.
- **Risk of dilution of targeted schemes:** Broad convergence may weaken focus on vulnerable groups requiring tailored interventions.
- E.g. The National SC/ST Hub needs ring-fenced funding and autonomy to avoid marginalisation during MSME scheme mergers.

- **Capacity constraints at field level:** Local implementing agencies may lack skills to manage integrated, technology-driven schemes.
- E.g. District Industries Centres (DICs) show uneven capacity across states, affecting scheme uptake and grievance redressal.
- **Data integration challenges:** Legacy IT systems and incompatible databases hinder real-time coordination and outcome tracking.
- E.g. State MSME dashboards often do not seamlessly integrate with central portals like Udyam, limiting evidence-based policymaking.
- **Transition risks for beneficiaries:** Abrupt mergers can disrupt ongoing benefits and delay disbursements during administrative transitions.

Key recommendations:

- **Centralised MSME Portal:** An AI-enabled single digital platform integrating schemes, compliance, finance and market intelligence, with dashboards, chatbots and mobile access for real-time MSME support.
- **Cluster scheme convergence:** Merge SFURTI with MSE-CDP through a dedicated sub-scheme for traditional industries, unified governance and consolidated funding to improve scale while preserving crafts.
- **Skill programme rationalisation:** Restructure MSME skilling into a three-tier framework covering entrepreneurship, technical skills and rural/women artisans, reducing overlap while retaining targeted inclusion.
- **Dedicated Marketing Assistance Wing:** Create a unified domestic and international marketing wing to streamline MSME participation in trade fairs, buyer–seller meets and export promotion activities.
- **Innovation scheme integration:** Integrate ASPIRE into MSME Innovative as a special agro-rural category, with earmarked funding for rural incubators and broader access to advanced incubation.

Conclusion:

- The NITI Aayog report highlights that India's MSME challenge is no longer lack of schemes, but fragmented delivery. Smart convergence can convert rising public expenditure into tangible productivity, employment and export gains. Done cautiously, it can make MSME support simpler, faster and more impactful.

Accountability in Democratic Institutions

- Lok Sabha Speaker Om Birla recently addressed **the 28th Commonwealth Speakers and Presiding Officers Conference (CSPOC)** in New Delhi.
- He emphasized that the legitimacy of democratic institutions depends on their ability to remain transparent, inclusive, and accountable amidst the rise of AI and social media.

What is accountability?

- Accountability is the ethical obligation of those in power to provide an account of their actions, justify their decisions, and face consequences for their conduct. It is a relational concept where the agent (government) is answerable to the principal (citizens).

Key Features

- **Answerability:** The duty to explain decisions and provide reliable information to the public.
- **Enforceability:** The existence of mechanisms to penalize misconduct or rectify institutional failures.
- **Responsiveness:** The capacity of institutions to adapt and respond to the evolving needs and feedback of the citizenry.

Importance of Accountability

- **Fostering Public Trust:** Accountability bridges the gap between the rulers and the ruled by ensuring honesty.
- E.g. The National Critical Mineral Mission (2025) includes transparency clauses to ensure public resources are managed without bias.
- **Curbing Corruption:** Constant scrutiny prevents the misuse of authority for personal gain.
- E.g. The 130th Constitution Amendment Bill (2025) proposes automatic removal of ministers detained for serious crimes to restore institutional ethics.
- **Enhancing Service Delivery:** It ensures that welfare benefits reach the intended beneficiaries without leakages.
- E.g. The use of social audits in MGNREGA has successfully identified and corrected irregularities in fund distribution at the grassroots level.
- **Protecting Marginalized Voices:** Accountable systems ensure that the last person in the social hierarchy is heard.
- E.g. In his CSPOC speech, Om Birla highlighted that inclusive deliberation is essential to prevent

social polarization caused by digital misinformation.

- **Upholding Rule of Law:** It ensures that no individual, regardless of their status, is above the legal framework.
- E.g. The Supreme Court's 2025 judgment on State Governors' veto powers reaffirmed that constitutional heads are accountable to the legislative will.

Challenges to Accountability

- **Misuse of Technology:** The rise of AI and deepfakes can be used to manipulate public opinion and evade truth. E.g. Recent concerns over generative AI in political campaigns show how digital tools can blur the lines of responsibility.
- **Opaque Decision Making:** Excessive secrecy under the guise of national security can hinder public oversight. E.g. Delays in responding to RTI applications in sensitive sectors continue to be a significant barrier to administrative transparency.
- **Erosion of Parliamentary Propriety:** Frequent disruptions in the House reduce the time available for executive scrutiny. E.g. Recent sessions have seen record suspensions of members, which critics argue weakens the primary forum for horizontal accountability.
- **Structural Delays:** A slow judicial process prevents timely enforcement of accountability for misconduct. E.g. With over 5 crore cases pending in Indian courts as of 2025, the deterrent effect of legal sanctions is often diluted.
- **Information Overload and Disinformation:** Social media often prioritizes engagement over accuracy, making it harder for citizens to hold leaders accountable. E.g. The Voluntary Code of Ethics (2025) for social media platforms has struggled to keep pace with rapid misinformation.

Way Ahead

- **Strengthening Standing Committees**: These mini-parliaments must be empowered to scrutinize every major bill and budget.
- E.g. Speaker urged the revival of robust committee oversight to provide deep-dive technical scrutiny that the main House often lacks.
- **Adopting Ethical AI Frameworks**: Parliaments must establish clear guidelines for the responsible use of AI in legislative work.
- E.g. The proposed Unified Digital Platform for all Indian legislatures aims to set new benchmarks in digital transparency and paperless functioning.
- **Institutionalizing Social Audits:** Moving beyond individual schemes, social audits should be a mandatory feature for all public departments.

- E.g. Expanding **the Citizen Charter model** to include time-bound digital services can reduce bureaucratic red-tapism significantly.
- **Judicial and Electoral Reforms**: Ensuring faster disposal of cases involving public officials is vital for enforceability.
- E.g. The implementation of the preemptive removal process for detained ministers could act as a strong ethical deterrent against criminalization.
- **Deepening Citizen Engagement**: Governance must move beyond the five-year election cycle to include continuous participation.
- E.g. Platforms like MyGov should be further leveraged to invite direct feedback on draft policies before they are enacted into law.

Conclusion:

- True democracy is not just about the act of voting but the ongoing ethical conduct of those who are elected. As Speaker Om Birla noted, when institutions prioritize inclusivity and transparency, they strengthen the enduring bond between the citizen and the State. Ultimately, accountability transforms power into a public trust, ensuring that governance remains a service rather than a privilege.

India a Global Cooperative Powerhouse

- The United Nations has declared 2025 as **the International Year of Cooperatives (IYC)**, highlighting India's emergence as a global leader with over 8.5 lakh registered cooperatives and a renewed policy focus under the vision of **"Sahkar Se Samriddhi."**

Key Data and Statistics on Indian Cooperatives:

- **Scale:** India accounts for approximately **27% of all cooperatives** worldwide, making it one of the largest organized economic networks globally.
- **Membership:** As of late 2025, there are nearly 32 crore members, covering roughly 98% of rural India across 30 different sectors.
- **Functional Strength:** Out of 8.5 lakh registered societies, approximately 6.6 lakh are fully operational, including nearly 80,000 **Primary Agricultural Credit Societies (PACS).**
- **Financial Inclusion**: The sector includes 1,457 urban cooperative banks holding assets worth ₹7.38 trillion and deposits of roughly ₹5.84 trillion as of March 2025.

Women Empowerment: Through links with Self-Help Groups (SHGs), the cooperative framework has

integrated nearly 10 crore women into the organized economy.

Historically

Cooperatives in Pre-Independence Era -

- **First Cooperative Act in India:** Indian Famine Commission (1901) led to the enactment of the first **Cooperative Credit Societies Act in 1904** followed by the (amended) Cooperative Societies Act, 1912.
- **Maclagan Committee:** In 1915, a committee headed by Sir Edward Maclagan, was appointed to study and report whether the cooperative movement was proceeding on economically and financially sound lines.
- **Montague-Chelmsford Reforms:** Through the Montague-Chelmsford Reforms of 1919, co-operation became a provincial subject which gave further impetus to the movement.
- **Post Economic Depression, 1929:** Various committees were appointed in Madras, Bombay, Travancore, Mysore, Gwalior, and Punjab to examine the possibilities of restructuring the Cooperative societies.
- **Gandhian Socialist Philosophy:** Cooperation according to Gandhiji was necessary for the creation of a socialistic society and complete decentralisation of power.
- He was of the opinion that cooperation was one of the important means to empower people.
- In South Africa, Mahatma Gandhi instituted **the "Phoenix Settlement"** as a cooperative in a

socialistic pattern.

- He established the **Tolstoy Farm as a rehabilitation cooperative settlement** for the families affected by the South African freedom struggle during the period.

Cooperatives in Post- Independence India:

- **First Five-Year Plan (1951-56):** Highlighted the promotion of cooperatives for comprehensive community development.
- **Multi-State Co-operative Societies Act, 2002:** Provides for the formation and functioning of multi-state co-operatives.
- **Multi-State Co-operative Societies (Amendment) Act, 2022** introduced the Co-operative Election Authority to oversee board elections in multi-state co-operative societies.
- **97th Constitutional Amendment Act of 2011:** Established the right to form cooperative societies as a fundamental right (Article 19).
- Introduced a new Directive Principle of State Policy on Cooperative Societies (Article 43-B).
- Added a new Part IX-B to the Constitution titled "The Co-operative Societies" (Articles 243-ZH to 243-ZT).
- Empowered Parliament to enact laws governing multi-state cooperative societies (MSCS) and delegated authority to state legislatures for other cooperative societies.
- **Establishment of Union Ministry of Cooperation (2021):** Assumed responsibility for cooperative affairs, previously overseen by the Ministry of Agriculture.

Importance of Cooperatives in India:

- **Grassroots Credit Access:** They provide essential short-term liquidity to farmers who may be underserved by commercial banks. E.g. PACS are being computerized to link directly with NABARD, ensuring transparent and easy credit flow to remote villages.
- **Market Integration for Small Producers:** Cooperatives aggregate small-scale produce to give farmers better bargaining power and market reach. E.g. Amul (GCMMF) connects millions of milk producers directly to a global supply chain, ensuring fair pricing.
- **Food Security and Storage:** They play a vital role in decentralizing grain storage to reduce post-harvest losses. E.g. The World's Largest Grain Storage Plan has already completed godowns in 112 PACS to create 68,702 MT of local storage capacity.
- **Promoting Sustainable Livelihoods**: Cooperatives allow for the diversification of income through allied activities like fisheries and organics. E.g. National Cooperative Organics Limited (NCOL) helps farmers transition to organic farming by providing "Bharat Organics" branding and

pesticide testing.

- **Affordable Service Delivery:** They act as multi-service hubs providing essential goods and healthcare at the village level. E.g. Over 800 PACS have been assigned store codes to operate as Pradhan Mantri Bhartiya Janaushadhi Kendras, providing low-cost medicines to rural residents.

Key Initiatives Taken for Cooperatives

- **Digitalization & ERP:** A ₹2,925 crore project to computerize PACS using a common national software (ERP) available in 14 languages to ensure real-time auditing.
- **Establishment of Apex Multi-State Societies:** Creation of three new national bodies: NCEL (Exports), NCOL (Organics), and BBSSL (Seeds) to provide end-to-end support to primary societies.
- **White Revolution 2.0:** A strategic plan to increase milk procurement by 50% in five years by setting up 20,070 new Dairy Cooperative Societies across 31 States/UTs.
- **Legislative and Fiscal Reforms:** Reducing the cooperative surcharge from 12% to 7% and enabling PACS to undertake 25+ new business activities under Model Bye-laws.

Success of Cooperatives in India:

- **Global Competitiveness:** Indian cooperatives are now recognized on the world stage for their scale and professional management. E.g. 15 Indian entities currently feature in the Global Top 300 rankings of cooperatives based on turnover and impact.
- **Export Market Penetration:** Cooperatives are successfully moving beyond local markets to international trade. E.g. National Co-operative Exports Limited (NCEL) recently exported 13.77 LMT of commodities worth over ₹5,500 crore to 28 countries.
- **Digital Transformation:** The transition from manual ledgers to digital transparency has minimized leakages and improved member trust. E.g. Nearly 60,000 PACS are now actively using ERP software, with over 34 crore transactions processed digitally.
- **Social Inclusivity:** The movement has successfully bridged the gap for marginalized sections of society. E.g. NCDC has disbursed over ₹95,000 crore recently, with dedicated schemes like Nandini Sahakar specifically targeting women-led cooperatives.

Impact of Cooperatives:

- **Empowering Marginalised Communities**: The **Amul Dairy Cooperative** in Gujarat, with over 3.6 million milk producers (many from small & marginal farms), empowers rural communities by providing fair prices for milk and fostering economic independence, particularly for women.

- **Boosting Agricultural Productivity and Marketing:** Indian Farmers Fertiliser Cooperative Limited (IFFCO) is the world''s largest fertiliser producer. Cooperatives like IFFCO provide farmers with essential agricultural inputs like fertilisers, seeds, and credit at competitive prices, leading to increased productivity and farm incomes.
- **Facilitating Access to Essential Services:** Kerala State Milk Marketing Federation (Milma), a dairy cooperative, procures milk from farmers and supplies it to consumers in Kerala at affordable prices. This ensures market access for producers and provides essential dairy products to the population.
- **Promoting Inclusive Growth and Job Creation:** A NITI Aayog report highlights that sugar cooperatives in Maharashtra provide employment to over 5 lakh people (direct and indirect), contributing significantly to rural job creation and income generation.

Challenges to Cooperatives in India:

- **Regional Imbalance:** Cooperative growth is concentrated in a few states, leaving others with underdeveloped networks.
- E.g. While **Maharashtra leads** with 2.21 lakh societies, many North-Eastern states still struggle with low cooperative density and functional capacity.
- **Infrastructure Gaps:** Many primary societies lack the modern hardware or storage facilities needed to be economically viable.
- E.g. Despite the storage plan, current capacity remains insufficient for the total national produce,

requiring massive scaling beyond the 112 pilot PACS.

- **Operational Inefficiency:** Older societies often suffer **from "Uncle Judge Syndrome" (nepotism) or** lack of professional management.
- E.g. The need **for Tribhuvan Sahkari University** highlights the current shortage of a professionally trained workforce specifically for the cooperative sector.
- **Financial Constraints:** Many cooperatives face high levels of Non-Performing Assets (NPAs) and limited capital for technology adoption.
- E.g. Urban Cooperative Banks still require rigorous onboarding to the RBI Integrated Ombudsman Scheme to improve their governance and financial stability.

International Year of Cooperatives 2025

- The United Nations has declared 2025 the International Year of Cooperatives (IYC 2025), themed "Cooperatives Build a Better World," to highlight their vital role in sustainable development, poverty reduction, and economic growth, building on a previous IYC in 2012.

Key Aspects of IYC 2025:

- **Theme:** "Cooperatives Build a Better World," emphasizing their contribution to achieving the UN Sustainable Development Goals (SDGs).
- **Objectives:** Increase public awareness, promote growth, and advocate for supportive environments for cooperatives.
- **Launch:** Officially launched at the ICA Global Cooperative Conference in New Delhi in late 2024.
- **Activities:** Involves national plans, conferences, and outreach by governments and organizations like the International Cooperative Alliance.

Way Ahead:

- **Universal Professionalization**: Establishing Tribhuvan Sahkari University and specialized training modules will create a cadre of professional managers to replace archaic governance with modern business practices.
- **Pan-India Expansion:** Efforts must be intensified to replicate the successful cooperative models of Maharashtra and Gujarat in Eastern and North-Eastern states to ensure balanced regional development.
- **Technological Deepening**: Beyond initial computerization, the integration of AI and Blockchain in the National Cooperative Database can ensure end-to-end traceability and fraud-proof auditing for

all 8.5 lakh societies.

- **Credit-Plus Services:** Transforming all functional PACS into Multi-Service Centers will diversify their revenue streams and ensure long-term financial sustainability.
- **Global Brand Building:** Aggressively scaling the "Bharat" brand for seeds and organics through the NCEL will allow small Indian farmers to capture a larger share of the high-value global export market.

Conclusion:

- India's cooperative sector has transformed into a broad economic pillar supporting nearly one-fourth of the world's cooperatives. Digital reforms and new export and organic institutions are empowering 32 crore members at the grassroots. As the world marks the International Year of Cooperatives 2025, India offers a global model of inclusive, collective-led development.

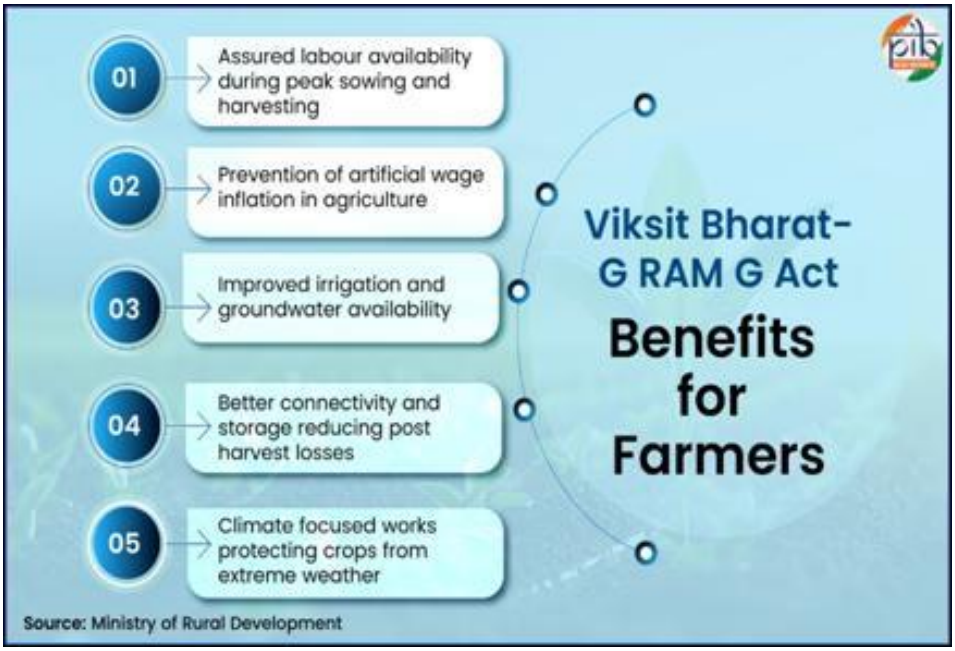
From MGNREGA to VB-G RAM G

- In December 2025, the Government of India introduced a major overhaul of its rural employment policy, replacing the Mahatma Gandhi National Rural Employment Guarantee Act **(MGNREGA)** with a new statutory framework called Viksit Bharat – Guarantee for Rozgar and Ajeevika Mission (Gramin), or **VB–G RAM G.**

Key Changes from MGNREGA to VB–G RAM G

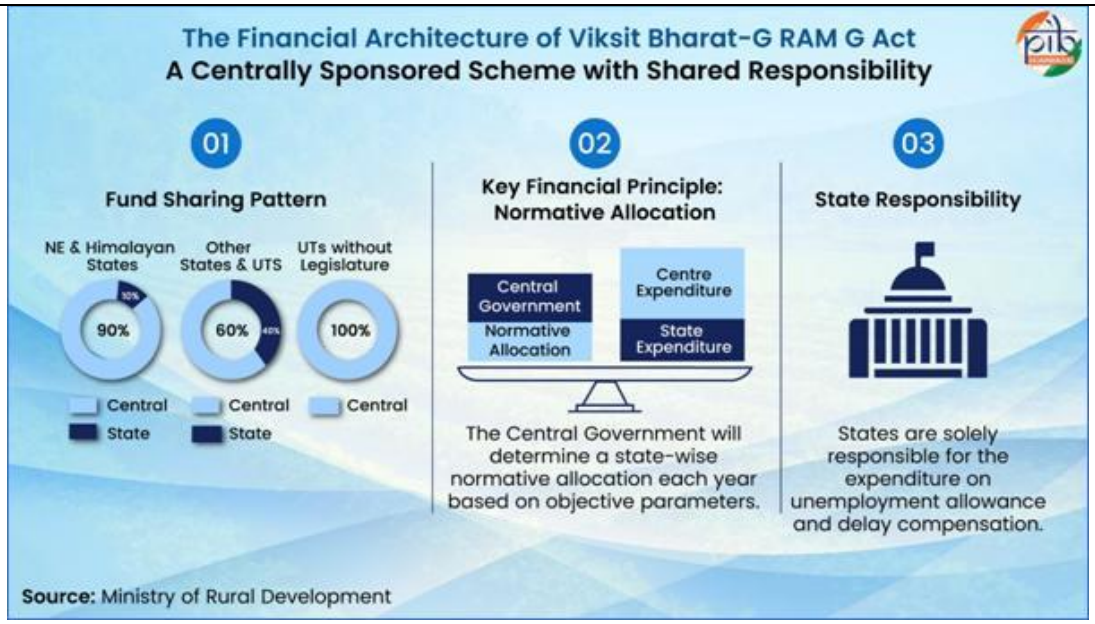
- The new Act, which received Presidential assent on December 21, 2025, introduces several structural and operational shifts:-
- **Increased Employment Days:** The statutory guarantee for wage employment has been raised to 125 days per rural household per year, up from the 100 days previously provided under MGNREGA.
- **Funding Structure:** The scheme has moved from a **central sector model** to a **centrally sponsored framework**. The cost-sharing ratio between the Centre and States is now 60:40 for most states (previously, the Centre bore 100% of unskilled wages), 90:10 for Northeastern/Himalayan states, and 100% for Union Territories.
- **Seasonal "No-Work" Period:** To ensure the availability of agricultural labor during peak seasons, the Act includes an aggregated 60-day no-work period during sowing and harvesting times.
- **Decentralized Planning:** Projects are now driven by **Viksit Gram Panchayat Plans**, which are

integrated into the **PM Gati Shakti National Master Plan** for better infrastructure alignment.



Priority Verticals: Employment is linked to creating durable assets in four specific areas

- Water Security (e.g., lakes, micro-irrigation).
- Rural Infrastructure.
- Livelihood Infrastructure.
- Climate and Disaster Resilience.
- **Digital Governance:** The new system mandates biometric authentication, geotagging, and artificial intelligence for audits and fraud risk mitigation.

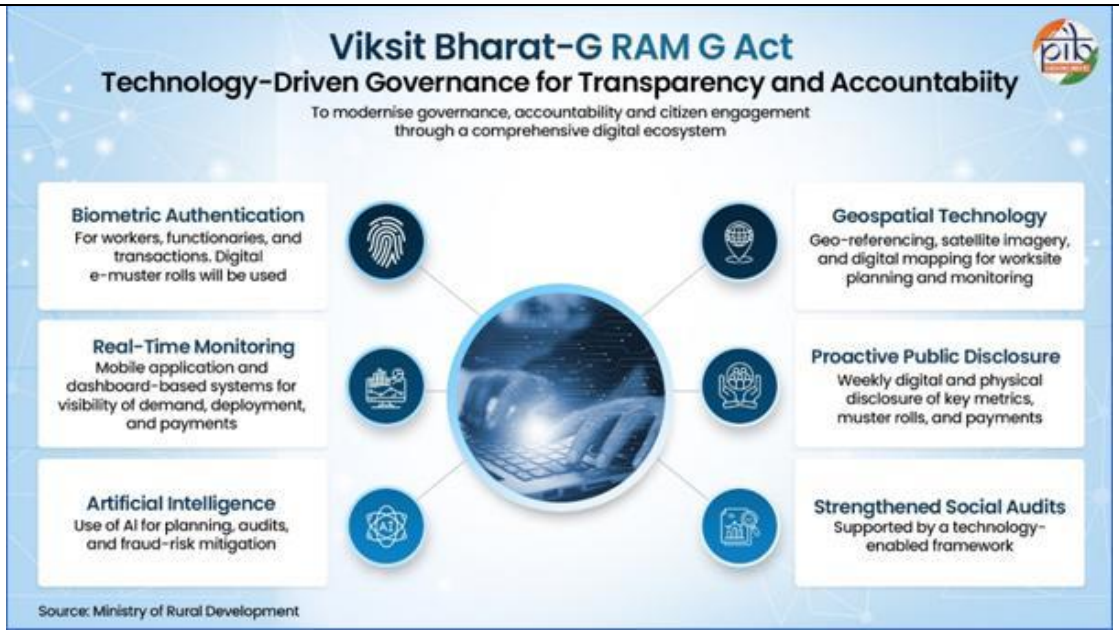


CRITICISMS

Major criticisms include:

Erosion of the "Right to Work"

- Critics contend the scheme shifts from a **demand-driven model** (where work must be provided whenever requested) to a **supply-driven model**.
- **Budget Caps:** The Centre now determines **"normative allocations"** for each state annually. If demand exceeds this cap, states must fund the difference, which critics fear will lead to officials denying work to stay within budget.
- **Loss of Universality:** Employment is no longer guaranteed across all rural areas; it **may be restricted to "notified areas,"** potentially excluding vulnerable households in non-notified regions.



Fiscal Burden on States

- The shift from 100% Central funding for unskilled wages to a 60:40 Centre-State split (for most states) is **a major point of contention.**
- **State Finances:** Economically weaker states like Bihar, Jharkhand, and Chhattisgarh may struggle to mobilize these funds, leading to uneven implementation.
- **Federalism Concerns:** Critics, including leaders from Tamil Nadu, Kerala, and West Bengal, argue this forces states to bear a significant financial burden without a corresponding increase in decision-making power.

Impact of the 60-Day "No-Work" Period

- The Act allows states to pause work for up to 60 days during peak agricultural seasons to ensure labor availability for farmers.
- **Loss of Bargaining Power:** Activists argue this removes a worker''s alternative source of income, forcing landless laborers into potentially exploitative or lower-paying agricultural work.
- **Liquidity Stress:** Vulnerable households may face severe income gaps during these "blackout periods" if private farm work is unavailable or insufficient.

Centralization and Governance

- **Top-Down Planning:** Critics claim the new "National Rural Infrastructure Stack" overrides local priorities, shifting power away from Gram Sabhas and Panchayats to central technocratic control.

- **Digital Barriers:** Mandatory biometric authentication and AI-based monitoring are seen as potential hurdles for illiterate or digitally unconnected workers, which could lead **to "exclusion errors".**

Comparison Summary

Feature	MGNREGA (2005)	VB–G RAM G (2025)
Guaranteed Days	100 days	125 days
Funding (Unskilled)	100% Central	60% Central / 40% State (General)
Planning Model	Demand-driven	Supply-driven via Panchayat Plans
Agricultural Sync	Year-round availability	60-day pause during peak farming
Infrastructure	Basic assets	Aligned with PM Gati Shakti

Symbolic and Political Criticism

- **The removal of Mahatma Gandhi''s name from the scheme** has been called an "ideological shift" and a "political statement" by opposition leaders. They argue the renaming seeks to claim credit for a revamped version of a scheme the current government previously criticized.

Way Forward

Strengthening Local Implementation Capacity

- The success of the new Mission hinges on the efficiency of Gram Panchayats, which now have enhanced planning powers.
- **Administrative Support:** The administrative expenditure ceiling has been **increased from 6% to 9%** to fund better staffing, training, and technical support at the field level.
- **Panchayat-led Planning:** Works must originate from local Viksit Gram Panchayat Plans, which are then integrated with national geospatial systems like PM Gati Shakti.

Ensuring Fiscal Sustainability & Cooperative Federalism

- The shift to a 60:40 cost-sharing pattern requires deep coordination between the Centre and States to prevent financial bottlenecks.
- **Normative Allocations:** States must manage their budgets within Central "normative allocations".
- **State Responsibility:** States are now legally liable for unemployment allowances and any expenditure exceeding their normative cap, creating stronger incentives for efficient fund

management.

Bridging the Digital Divide

- To mitigate the risk of technology-driven exclusion, the framework includes specific safeguards:
- **Exception Handling:** Technology is intended as an enabling tool with "exception handling" for those facing biometric or connectivity issues.
- **Last-Mile Connectivity:** Expanding **the Common Services Centres (CSCs)** network—currently at 4.41 lakh rural centres—and **the BharatNet project** (linking 2.14 lakh Gram Panchayats) will be critical for digital wage payments.

Balancing Agriculture and Wage Employment

- The 60-day "no-work" period must be precisely tailored to local cropping patterns.
- **Dynamic Notifications:** States can notify specific pauses for different districts or blocks rather than a blanket statewide ban, ensuring work remains available in non-peak areas.
- **Higher Potential Earnings:** This period allows workers to earn higher private farm wages while still retaining their 125-day statutory guarantee for the rest of the year.

Focused Asset Creation

- The Mission moves away from fragmented work toward saturation-based infrastructure across four verticals:
- Water Security (Irrigation and groundwater recharge).
- Core Infrastructure (Roads and connectivity).
- Livelihood Support (Storage, warehouses, and markets).
- Climate Resilience (Disaster mitigation and soil conservation).

Conclusion

- In summary, The Viksit Bharat- Guarantee for Rozgar and Ajeevika Mission (Gramin) Act, 2025, represents a decisive shift in India's rural employment policy. While MGNREGA achieved significant gains in participation, digitisation, and transparency over time, persistent structural weaknesses limited its effectiveness. The new Act builds on past improvements while addressing their shortcomings through a modern, accountable, and infrastructure-focused framework.
- By expanding guaranteed employment, aligning work with national development priorities, and embedding strong digital governance, the Act repositions rural employment as a strategic instrument for sustainable growth and resilient livelihoods, fully aligned with the **vision of Viksit**

Bharat @ 2047.

ABC of India's Minerals Diplomacy

- Today, India's clean energy transitions are impossible without **imported critical minerals and rare earths**. The country needs these minerals now, and China's tightening export controls only heighten the urgency. Just like other countries around the world, India is also committing to diversify mineral trade linkages, promote responsible production and build standards-based markets.
- As India aims for **Net Zero by 2070**, its clean energy transition depends heavily on Critical Minerals (CMs) and Rare Earth Elements (REEs).

Critical Minerals:-

- **Definition:** These are the minerals which are **essential for economic development** and **national security** but the scarcity and limitation of its geographical availability leading to supply chain vulnerability and disruption constitute its criticality.
- **Major Critical Minerals:** The Report of the Committee on Identification of Critical Minerals constituted by **Ministry of Mines** has identified **30 critical minerals**:
- Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, **PGE**, Phosphorous, Potash, **REE**, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

- **Top Producers:** According to the **International Energy Agency (IEA),** the major producers of critical minerals are:
- China (rare earths, graphite, and refining)
- The Democratic Republic of the Congo (cobalt)
- Chile (copper and lithium)
- Indonesia (nickel)
- South Africa (platinum and manganese)
- Australia (lithium)

Usage:-

- **Advanced Electronics:** They are critical for making **semiconductors** and high-end electronics

manufacturing.

- **Clean Energy Technology:** These minerals are an essential component in many clean energy technologies, from **wind turbines** and **solar panels** to electric vehicles.
- **Transport and Communications:** They are also used in manufacturing fighter jets, drones, and radio sets, Aircrafts and mainly power the transition to Electric Vehicles
- **India's Minerals Diplomacy Diverse Sectors**: To manufacture advanced technologies in diverse sectors such as mobile phones, tablets, electric vehicles, solar panels, wind turbines, fibre optic cables, and defence and medical applications.
- **Battery and Storage Technology:** These minerals are critical to develop the storage technology in terms of advancements in battery technology like Lithium-Ion.

Components of Value Chain

- Geoscience and Exploration
- Upstream: Mining and Extraction
- Midstream: Processing, Refining and Metallurgy
- Downstream: Component Manufacturing and Clean Digital Advanced Technology production Example: Zero-Emission Vehicles (ZEV) Manufacturing, Semiconductors, chips etc.
- Material Recovery and Recycling

Status of India's Mineral Ecosystem

- **High Import Dependence:** According to the Ministry of Mines, India is fully import dependent for lithium, cobalt, nickel sulphate and rare earth magnet-grade materials, which are essential for batteries and renewable energy technologies.
- **Skewed Global Strength:** India is among the top global producers of **iron ore and aluminium**, yet remains marginal in critical and strategic minerals, highlighting a structural imbalance.
- **Exploration Expansion:** The Geological Survey of India has significantly expanded critical mineral exploration, identifying lithium resources in Jammu and Kashmir and launching hundreds of targeted exploration blocks since 2021.
- **Processing Deficit:** Reports by NITI Aayog and the International Energy Agency note that India's key vulnerability lies **in limited refining** and **separation capacity**, especially for battery-grade and rare earth materials.
- **Public Investment Push:** The National Critical Mineral Mission, approved in 2025, provides long-term public funding to bridge gaps across exploration, processing and recycling.

Major Reserves of Critical and Rare Minerals in India

Sl. no.	Mineral / Category	Estimated Reserves	Major Locations in India
1.	Rare Earth Elements (REEs)	~7.23 million tonnes of Rare Earth Oxides (REO) embedded in ~13.15 million tonnes of monazite sand (containing thorium and REE minerals). India holds ~5th largest global REE reserves.	Coastal sands of Andhra Pradesh, Odisha, Tamil Nadu, Kerala, West Bengal, Gujarat, Jharkhand, Maharashtra; hard rock in Gujarat & Rajasthan.
2.	Lithium	Lithium deposits identified in inferred category; precise national reserve figures are	Inferred: Reasi district, Jammu & Kashmir (Salar-Haimana

		still being evaluated.	area).
3.	Graphite	Identified critical mineral blocks auctioned including graphite, though exact published tonnage is not centrally consolidated. Auction blocks exist across several states.	Bihar, Madhya Pradesh, Karnataka, Odisha, Tamil Nadu, Uttar Pradesh, Chhattisgarh.
4.	Cobalt & Nickel	Some cobalt resources reported, but no large commercially proven lithium/cobalt mining production yet. Commercial extraction is absent; ongoing exploration.	Ongoing survey by the Geological Survey of India (GSI) across multiple terrains; exact reserve estimates pending.
5.	Titanium-bearing Minerals **(e.g., rutile, ilmenite, zircon)**	Substantial deposits in placer sands. India is a major global source of titanium minerals in beach sands.	South and East coastal belts (Tamil Nadu, Kerala, Odisha, Andhra Pradesh, Gujarat).
6.	Other Critical Minerals (Platinum Group Elements, Vanadium, etc.)	Blocks of Platinum Group Metals (PGMs), vanadium, nickel, chromium, phosphorite etc. have been auctioned and explored, indicating presence. Precise central reserves pending comprehensive national figures.	Spread across Bihar, MP, Chhattisgarh, Odisha & other states.

Rare Earth Elements

- **Definition:** Rare Earth Elements are a group of **seventeen elements consisting of 15 lanthanides** along with **Scandium and Yttrium** which are essential for modern industrial and strategic technologies because of their **unique magnetic catalytic** and **luminescent properties**.
- **Nature of Rarity:** Rare Earth Elements are **not truly scarce** in the Earth's crust but are termed rare because they are **seldom found in concentrated and economically viable deposits** and their separation and refining processes are complex and **technology intensive**.
- **Criticality:** Rare Earth Elements are classified as critical minerals due to their high economic and strategic importance combined with limited geographical concentration of mining and processing which creates significant supply chain vulnerability and risk of disruption.
- **Major Applications:** Rare Earth Elements are extensively used in permanent magnets for electric vehicles, wind turbines and defence equipment in **phosphors for light emitting diodes** and display panels and in catalysts for petroleum refining and emission control.
- **Occurrence:** Rare Earth Elements occur in minerals such as **Monazite, Bastnaesite and Xenotime** and are found in beach sand deposits, hard rock formations and **carbonatite** complexes.
- **India Perspective:** India possesses potential resources of Rare Earth Elements particularly in monazite bearing beach sands but faces challenges related to limited processing and refining capacity environmental concerns and the development of a complete domestic value chain.

India's Import Dependency on Critical Minerals

Sl.no.	Mineral	Dependency	Primary Sources & Context
1.	Lithium	100%	Mainly Chile, Russia, and China. India recently signed a ₹200 crore deal with Argentina to secure five lithium blocks.

			Sourced from China, Belgium, Netherlands, and DR Congo.
2.	Cobalt	100%	Crucial for the cathode in NCM (Nickel–Cobalt–Manganese) -type EV batteries. Primarily from Indonesia, Sweden, and China.
3.	Nickel	100%	India has some ore reserves in Odisha, but refining capacity is limited. Sourced from Kuwait, Germany, and South Africa.
4.	Vanadium	100%	Essential for steel alloys and emerging Vanadium Redox Flow Batteries. Entirely from China, South Africa, and France.
5.	Germanium	100%	A critical component for fiber optics and night-vision equipment. Sourced from Russia, UK, and China.
6.	Rhenium	100%	Used in high-temperature superalloys for jet engines.
7.	Beryllium	100%	Fully imported; no domestic mining reported.

8.	Tantalum	100%	Fully imported : While substantial resources (16.42 million tonnes of Nb+Ta ore) exist in Rajasthan''s Rewat Hill, significant commercial production has not been established. Tantalum is vital for capacitors in smartphones and aerospace.
9.	Silicon	High	India produces some raw silicon but is heavily dependent on China, Malaysia, and Norway for high-purity polysilicon (Solar Photovoltaic grade).

Why India Needs Minerals Diplomacy?

- Minerals Diplomacy refers to the strategic use of international partnerships, alliances, and multilateral mineral clubs to secure reliable access to critical minerals (e.g., Lithium, Cobalt, Nickel, Rare Earths).
- **Energy Transition Requirements:** India's target of **500 gigawatts of non-fossil fuel capacity by 2030** will sharply increase demand for lithium, rare earth elements, copper and nickel. The International Energy Agency estimates that clean energy mineral **demand will triple by 2030.**
- **Supply Chain Concentration Risk:** Global processing of several critical minerals remains concentrated in a few countries, exposing India to export controls and geopolitical leverage, as seen in recent global restrictions on mineral trade.
- **Technological Capability Gaps:** Advanced refining, battery recycling and rare earth separation technologies are capital intensive and dominated by a few countries, making international collaboration essential.
- **Economic Stability:** Long-term mineral partnerships help reduce price volatility and supply shocks, protecting domestic industries such as electric vehicles, electronics and renewable energy manufacturing.
- **Strategic Autonomy:** Minerals diplomacy supports India's broader goals of Atmanirbhar Bharat and strategic autonomy, ensuring that future technologies are not constrained by external supply

disruptions.

- Termed the **"new oil" of the 21st century**, these minerals are the **building blocks of green technologies, semiconductors, and defense aerospace.**
- **Global South Leadership:** India is emerging as a connector and partner for mineral-rich developing countries, promoting shared value creation rather than pure extraction.
- Its **recent lithium cooperation with Namibia** emphasises local processing, skills transfer, and industrial development, offering a development-centric alternative to exploitative resource models.

India's Key Initiatives on Critical Mineral Security

Institutional Governance & Strategic Funding

- **National Critical Mineral Mission (NCMM):** A flagship mission launched in January 2025 with a total outlay of ₹34,300 crore. It acts as the "nerve center" to coordinate exploration, mining, and recycling across India.
- **Strategic Stockpiling:** The mission mandates the creation of Strategic Mineral Reserves to buffer against global supply chain shocks for essential minerals like Lithium, Cobalt, and Rare Earths.
- **Fiscal Incentives:** To lower the cost of domestic production, the government has removed customs duties on 25 critical minerals and offers 20% Capex subsidies for new processing units.

National Critical Mineral Mission

- The Government of India launched the **National Critical Mineral Mission (NCMM) in 2025** to establish a robust framework for **self-reliance** in the critical mineral sector. Under this mission, the Geological Survey of India (GSI) has been tasked with conducting 1,200 exploration projects from 2024-25 to 2030-31.
- A committee formed by the **Ministry of Mines** in November 2022 identified 30 critical minerals, with **24 included in Part D of Schedule I of Mines and Minerals Development and Regulation Act, 1957 (MMDR Act, 1957).** The inclusion of 24 critical minerals in Part D of the First Schedule of the Mines and Minerals (Development and Regulation) Act (MMDR Act) means that the Central Government now has the **exclusive authority to auction mining leases and composite licenses for these specific minerals.**
- It also recommended setting up a **Centre of Excellence on Critical Minerals (CECM)** to regularly update the mineral list and guide strategy.
- Critical minerals are essential for clean energy technologies like solar panels, wind turbines,

EVs, and energy storage systems. To secure these resources, India launched the NCMM to ensure their long-term availability and processing.

Domestic Exploration & Legislative Reforms

- **Amendments to Mines and Minerals (Development and Regulation) Act:** Recent reforms empower the Central Government to exclusively auction 24 strategic minerals. It introduced the National Mineral Exploration and Development Trust **(NMEDT),** widening the scope to include offshore and overseas exploration.
- **Exploration Licenses (EL):** A new regime designed to attract private investment for deep-seated minerals (like Nickel and Copper) that are technically difficult to mine but vital for high-tech sectors.

- **Accelerated GSI Roadmap:** The Geological Survey of India is executing **227 projects in FY2025–26**, moving beyond initial surveys to establish proven reserves in Jammu & Kashmir, Rajasthan, and Chhattisgarh.

Overseas Mineral Diplomacy & Partnerships:

- **KABIL's Global Assets:** India's joint venture, Khanij Bidesh India Ltd, has secured exclusivity rights for five lithium blocks in Argentina (15,703 hectares) and is finalizing due diligence for lithium and cobalt projects in Australia.

IREL (India) Limited, formerly known as Indian Rare Earths Limited, was incorporated on August 18, 1950. It operates under the Department of Atomic Energy since 1963. IREL began with its Rare Earths Division (RED) in Aluva (Kerala), and later expanded to mining operations in Chavara (Kerala), Manavalakurichi (Tamil Nadu), and its flagship unit, Orissa Sands Complex (OSCOM) in Odisha. Headquartered in Mumbai, it is committed to sustainable practices, ethical governance, and contributing to the global clean energy mission.

Vision: *To be a significant contributor to the global clean energy mission by providing high-quality performance-enhancing materials and operating in a socially responsible manner.*

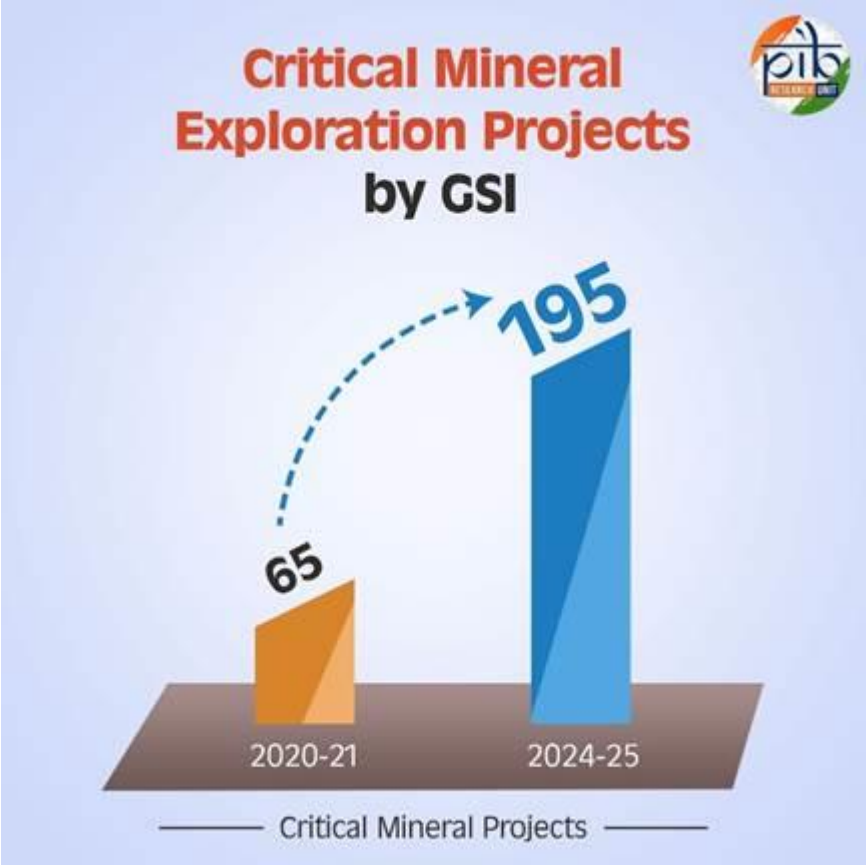
Mission: *To grow sustainably in heavy minerals and rare earths, adopt advanced technologies, prioritize customer satisfaction, empower employees, and uphold strong ethical standards.*

KABIL

- KABIL stands for **Khanij Bidesh India Limited**, a **joint venture company** that was formed to ensure a reliable supply of critical minerals to India.
- KABIL was incorporated in **2019 under the Companies Act of 2013.**
- It is a joint venture between three government enterprises:
- **National Aluminium Company Ltd. (NALCO), Hindustan Copper Limited (HCL), and Mineral Exploration & Consultancy Limited (MECL).**

- **Mineral Security Partnership (MSP):** India is the only developing nation in this **US-led elite**

club, allowing it to collaborate on ESG-aligned supply chains and access advanced extraction technologies from 13 other partner economies.



Minerals Security Partnership (MSP)

- It is a global initiative to bolster critical mineral supply chains also known as the critical minerals alliance.
- **Establishment:** The Minerals Security Partnership (MSP) was officially announced at the annual Prospectors and Developers Association of Canada (PDAC) convention in Toronto, Canada in June 2022.
- It is the largest mining event in the world.
- **Founding Members:** The United States, Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, the United Kingdom, and the European Commission
- **India joined the initiative in June of 2023**
- **Aim:** To accelerate the development of sustainable critical energy minerals supply chains via a public-private partnership to facilitate targeted financial and diplomatic support for strategic projects along the value chain.

- **The TRUST Initiative:** A strategic framework with the USA and Japan to co-finance mineral

processing and reduce reliance on geographically concentrated suppliers.

Regional Focus of India's Minerals Diplomacy

- **Australia and Africa:** Serve as key partners for upstream extraction, offering mineral abundance and scope for long-term contracts.
- **Japan and West Asia:** Emerging as potential hubs for midstream processing, refining and stockpiling, supported by technological expertise and financial capacity.
- **European Union and United States:** Crucial for downstream innovation, including advanced battery technologies, recycling systems and clean processing methods.
- **Latin America:** Identified as a future pillar for lithium, copper and nickel access, though competition from global players remains intense.
- **Russia:** Acts as a diversification option, constrained by sanctions and logistical uncertainties.

Challenges in India's Minerals Diplomacy

The Refining Gap:

- **Infrastructural Deficit:** India successfully discovers ore but lacks the high-purity refining and separation facilities required to convert raw minerals into "battery-grade" materials.
- **The Refining Trap:** For instance, while KABIL has secured lithium blocks in Argentina, the **raw brine** still necessitates foreign processing due to a lack of domestic **hydro-metallurgical capacity**, keeping India tethered to overseas value chains.

Asymmetric Geopolitical Competition:

- **Predatory Economics:** India faces oligopolistic dominance, primarily from China, which controls over 90% of global rare-earth refining.
- **Financing Hurdles:** Indian firms struggle against state-backed global giants who offer "infrastructure-for-minerals" deals. In regions like Zambia, Indian bids often face rejection due to the more aggressive, coordinated financial warfare deployed by rival powers.

Resource Nationalism & Trade Fragmentation:

- **Policy Protectionism:** Partner nations are increasingly adopting Resource Nationalism, prioritizing domestic needs.
- **Friend-shoring Challenges:** Strategic incentives like **the US Inflation Reduction Act (IRA)** often create "club-exclusivity," favoring North American production and inadvertently marginalizing Indian exports in the global green-tech market.

Geological & Environmental Constraints:

- **Low Exploration Intensity:** Only 10% of India's Obvious Geological Potential (OGP) is explored.

Deep-seated minerals remain undiscovered due to a historical lack of 3-D geophysical data and high-risk capital.

- **The ESG Litmus Test:** Aligning domestic mining with strict Global ESG (Environmental, Social, and Governance) standards is difficult.
- Projects like **the Nayakkarpatti tungsten** site face delays as **India balances tribal rights (PESA Act) and biodiversity concerns with industrial urgency.**

Way Forward

1. Developing Integrated, Value-Chain Oriented Partnerships:

- Securing raw ore is no longer the end goal; the real strategic leverage lies in controlling the Midstream Processing.
- **Upstream (Extraction):** Focus on Africa (Copper/Cobalt in Zambia, Lithium in Namibia), Australia, Canada, and Latin America (The Lithium Triangle) for long-term ore extraction and equity stakes.
- **Midstream (Refining & Separation):** Partner with Japan and West Asia (specifically the UAE and Saudi Arabia) for advanced mineral processing. These regions offer the capital and industrial infrastructure to refine raw ore into high-purity materials before they reach Indian shores.
- **Downstream (Technology & Innovation):** Collaborate with the EU and the U.S. (via the TRUST Initiative) for cutting-edge technology creation, including Next-Gen Battery Chemistries and high-efficiency Permanent Magnets.
- **The AI & Silicon Horizon:** While India is not a founding member of **the US-led Pax Silica initiative (launched in December 2025),** the January 2026 invitation by the US Ambassador marks a turning point. Joining this alliance will integrate India into the global Silicon-to-AI supply chain, linking minerals directly to semiconductor fabrication.
- **Strategic Diversification:** Maintain Russia as a critical backup partner, utilizing their vast reserves and long-standing scientific ties to diversify away from concentrated global suppliers.

2. Sovereign Support & Private Sector De-risking:

- The government is now using the ₹34,300 crore National Critical Mineral Mission (NCMM) to provide "Patient Capital" for long-term projects.
- **Risk-Sharing:** By offering Sovereign Guarantees, India aims to de-risk private sector entry into volatile overseas markets.
- **Market Certainty:** Implementing Price-Floor Mechanisms and Assured Domestic Offtake Agreements ensures that Indian refiners are protected against "predatory pricing" from global

monopolies.

- ***Japan's Model of Mineral Resilience:*** Japan exemplifies systematic, long-term, and institutional strategies for critical mineral security, developed after facing supply shocks from China.

3. Scaling the "Third Pillar"- Circular Economy:

- **Urban Mining Revolution:** With a ₹1,500 crore incentive scheme, India aims to recover 40,000+ tonnes of minerals annually by 2030.
- **Secondary Supply Base:** By formalizing e-waste and battery recycling, India can create a resilient secondary mineral supply, reducing the environmental and geopolitical cost of primary mining.

4. Diplomatic Expansion & Institutional Agility:

- **Mineral Attachés:** India should establish a dedicated Mineral Diplomacy Division within the MEA, stationing specialized Mineral Attachés in mining capitals like **Santiago and Perth** to monitor market volatility in real-time.
- **Strategic Stockpiling:** Similar to strategic petroleum reserves, India must build Sovereign Mineral Buffer Stocks of Lithium and Cobalt to insulate domestic industries from predatory pricing and export bans.

5. R&D and Material Substitution:

- **Innovation Leapfrogging:** Investing in **Sodium-ion or Zinc-air chemistries** can reduce the absolute dependency on Lithium.
- **Patenting the Future**: Linking Centres of Excellence with industry to generate 1,000+ patents by 2030 will ensure that India owns the intellectual property (IP) for the next generation of mineral processing.

Conclusion

- India's mineral diplomacy is shifting from ad-hoc imports to strategic resource planning through a two-pronged approach– building domestic capabilities while securing immediate international access. Success will hinge on operational mines, processing capacity, and resilient value chains, not merely on agreements signed.

Pax Silica and MSP: message in India's late entry

- India has joined Pax Silica, a **US-led** effort to reshape **global supply chains for semiconductors** and critical technologies. However, India entered after the initiative was largely designed, similar to its late entry into the **Minerals Security Partnership (MSP)**. This matters because Pax Silica prioritises strong manufacturing capacity, advanced processing, and ready technology ecosystems, areas where India still lags. The episode highlights a clear pattern: India is valued for strategic reasons but **lacks technological leverage,** limiting its bargaining power in US-led economic security groupings.
- India's belated induction into US-led initiatives like **Minerals Security Partnership** and Pax Silica has evoked a sense of **déjà vu** among policymakers.
- As with MSP—where **India joined a year after launch**—its entry into Pax Silica came after the initiative was already underway, seen largely as a conciliatory gesture amid efforts to steady bilateral ties.
- The significance lies in what these groupings signal about the emerging global tech order, especially as countries reorganise supply chains in strategic sectors with Chinese presence.
- Platforms like Pax Silica could shape rules by **addressing chokepoints in inputs** such as **magnets and critical mineral**s—effectively determining where leverage will sit.
- India's initial exclusion, followed by a late inclusion, carries a subtle message: strategic goodwill alone may not suffice.
- To be a partner of first choice in US-led initiatives, India must be seen as bringing **tangible capabilities and value** to the table in shaping resilient, rules-setting supply chains.

About Pax Silica

- Pax Silica is a US-led strategic initiative aimed at countering China's dominance in next-generation technologies.
- It seeks to reduce "coercive dependencies" and protect materials and capabilities foundational to artificial intelligence, enabling aligned nations to develop and deploy transformative technologies at scale.

Objectives and Scope

- According to the US State Department, Pax Silica is designed to build a secure, prosperous, and innovation-driven silicon supply chain.
- **Strategic concept:** Spanning critical minerals → energy → advanced manufacturing →

semiconductors → AI infrastructure → logistics

- It aims to ensure access across the entire AI stack—from critical minerals and semiconductor chips to security and logistics infrastructure.

Long Term Framework

- Unite countries hosting advanced tech companies to unleash the economic potential of the new AI age
- Establish a durable economic order to drive AI-powered prosperity across partner nations

Key Thrust Areas Under Pax Silica

Under Pax Silica, participating countries aim to:

- Pursue joint ventures and strategic co-investments
- Protect sensitive technologies and critical infrastructure from undue foreign control
- Build trusted technology ecosystems spanning ICT systems, fibre-optic cables, data centres, foundational AI models, and applications

Founding Members and Their Strengths

- The inaugural Pax Silica Summit brought together **Japan**, the **Republic of Korea**, **Singapore**, the **Netherlands**, the **United Kingdom**, **Israel**, the **United Arab Emirates**, and **Australia**.
- These countries collectively host key companies and investors that power the global AI and semiconductor supply chain, reflecting their technological or resource-based leverage.

Why India Was Initially Excluded from Pax Silica?

- Pax Silica aims to secure supply chains spanning critical minerals, energy inputs, advanced manufacturing, and semiconductors.
- India's initial absence reflects perceptions that it lacks decisive edge technologies or control over key resources central to the grouping's objectives.

How does Pax Silica compare with other member countries?

- **The Netherlands:** controls specialised **lithography machines** vital for chipmaking.
- **Australia:** contributes **critical mineral reserves** and **mining capabilities**.
- **Japan and South Korea:** Strong semiconductor fabrication and equipment manufacturing base.
- **Taiwan:** Global leadership in advanced chip manufacturing.
- **Singapore:** Critical logistics, processing hubs, and supply-chain integration.
- **Israel:** Advanced innovation ecosystems and high-end R&D capabilities.

- **UK:** Offers strengths in **services and technology**.
- **UAE:** The UAE has rapidly built AI capabilities and **supporting infrastructure**.
- **India:** Emerging manufacturing base but insufficient scale and specialization.

A Familiar Pattern from MSP

- A similar logic shaped the initial membership of the Minerals Security Partnership, where early partners included countries with clear mineral, technology, or institutional advantages.
- India joined later, despite its efforts to position itself as a node in global supply-chain realignment as firms diversify away from China.

What does India's late entry into Pax Silica indicate?

- **Timing disadvantage:** Signals entry after agenda-setting was completed, limiting India's ability to shape rules or priorities.
- **Pattern repetition:** Reflects earlier experience with MSP, where India joined after core structures were in place.
- **Diplomatic signalling:** Indicates conciliatory outreach by the US rather than proactive Indian leverage.

Why is India seen as lacking a 'critical edge'?

- **Manufacturing depth:** Absence of large-scale advanced semiconductor fabrication capacity.
- **Processing capability:** Limited expertise in high-end chip processing and precision manufacturing.
- **Ecosystem gaps:** Weak integration of research, fabrication, and supply-chain logistics.

Why does Pax Silica matter?

- **Strategic objective:** Restructures semiconductor and advanced manufacturing supply chains away from China.
- **Economic coercion control:** Reduces vulnerability to Chinese leverage in global chip production.
- **Technology governance:** Aligns partner countries on standards for AI, semiconductors, and digital infrastructure.

Why does this matter for India's foreign and economic policy?

- **Reduced bargaining power:** Late inclusion weakens India's ability to demand concessions.
- **Capability-first diplomacy:** Demonstrates that geopolitical alignment alone is insufficient.

- **Strategic lesson:** Economic security partnerships increasingly reward technological readiness, not political intent.

The Takeaway for India

- The common thread among the founding members is a tangible lead in AI or semiconductor supply chains—an area where India currently lacks comparable processing capacity and expertise.
- As with earlier initiatives such as the MSP, this gap explains India's absence at the outset.
- The exclusion underscores a consistent message: entry into US-led strategic groupings hinges on **demonstrable capabilities and leverage**—not just intent.
- To be a first-choice partner, India must strengthen its control over critical inputs, technologies, or platforms that shape supply-chain rules.

Shared Challenge: China's Critical Minerals Dominance

- Experts point out that China's dominance in critical minerals has created sharp global price gaps, disadvantaging non-Chinese supply chains.
- While this opens space for India to attract US investment, it also raises risks of Chinese coercion as India deepens alignment with Washington.
- US Treasury Secretary Scott Bessent framed China's export controls **as "China versus the rest of the world,"** calling for support from Europe, India, and Asian democracies.
- Despite this rhetoric and shared concerns, India remained outside Pax Silica's initial list, underscoring a gap between strategic alignment and perceived capabilities

Conclusion

- India's entry into Pax Silica underscores a structural challenge in its external engagement: strategic relevance without commensurate technological capacity. The episode reinforces that future influence in global groupings will depend less on diplomatic goodwill and more on domestic manufacturing strength, processing expertise, and ecosystem maturity.

PYQ Relevance -

[UPSC 2024 Mains]

- "The West is fostering India as an alternative to reduce dependence on China's supply chain and as a strategic ally to counter China's political and economic dominance." **Explain this statement with examples.**

[UPSC 2025 Prelims]

Consider the following statements:

I. India has joined the Minerals Security Partnership as a member.

II. India is a resource-rich country in all the 30 critical minerals that it has identified.

III. The Parliament in 2023 has amended the Mines and Minerals (Development and Regulation) Act, 1957 empowering the Central Government to exclusively auction mining lease and composite license for certain critical minerals.

Which of the statements given above are correct?

(a) I and II only

(b) II and III only

(c) I and III only

(d) I, II and III

Repatriation of Piprahwa Relics and the Diplomacy of Peace

- Inauguration of **"The Light and The Lotus: Relics of the Awakened One",** and the recent repatriation of priceless Buddhist relics highlights India's soft power.
- The Prime Minister of India inaugurated "The Light and The Lotus: Relics of the Awakened One", an international exposition of the sacred Piprahwa relics associated with Lord Buddha in New Delhi this month. The site is widely identified with ancient **Kapilavastu,** associated with the early life of Gautama Buddha.
- The event coincided with the recent repatriation of priceless Buddhist relics that had been taken out of India during the colonial period and were nearly auctioned abroad.
- The episode highlights India's approach to cultural diplomacy, heritage protection, repatriation of antiquities, and Buddhist soft power.

Significance of the PM's Message

Strength with humanity:

- The PM emphasised that strength is necessary against "enemies of humanity", but dialogue and peace are essential where disputes exist.
- This reflects India's foreign policy doctrine of strategic restraint combined with moral leadership.

Buddha's philosophy as India's core worldview:

- Buddha's idea of **"walking together instead of conflict and dominance"** was described as India's guiding philosophy in the 21st century.

- The principle of **"Sarvajan Hitaya, Sarvajan Sukhaya"** (welfare and happiness of all) was reiterated as India's civilisational ethos.

Piprahwa Relics – Historical Background

- Excavated in **1898 by William Claxton Peppé** from a Buddhist stupa at Piprahwa (Siddharthnagar district, Uttar Pradesh), near Nepal.
- **Include:** 349 gemstones (pearls, rubies, sapphires, topaz, gold sheets). Bone fragments and ash believed to be of Lord Buddha. Reliquaries, sandstone coffers, soapstone and crystal caskets.

Colonial-era dispossession:

- Under the **Indian Treasure Trove Act, 1878**, the British Crown claimed most relics.
- A portion remained with the Peppé family and was held privately for over 127 years.
- **Rescue from Auction and Repatriation (2025)**

Threat of auction:

- Sotheby's Hong Kong listed the relics for auction in 2025, with an estimated value of over $100 million.
- The relics were treated as "antique collectibles", ignoring their religious and civilisational value.

India's response:

- The Ministry of Culture issued a legal notice demanding cessation of the auction.
- Asserted that the relics are inalienable religious and cultural heritage protected under Indian law and international conventions.
- Archaeological Survey of India (ASI) and diplomatic channels were activated.

Innovative resolution:

- Godrej Group purchased the collection. Relics were returned to India, and loaned to the National Museum for five years.
- This avoided ethical issues of the State commercially purchasing sacred antiquities.

Shared Buddhist Heritage and India's Soft Power

Global spiritual connect:

- Relics inspired millions of devotees during exhibitions in Thailand, Mongolia, Vietnam, Russia, etc.
- The PM noted that Indian officials were respected globally as representatives of the **"Land of Buddha".**

Symbolic diplomacy:

- India gifted Bodhi tree saplings to countries such as China, Japan, Korea, Mongolia.

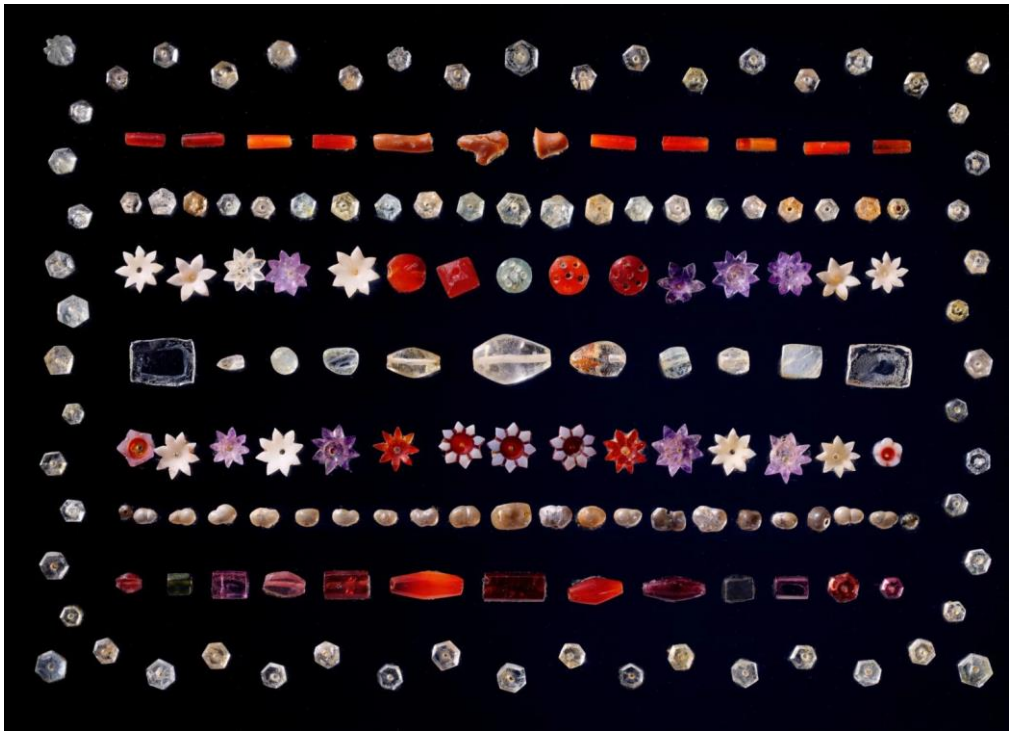
- Special mention – A Bodhi tree in Hiroshima, symbolising peace after nuclear devastation.
- Preservation of Buddhist Heritage

International efforts:

- Restoration of **11 pagodas in Bagan (Myanmar).**
- Assistance to Nepal after earthquake damage to heritage sites.

Domestic initiatives:

- Development of a Buddhist Circuit connecting key pilgrimage sites.
- Promotion of Pali as a classical language.
- Infrastructure projects to improve accessibility and conservation of Buddhist sites.



Challenges associated with the piprahwa relics and their exhibition

- **Colonial legacy of museum practices:** Indian museums continue to be influenced by colonial traditions that prioritise static display, visual consumption, and objectification, often ignoring the sacred and **living dimensions of religious relics**.
- **Balancing sacred use and scientific conservation:** A major challenge lies in reconciling devotional practices such as prayer, chanting, and proximity with modern conservation standards that emphasise controlled environments and minimal handling.
- **Institutional and human resource constraints:** Many cultural institutions lack trained

interdisciplinary professionals, including experts in heritage ethics, anthropology, conservation science, and public interpretation, limiting holistic relic management.

- **Commercialisation of sacred objects by auction houses:** Balance legal, ethical, and spiritual considerations in recovery efforts.

- **Limited enforceability:** Of UNESCO conventions for pre-1970 removals. Create a comprehensive global database of stolen/alienated Indian antiquities. Expand cultural diplomacy through Buddhism, yoga, and civilisational narratives.
- **Legal and regulatory gaps**: Existing heritage laws are often outdated and fragmented, making it difficult to address contemporary concerns such as restitution, ethical display, and cross-border cultural claims.
- **Risk of illicit trafficking:** High-value relics remain vulnerable to smuggling networks and organised crime, particularly in the absence of strong surveillance, documentation, and community participation.

Conclusion

- The return of the Piprahwa relics is more than a recovery of antiquities—it is a civilisational reclamation.
- By blending moral authority, legal assertion, cultural diplomacy, and innovative partnerships, India has reaffirmed its role as the custodian and living carrier of Buddha's legacy.
- The episode reinforces India's global image as a nation that seeks peace through dialogue, strength

with restraint, and unity through shared heritage—a message deeply relevant to both contemporary geopolitics and India's ancient wisdom

SIR should be completely digitised?

- The ongoing Special Intensive Revision (SIR) 2.0 has sparked nationwide concern due to widespread voter distress, manual procedural delays, and the summoning of eminent citizens to prove residency despite the availability of advanced digital infrastructure.
- It highlights a critical mismatch between the Election Commission's (EC) digital capabilities **(ECINet)** and the ground-level reliance on error-prone paper-based hearings.

What is SIR Verification Digitization?

- Digitizing SIR verification refers to the transition from manual, paper-based field inquiries and physical hearings to an automated, audit-ready digital workflow.
- It involves using **the ECINet platform** for backend cross-verification of identity documents, real-time status updates via SMS/Email, and online document uploading to eliminate the need for voters to appear physically before electoral officers.

What is Special Intensive Revision (SIR)?

- SIR refers to a large-scale, **intensive revision of electoral rolls** by the Election Commission of India under its constitutional and statutory powers. Usually triggered in anticipation of high-stakes elections or when the rolls have remained largely unchanged for years, the SIR involves steps such as fresh enumeration forms, house-to-house verification by Booth Level Officers (BLOs), document verification of voters, deletion of ineligible entries, and inclusion of those omitted. The SIR 2025 in Bihar, where more than 8 crore voters were to be re-verified, is the latest example.

Key facts:

- The legal basis lies in Article 324 of the Constitution (superintendence, direction and control of elections) and **Section 21(3) of the Representation of the People Act, 1950**, which allows the Commission to carry out "special revision of the electoral roll."
- The objective is to include every eligible citizen (18+ years) and to remove duplicates, deceased persons, ineligible entries and correct errors like wrong names or addresses.
- It is not simply a summary revision but combines features of a full enumeration (intensive revision) and summary updates, hence the nomenclature "Special Intensive"

Key Features of Special Intensive Revision (SIR)

- **Cleaning of Rolls:** Aims to remove duplicate, shifted, and deceased voters to ensure one citizen, one vote.
- **Inclusion of New Voters:** Focuses on registering first-time voters and eligible residents who were previously left out.
- **Correction of Legacy Errors:** Intended to fix inconsistencies originating from the 2002-04 rolls, such as non-mapped voters.
- **Enumeration Forms (EF):** Use of specific forms to collect updated demographic and residency data from every household.
- **Audit Trails:** Built-in digital tracking within ECINet to monitor the progress of applications from submission to final approval.

Special Intensive Revision Legal Framework

The legal and constitutional basis for SIR is critical for understanding its authority and challenges:

- **Article 324 (1):** Grants the ECI superintendence, direction and control of elections to Parliament and State Legislatures.
- **Article 326:** Guarantees adult suffrage to all citizens aged 18+ for elections to Lok Sabha and State Assemblies.
- **Representation of the People Act, 1950, Section 16 and 19:** Sets out criteria for voter eligibility (citizen, 18+, ordinary resident). Section 21(3) empowers the ECI to order special roll revision.
- **Registration of Electors Rules, 1960:** Specifies procedures for enrolment, revision, etc. Some legal commentators note that **the term "Special Intensive Revision" itself is not explicitly present** in the Rulebook, raising questions of nomenclature and procedural clarity.

Special Intensive Revision Process

- The SIR process involves several distinct phases and features which differentiate it from routine roll updates:
- **Notification & Planning:** The ECI issues notification specifying qualifying date (e.g., July 1, 2025 in Bihar).
- **House-to-House Enumeration:** BLOs visit every house in assigned polling booth area and distribute pre-filled "Enumeration Forms" to existing electors and new eligible persons.
- **Submission of Documents:** For voters enrolled after a certain past date (e.g., Jan 2003 in Bihar SIR)

proof of date/place of birth and parentage is required. This is stricter than earlier frameworks.

- **Verification & Deletions/ Additions:** EROs scrutinise the submissions, identify deaths, duplicates, migration, ineligible voters and remove them; simultaneously new inclusions are processed. For example in Jaipur, 741 new polling booths were to be created under SIR to accommodate changes.
- **Draft Publication & Objections:** A draft roll is published, objections entertained, grievance redressal mechanism applied. The Supreme Court directed ECI to publish details of deleted names in the Bihar SIR litigation.
- **Final Roll & Freeze:** The final roll is constituted and frozen for ensuing election. Additions/deletions after that are restricted to special cases

Need for Digital Special Intensive Revision

- **Accuracy and Integrity:** Manual processes are prone to human error; digital cross-referencing with existing databases (like Aadhaar) ensures higher data sanctity.
- **Reducing Citizen Hardship:** Digitization removes the need for physical summons and long queues, especially for the elderly, monks, and professionals.
- **Addressing the Non-Mapped Crisis:** Over 10 million voters in states like UP are flagged as non-mapped; digital uploading can resolve these discrepancies in minutes rather than weeks.
- **Preventing Legal Risks:** Currently, deleted voters must use Form 6 (meant for first-timers), forcing them to make factually incorrect statements that risk criminal liability under BNS 2023.
- **Real-time Transparency:** Digital systems allow voters to track their status and receive instant acknowledgments, reducing anxiety and procedural indignity.

Challenges Associated with SIR 2.0:

- **Reliance on Flawed Legacy Data:** The 2002-04 rolls, which were manual and lacked third-party checks, still form the foundation of current rolls.
- **Data Inconsistencies:** Significant gaps exist between different records.
- E.g., the 13-million-voter discrepancy between Panchayat and SIR rolls in UP.
- **Digital Divide:** Vulnerable sections and rural populations may struggle with online uploads without the active assistance of Booth Level Officers (BLOs).
- **Institutional Resistance:** A choice in enforcement where authorities prefer coercive manual hearings over streamlined digital workflows.
- **Mass Deletions:** Allegations of nearly 65 million genuine voters being deleted nationwide without adequate notice or verification.

Way Forward

- **Notify and Update:** The EC must notify every applicant of their form status (accepted/flagged) via SMS and EPIC-linked accounts immediately.
- **Backend Integration:** Connect ECINet with other government databases for automatic document authentication, similar to Aadhaar-based KYC.
- **Hybrid Support Model:** Utilize BLOs to assist digitally illiterate voters in uploading documents at their doorstep or nearby kiosks.
- **Policy Correction:** Amend the process so that restored voters are not forced to file first-time applications (Form 6), thus protecting them from legal jeopardy.
- **Real-time Draft Updates:** Transition to a system where draft rolls are updated in real-time as digital verification is completed.

Conclusion:

- The sanctity of the electoral roll is the bedrock of a healthy democracy; however, it must be achieved without compromising the dignity of the citizen. By shifting from suspicion-based manual hearings to a trust-based digital infrastructure, the Election Commission can ensure a clean roll that is both inclusive and accurate. Ultimately, technology must be used not just as a tool for administration, but as a safeguard for public trust and democratic participation.

National Programme on ACC Battery Storage - Current status

- According to the Institute for Energy Economics and Financial Analysis (IEEFA) South Asia and JMK Research, the Production Linked Incentive (PLI) scheme for **Advanced Chemistry Cell (ACC)** battery storage has achieved only 2.8% of its targeted manufacturing capacity in four years.

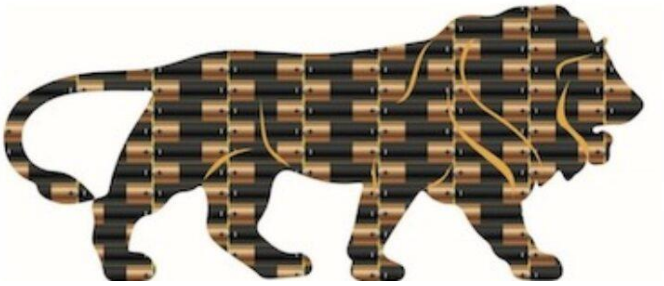
What is Production Linked Incentive (PLI) scheme for Advanced Chemistry Cell (ACC) Battery Storage?

- It is also known as the **National Programme on ACC Battery Storage**, is part of ''Make in India'' and the clean energy strategy.
- **Objectives:** Launched in 2021 by the **Ministry of Heavy Industries**, to reduce import reliance, especially on China, by strengthening the domestic ecosystem for electric mobility and grid energy storage.
- **Budgetary Outlay: ₹18,100 crore**
- **Primary Target:** To establish 50 Gigawatt-hours (GWh) of domestic ACC manufacturing capacity.

What are Advanced Chemistry Cells (ACC)?

- They represent a new generation of advanced storage technologies that can **store electric energy as chemical energy and convert it back to electric energy** as and when required. Lithium-ions — the mainstay of cellphone batteries — are the most prominent today among this class of batteries. However, the scheme is "technology agnostic" and is open to other combinations such as nickel manganese cobalt, lithium-ion phosphate and sodium-ion batteries.

NATIONAL PROGRAMME ON ADVANCE CHEMISTRY CELL (ACC) BATTERY STORAGE



Key Mandates for Beneficiaries:

- Achieve a minimum **Domestic Value Addition (DVA)** of 25% initially, scaling up to 60% within five years.
- Make a mandatory investment of ₹225 crore per GWh of committed capacity within a two-year period.

Current Status and Progress (Source: IEEFA & JMK Research)

Metric	Target	Achievement (as of late 2025 reporting)	Percentage Achieved
Manufacturing Capacity	50 GWh	1.4 GWh (Commissioned	2.8%

		entirely by Ola Electric)	
Investment Mobilized	₹11,250 crore	₹2,870 crore	25.6%
Job Creation	1.03 million	1,118 jobs	0.12%
Incentive Disbursal	₹2,900 crore (planned)	Zero	0%

Challenges Hindering the Scheme''s Success

- **Stringent Domestic Value Addition (DVA) Norms:** Requirement to achieve 25% DVA quickly and scale it to 60% is a major challenge for new entrants in a nascent Indian component ecosystem.
- **Aggressive Timelines:** A **two-year period** to establish complex manufacturing facilities has proven too ambitious, compounded by procedural delays like obtaining visas for technical experts.
- **Flawed Evaluation Criteria:** Bidding process favored new entrants over experienced battery makers like Exide, who failed to qualify due to higher weightage given to DVA commitments and subsidy quotes.
- **Lack of technical skill:** Finally, India's dependency on China for raw material, technical competency and knowhow has led to sluggish progress. A major bottleneck is the delay in visa approvals for Chinese technical specialists, as India lacks skilled workforce for cell manufacturing.

Way Forward:

Adopt a Holistic Value-Chain Approach

- Move beyond just cell manufacturing. Introduce dedicated incentive schemes for critical mineral sourcing, refining, component manufacturing, and recycling infrastructure.

Re-evaluate Timelines and Penalties

- Extending timelines and providing temporary relief from penalties to give beneficiaries the necessary time to overcome initial hurdles.

Attract Global Expertise

- Create a more favorable environment for established global battery manufacturers to invest and facilitate technology transfer.

Strengthen Ancillary Infrastructure

- Invest in robust cell testing and certification facilities and launch focused programs for skill development and R&D.

Implement Calibrated Tariff Protection

- Use measures like Basic Customs Duty (BCD) to protect the nascent domestic industry from unfair competition and predatory pricing.

Lessons from Global Best Practices

Country/Region	Core Strategy	Key Features
China	Holistic Ecosystem Development	Dominates the entire value chain, from mineral refining to component manufacturing. Domestically produced **79% of the world''s natural graphite** in 2024.
United States	Strong Financial Incentives	**The Inflation Reduction Act (IRA)** offers tax credits and subsidies to boost domestic production and attract global manufacturers.
European Union	Regulatory Framework for Circular Economy	Mandates stringent battery collection, recycling efficiency, and recycled content. **By 2031, new batteries must contain at least 16% recycled cobalt and 6% recycled lithium.** (Source: European Commission).

Conclusion

- The ACC PLI scheme, vital for India''s energy security and ''Aatmanirbhar Bharat,'' is failing due to design flaws that underestimated the complexity of establishing a battery manufacturing ecosystem. To achieve self-reliance in the global battery market, India needs a strategic reset focusing on the entire value chain, realistic timelines, and a supportive environment.

State of Finance for Nature 2026

- The United Nations Environment **Programme (UNEP)** released the State of Finance for Nature 2026 report, warning that nature-negative finance (US$7.3 trillion) vastly outweighs nature-positive investment (US$220 billion).

State of Finance for Nature 2026:

- The State of Finance for Nature (SFN) 2026 is the fourth edition of a flagship report that tracks global capital flows related to nature.
- It provides a financial assessment to help policymakers and businesses transition from an economy that erodes its nature bank account to one that invests in **Nature-based Solutions (NbS)**—actions that protect, restore, and sustainably manage ecosystems to address societal challenges

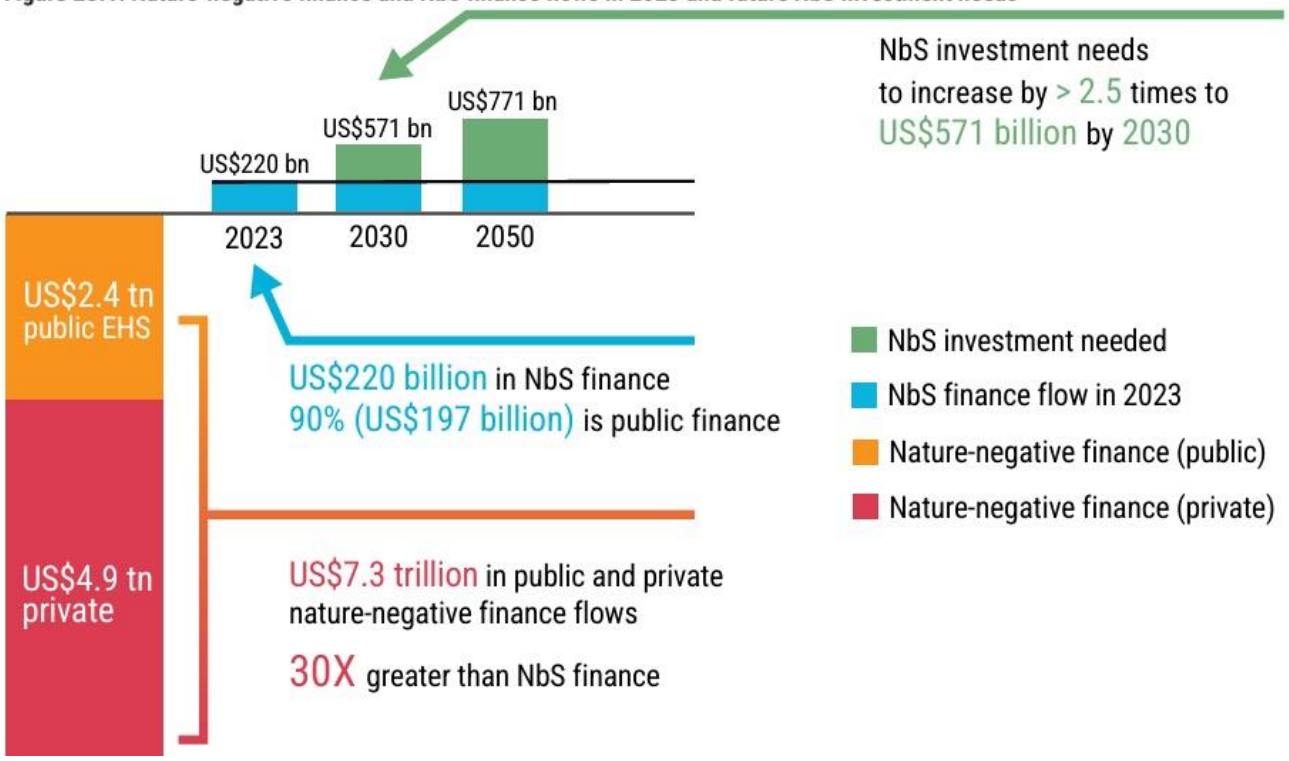
Key Findings in the Report

- **Massive Finance Gap:** To meet global **Rio Convention** targets, NbS investment must increase 2.5 times to US$571 billion annually by 2030.
- **Nature-Negative Dominance:** Annual finance flows harming nature reached US$7.3 trillion in 2023, representing roughly 7% of global GDP.
- **Public Subsidies:** Governments provided US$2.4 trillion in environmentally harmful subsidies (EHS), primarily for fossil fuels (US$1.13 trillion), followed by agriculture and water.
- **Private Sector Impact:** Private capital flows to nature-negative sectors totaled US$4.9 trillion, concentrated in utilities, industrials, and energy.
- **Public Finance as Main NbS Driver:** Of the US$220 billion in NbS finance, 90% (US$197 billion) comes from public sources, mostly through domestic expenditure.
- **Slow Private NbS Growth:** Private investment in NbS is only US$23.4 billion, with biodiversity

offsets and certified commodity supply chains being the largest contributors.

- **Interdependence of Risks:** At least half of the global economy is moderately or highly dependent on nature, making the nature crisis a direct threat to financial stability.

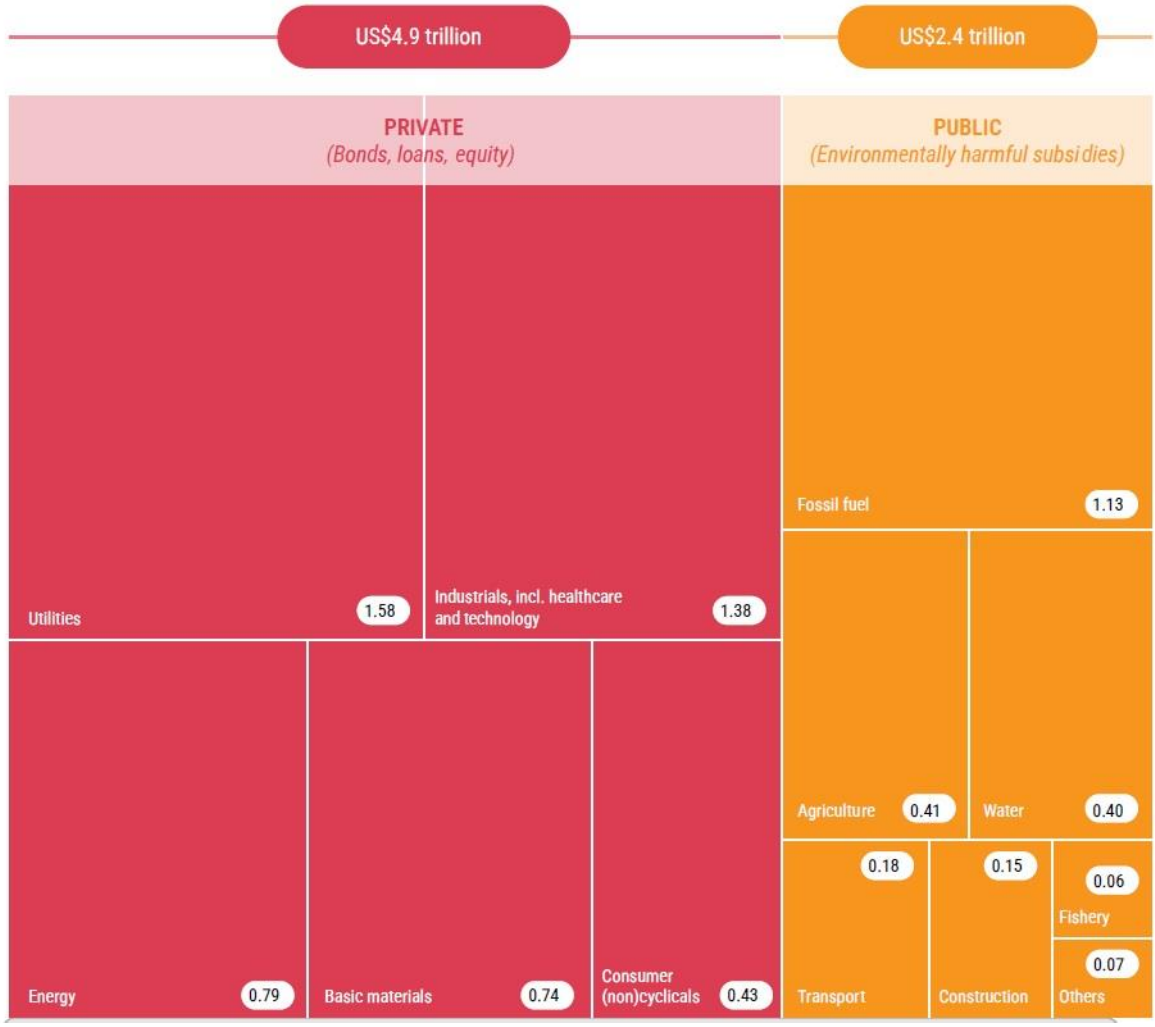
Figure ES.1: Nature-negative finance and NbS finance flows in 2023 and future NbS investment needs



Success:

- **Debt-for-Nature Swaps (DNS):** Restructured debt to unlock conservation funds.
- E.g. Eight agreements from 2021–2024, including deals in Ecuador, Belize, and Gabon, unlocked significant funds for local conservation.
- **Sustainable Bonds for Biodiversity**: Growth in debt instruments with nature-focused Use of Proceeds.
- E.g. United Utilities (UK) issued a GBP 300 million bond for peatland and riverbank restoration.
- **Innovation in Real Economy Sectors:** Using nature to replace harmful industrial processes.
- E.g. Use of bacteria-infused self-healing concrete to extend building life and fungi-based leather in apparel.

Figure ES.2: Nature-negative finance flows of 7.3 trillion in 2023 (trillion US$)



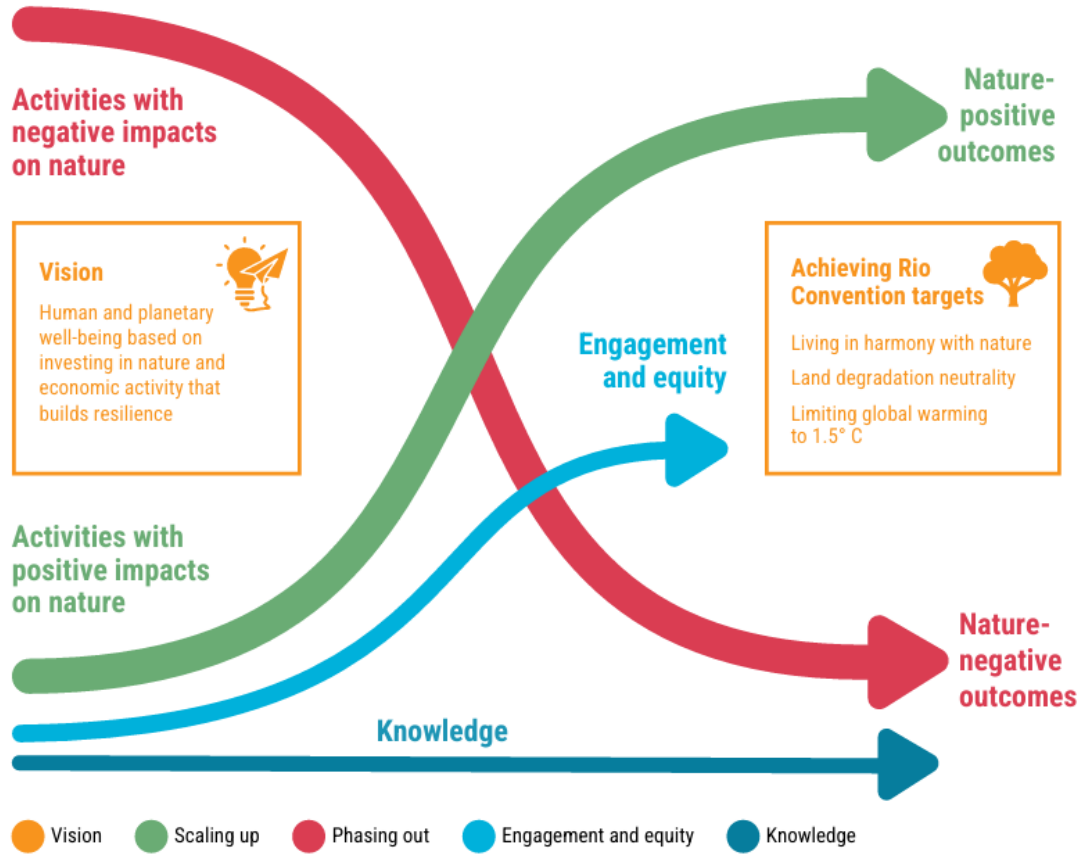
- **Increasing Disclosure Adopters:** Global financial institutions are beginning to track nature-related risks.
- E.g. Over 730 organizations have adopted the Taskforce on Nature-related Financial Disclosures (TNFD) framework.

Failures:

- **Persistence of Harmful Subsidies:** Global failure to repurpose trillions in EHS that drive degradation.
- E.g. India continues to provide significant fertilizer and power subsidies for agriculture, which can lead to groundwater depletion and soil degradation if not managed sustainably.
- **Biodiversity Offset Implementation Gaps:** Offsets often fail to provide genuine net gains due to weak enforcement.

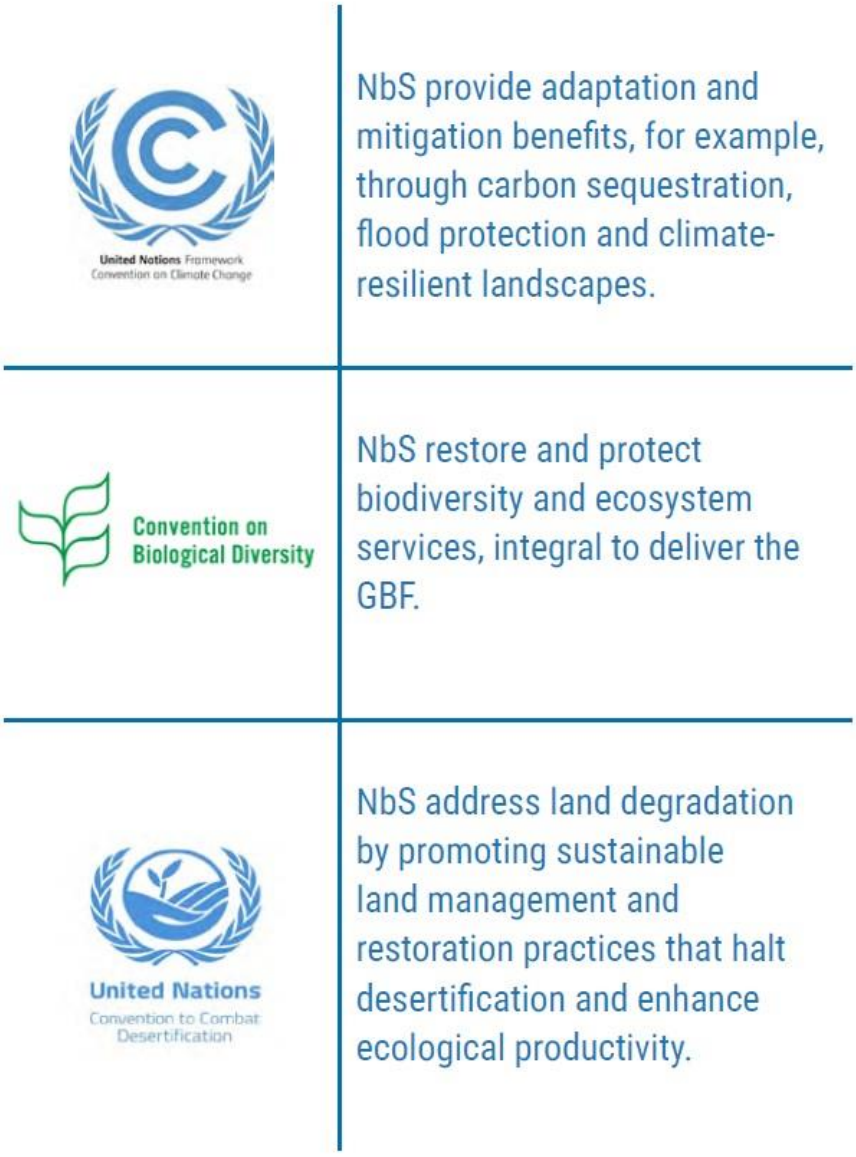
- E.g. India's National Compensatory Afforestation (CAMPA) is one of the world's largest offset markets (US$0.86 billion), yet it faces challenges in ensuring that new plantations effectively replace the complex biodiversity lost to development.

Figure ES.4: Transition pathways to nature-positive outcomes



- **Inadequate Private Capital Mobilization:** Private NbS finance remains a tiny fraction of what is needed.
- E.g. Despite India's massive renewable energy push, private debt finance for nature-positive restoration projects lags behind traditional infrastructure lending.
- **Erosion of Regulatory Standards:** Weakening of environmental laws in some jurisdictions creates uncertainty.
- E.g. Recent amendments to forest and environmental clearance rules have been critiqued for potentially easing industrial expansion at the cost of sensitive ecological zones.
- **Underfunded International Cooperation (ODF):** International public finance for NbS is under heavy pressure.
- E.g. As a nature-rich developing nation, India requires massive concessional international finance

to meet 30×30 goals, but ODF flows remain insufficient compared to the country's conservation needs.



Recommendations

- **Reform Subsidies:** Redirect the US$2.4 trillion in harmful public subsidies toward regenerative agriculture and clean energy.
- **Mandatory Disclosure**: Enact laws requiring all large companies and financial institutions to disclose nature-related risks and impacts.

- **Scale Blended Finance:** Use public funds to de-risk private investments in NbS through guarantees and co-financing.
- **Integrate NbS into Budgets:** Embed nature-based infrastructure into national fiscal frameworks and green budgeting.
- **Ensure Equity:** Protect the rights of Indigenous Peoples and Local Communities, ensuring they are co-creators and beneficiaries of nature finance.

Conclusion:

- The 2026 report serves as a final warning that the **global economy is in the red**, with a **30:1 bias toward destroying nature** rather than protecting it. Achieving a nature-positive future requires an urgent Big Nature Turnaround to repurpose US$7.3 trillion in harmful flows into a trillion-dollar transition economy. Only by embedding nature into every financial and governmental decision can we safeguard the ecosystems that underpin all human well-being and economic growth.

The Davos Man, and the end of an illusion

- The current international system is undergoing a profound, non-linear transformation from a US-led, **post-1945 "liberal world order"** towards a more fragmented, multipolar, and contested system. This shift is characterized by the erosion of multilateral institutions, the rise of regionalism, and a transition from a rules-based order to a power-based, **"self-help" era**.
- Upon this background **"The Davos Man, and the end of an illusion"** refers to a pivotal shift in global politics and economics, most recently highlighted during the **2026 World Economic Forum (WEF)**. It marks the transition from a world of hyper-globalization to one defined by economic nationalism and the breakdown of the post-WWII international order.

The Origin of "Davos Man"

- The term was coined by political scientist **Samuel Huntington** to describe a global elite—billionaires, CEOs, and high-ranking officials—who see themselves as international citizens. This group has long championed the "illusion" that global integration and open markets would inevitably lead to universal prosperity and peace.

Key Drivers of the Changing World Order

- **Decline of US Hegemony & "America First":** The United States is increasingly shifting from

fostering a globalized, rules-based system to a policy of **"offshore balancing"** and protectionism, creating a power vacuum and signaling the end of the post-1989 Washington consensus**.**

- **Rise of Revisionist Powers & The "Global South": Countries like China, Russia, India, and Brazil are challenging the Western-dominated order.** The rise of China as a military and economic power, coupled with its expansionism, is directly destabilizing regional and global institutions.
- **Dysfunctional Multilateralism:** Global institutions like the **UN and the World Trade Organization (WTO)** are increasingly ineffective in managing global threats, exemplified by the weakening of the WTO's dispute settlement mechanism.
- **Polycrisis & Geopolitical Rivalry:** Simultaneous, interconnected crises—including the Russia-Ukraine war, trade wars, cyber warfare, and the COVID-19 pandemic—have fragmented global cooperation.
- **Rise of Alternative Forums:** The emergence of groupings **like BRICS to BRICS+ and the SCO (Shanghai Cooperation Organization)** aims to reduce over-reliance on traditional **Western powers** and create new economic and development foundations.

Characteristics of the Emerging "New" Order

- **Multipolarity & Fragmentation**: The world is moving away from unipolarity toward a "hybrid" system with diverse regional actors, resulting in a more contested and less integrated global landscape.
- **Strategic Self-Help:** Nations are prioritizing national interests over international cooperation, leading to increased protectionism and nationalism.
- **Geoeconomic Fragmentation:** There is a notable shift toward "reshoring," increased tariffs, and the weaponization of trade policy.
- **Civilizational Assertiveness:** Emerging powers are invoking their own histories and cultures to shape foreign policy, moving away from **Western-centric ideologies.**

The End of the Illusion: Key WEF Discussion Developments

- The phrase has gained renewed significance following a landmark speech by Canadian Prime Minister Mark Carney at Davos in January 2026.
- **The "Havel" Moment:** Invoking former Czech leader Vaclav Havel's words about the communist system, Carney said we were "living within a lie." Carney compared the current global state to Václav Havel's "living within a lie," and said "The illusion begins to crack." stating that the world

can no longer pretend that the old rules-based order is functioning .

- **The Breakdown of Order:** He noted that while American hegemony once provided stability, the gaps between rhetoric (mutual benefit) and reality (subordination through integration) have become too wide to ignore.
- **Nationalism vs. Globalism:** The "illusion" that global institutions like the WTO or UN could solve all crises is fading as "Nationalist Man" replaces "Davos Man". Nations are increasingly turning toward protectionism and "fortress" economies. (De-Dollarisation for example)

Critical Perspectives

- **"Davos Man: How the Billionaires Devoured the World":** Journalist Peter S. Goodman's book argues that this elite group has prioritized wealth accumulation over public services, exacerbating the inequality that now threatens the very system they built.
- **Wealth Inequality:** Reports from Oxfam highlight that the world's richest men doubled their fortunes during the pandemic while billions grew poorer, fueling the sense that the Davos consensus was an illusion that only served the 1%.

The 'World Minus One' moment

- Popularized by observers including former Singaporean Prime Minister Lee Hsien Loong in July 2025 and analyzed by scholars like Amitav Acharya, this concept highlights a shift where the U.S. retreats from the multilateral, rules-based order it once created.

Key aspects of this moment include:

1. **"World Temporarily Minus One":** Lee Hsien Loong described this as a, or perhaps temporary, situation where global trade and economic management continue, but the U.S. acts outside that system.
2. **Decoupling/De-Americanization:** Global trade is bypassing the U.S. obstacle, with international partners deepening ties via other agreements, such as the Regional Comprehensive Economic Partnership (RCEP).
3. **"Indispensable Rogue":** The U.S. is viewed less as the leader and more as a detached or hostile power that has broken faith in providing global public goods, noted by Amitav Acharya in Foreign Policy.
4. **Rise of "The Rest":** The shift is leading to a more multipolar world where other nations strive to keep the system alive in anticipation of a potential U.S. return to multilateralism.
5. **Strategic Diversification:** Companies and nations are focusing on creating supply chains that are

resilient to U.S. tariff-driven, transactional trade policies.

- The term is used to describe a "new world order" where global governance, climate action, and trade proceed despite, rather than with, American involvement.

The Way forward

1. Striving for a more pluralistic order : one that offers countries greater flexibility and choice. Such an order would allow nations to develop cooperation with a variety of others — far and near, regional, inter-regional and global — while not sacrificing their engagement with the UN and other multilateral bodies.

2. Regional Complement: Rising powers like India and middle powers like Canada need to develop a variety of platforms, while making sure they complement, rather than undercut each other. One example is the EU's free trade agreement with **Mercosur countries**—Argentina, Bolivia, Brazil, Paraguay, and Uruguay. India should also rethink its reluctance to join the Regional Comprehensive Economic Partnership (RCEP)—the world's largest trading group.

Conclusion

- It is useful to remind ourselves that America's limited backing of or withdrawal from multilateralism has not led to the collapse of institutions and agreements such as the UN Convention on the Law of the Sea (UNCLOS) or the Paris Climate Agreement. With the US acting like a wrecking ball of rules and institutions, it is time to think past the self-serving label of "indispensable nation," coined by former US Secretary of State Madeleine Albright.
- India is no longer just a participant but an "Indispensable Architect" of the new order. India has moved from a policy of non-alignment to "Multi-Alignment" or "Strategic Autonomy". This allows it to maintain friendly ties with competing powers while prioritizing its national interests.
- Its role is defined by a blend of moral leadership (seeking a more equitable world) and strategic pragmatism (securing its own growth and security) thus becoming as a true Vishwaguru.

INDIA- EU FTA

- Recently, The United States has announced **India–EU FTA**
- India and the European Union (EU) have concluded negotiations for a comprehensive Free Trade Agreement (FTA), marking a transformative step in their economic relations. The EU is India's 22nd FTA partner.

- The concluded India–EU FTA will now undergo language finalisation and legal scrubbing, followed by translation and ratification by all 27 EU Member States and the European Parliament before it enters into force.

What are the Key Highlights of the India–EU FTA?

European Union Commitments

- **Comprehensive Market Access:** The European Union committed to open **97%** of its tariff lines, covering **99.5% of India's exports by value**, offering India one of the deepest preferential market access arrangements it has ever received.
- **Labour-Intensive Sector Advantage:** Key employment-generating sectors such as textiles, apparel, leather, footwear, marine products, gems and jewellery, toys, and sports goods, currently facing EU duties of 4–26%, will enter the EU market at zero duty, covering exports worth about USD 33 billion.
- **Services Market Liberalisation:** The EU made binding commitments across 144 services subsectors, including IT/ITeS, digital services, professional services, education, and business services, ensuring regulatory certainty and non-discriminatory treatment for Indian service providers.
- **Farm Exports:** The FTA provides India preferential access to the EU market for key agricultural and processed food exports, improving their competitiveness. This is expected to boost farmer incomes, promote value-added agri-exports, and strengthen rural and women-led livelihoods.
- **Professional Mobility Framework:** The FTA establishes a clear framework for temporary movement of professionals such as intra-corporate transferees, contractual service suppliers, and independent professionals along with provisions for dependents, students, and future social security arrangements.
- **Regulatory and Standards Cooperation:** Enhanced cooperation on **Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT)** was agreed upon to reduce non-tariff barriers, enable conformity assessment recognition, and improve market predictability.

India's Commitments

- **Calibrated Tariff Liberalisation:** India committed market access on 92.1% of its tariff lines, covering 97.5% of EU exports. Critical sectors including dairy, cereals, poultry, soymeal, and select agricultural products remain protected, while automobiles, wines, and spirits are subject to gradual liberalisation to shield MSMEs and farmers.
- **Services Sector Opening:** India opened 102 services subsectors, including telecom, financial,

maritime, environmental, professional, and business services, providing EU firms a stable and predictable operating environment.

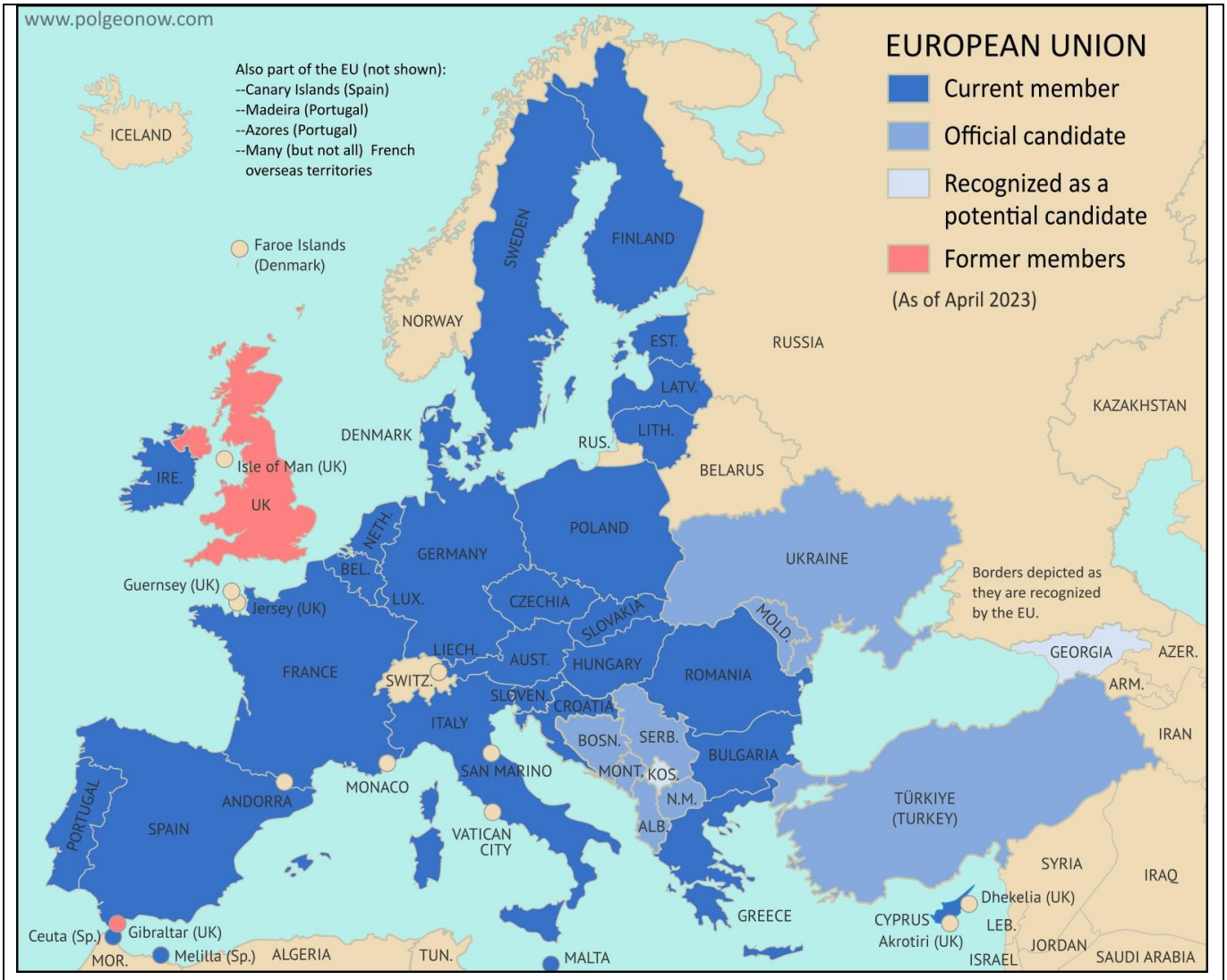
- **MSME-Friendly Rules of Origin:** Product-specific rules of origin aligned with global value chains were adopted, allowing self-certification through Statements of Origin and special flexibilities for MSME-dominated sectors such as shrimps, prawns, and downstream aluminium products.
- **Balanced IPR and Digital Trade Framework:** India reaffirmed TRIPS-compliant intellectual property protection while safeguarding public interest, protecting the generic pharmaceutical industry, recognising the Traditional Knowledge Digital Library, and balancing cross-border digital trade with data localisation and digital sovereignty.

What is the Significance of the India–EU FTA?

- **Geoeconomic Diversification:** The FTA advances the **China-plus-one strategy** by positioning India as a trusted manufacturing and services alternative for the EU. In a global order where trade and technology are increasingly weaponised through sanctions and export controls, the agreement creates a rules-based "zone of trust" between two democratic blocs, especially for sensitive sectors such as semiconductors, AI, defence manufacturing, and green technologies.
- **Increased Indian competitiveness:** To access the EU market, Indian manufacturing will undergo a quality overhaul (Sanitary and Phytosanitary measures, technical standards). This "standards upgrade" **(Brussels Effect)** will make Indian goods globally competitive, not just in Europe but in US and Japanese markets as well.
- **Strategic Leverage:** The FTA connects India, the world's fourth-largest economy, with the EU, the second-largest, together representing 25% of global GDP and one-third of global trade. This creates a massive economic bloc, offering India strategic weight and deep integration with a leading technology superpower.
- **Green and Digital Modernization Engine:** The FTA focuses on digital trade rules and green transition, aiming to boost India's digital economy through secure data flows and AI-driven green industrial development.

India-EU Relations

- **Historical Foundation:** Bilateral relations date to 1962. The relationship was institutionalized by a **1993 Joint Political Statement** and a 1994 Cooperation Agreement, upgraded to a **'Strategic Partnership' in 2004.**



- **Institutional Architecture:** The bilateral relationship is guided by the 'India–EU Strategic Partnership: A Roadmap to 2025'. The multi-tiered institutional architecture is presided over by their annual Summits, which began with the inaugural one in Lisbon in June 2000.
- **High-Level Engagements:** Characterized by frequent leaders' meetings on sidelines of G20, and G7 summits. Both established the India–EU Trade and Technology Council (TTC) in 2022 as a key strategic mechanism.
- **Economic & Trade Relations:** The EU is India's largest goods trading partner (USD 135 billion in FY 2023–24). Bilateral trade in services was at a record USD 53 billion in 2023. EU investments in India exceed USD 117 billion.
- **Strategic & Security Cooperation:** India and the EU have strengthened naval cooperation through joint exercises like Maritime Partnership Exercise with **EUNAVFOR Atalanta (Operation Atalanta).** The EU joined the **Indo-Pacific Oceans Initiative (IPOI) in 2023** and is an Indian

Ocean Rim Association (IORA) dialogue partner.

- **Climate & Connectivity Initiatives:** India – EU Clean Energy and Climate Partnership (CECP) established in 2016 focuses on clean energy and climate-friendly technologies. The EU is a partner to **the International Solar Alliance** and a member of Coalition for Disaster Resilient Infrastructure (CDRI).
- Both sides launched an India–EU Connectivity Partnership in 2021 and are co-partners in the **India-Middle East-Europe Economic Corridor (IMEC).**
- **Multifaceted Sectoral Cooperation:** Extensive collaboration in Science & Technology (India is an associate member of CERN), Space (ISRO launched ESA's Proba-3 Mission in 2024), Digital transition, Water (India–EU Water Partnership), and Migration (Common Agenda on Migration and Mobility).

European Union

- A supranational political and economic union created post-World War II to promote peace and economic cooperation, notably between France and Germany.
- **Historical Evolution:** Originated from the 1951 European Coal and Steel Community (ECSC).

Key treaties include:

1. **1951:** Establishment of the European Coal and Steel Community (ECSC).
2. **1957:** Treaties of Rome created the European Economic Community (EEC) and the European Atomic Energy Community (Euratom).
3. **1992:** The **Maastricht Treaty** formally established the European Union.
4. **2020:** The United Kingdom withdrew (Brexit), reducing membership from 28 to 27.

- **Aims:** Key aims include establishing a single internal market with the Four Freedoms (goods, services, capital, people) and promoting sustainable development.
- **Key Features:** Operates a Single Market and a Customs Union. The Schengen Area enables border-free travel. **Four non-EU countries** (Iceland, Norway, Switzerland, and Liechtenstein) are also part of Schengen.
- 20 member states use the euro (Eurozone), with Bulgaria set to join in 2026.

What Concerns are Associated with the India–EU FTA?

- **EU's Regulatory Onslaught as Non-Tariff Barriers (NTBs):** The EU's inclusion of environmental and labor standards in trade agreements raises concerns about green protectionism, where such norms may function not as neutral regulations but as de-facto non-trade barriers.
- **Carbon Border Adjustment Mechanism (CBAM):** This carbon tax directly impacts key Indian exports like steel, aluminium, and chemicals. From 2026, Indian steel exports could face a 20–35% tax equivalent, potentially wiping out gains from tariff elimination.
- **EU Deforestation Regulation (EUDR):** The EUDR bans imports of commodities like coffee, rubber, and wood produced on land deforested after 2020. Small Indian farmers must geotag plots and prove traceability, a compliance burden unaffordable for most smallholders.
- **Corporate Sustainability Due Diligence (CSDDD):** Effective from 2027, this directive forces companies to audit their value chains for human rights and environmental risks. Indian manufacturers are concerned about sharing sensitive supplier data, viewing it as a business risk.
- **Industrial Accelerator Act:** This proposed act may introduce local content norms (minimum domestic value addition). This would put pressure on imports, including from India.

Asymmetry in Market Access and Tariff Concessions:

- **Pre-existing Low EU Tariffs:** Over 75% of India's exports to the EU already attract less than 1% tariff without the FTA. Therefore, the significant market access gains for Indian goods are limited.
- **High Indian Tariffs:** India's average tariffs (10–12%) on EU goods are much higher than the EU's (3–4%) on Indian goods. India will have to offer deep tariff cuts on a broad range of European goods, while the relative gain in EU market access is smaller.
- **Competition from Zero-Duty Countries:** Competitors like Bangladesh, Vietnam, and Ethiopia already have zero-duty access to the EU via other schemes, putting Indian exports at a potential disadvantage even with the FTA.
- **Lack of Parity and Carve-outs:** The EU has granted exemptions and carve-outs to the US from some environmental regulations. Indian experts argue that giving large polluters a carve-out while pushing developing countries like India to comply risks dampening any tariff advantage. India has likely pushed for parity on such exemptions.
- **EU's Concerns Regarding Indian Local Laws:** The EU views India's Quality Control Orders (QCOs)—mandatory standards requiring facility audits—as major non-tariff barriers. The EU stridently opposes these, arguing they obstruct market access.

What Measures are Required to Strengthen India-EU Economic Relations?

- **Proactively Address the Core Asymmetries:** To counterbalance trade asymmetry, India must aggressively leverage its access to 144 services subsectors and professional mobility, while attracting EU manufacturing investment to ascend the value chain.
- **Mechanisms for Dialogue & Dispute Prevention:** Establish the proposed 'Rapid Response Forum' to promptly tackle new non-tariff barriers such as EU regulations and QCOs through senior-level intervention, preventing disputes from escalating.
- **Equitable Carve-outs and Transition Periods:** To protect competitive sectors like steel and aluminium, India must secure exemptions from regulations like CBAM similar to those granted to the US Simultaneously, it should negotiate extended transition periods for rules such as EUDR and CSDDD to ease adaptation.
- **Build Strategic Partnership Beyond Trade:** Integrating the trade agreement with the IMEC corridor will build resilient supply chains and cut logistical costs. Simultaneously, strengthening Indo-Pacific collaboration through the IPOI and TTC creates shared geopolitical stakes that sustain the long-term partnership.

Conclusion

- The India-EU FTA is a strategic milestone with significant potential, but its sustainability hinges on effectively managing regulatory asymmetries, ensuring fair carve-outs, and leveraging services and mobility gains to create a balanced, mutually beneficial partnership that transcends mere tariff liberalization.

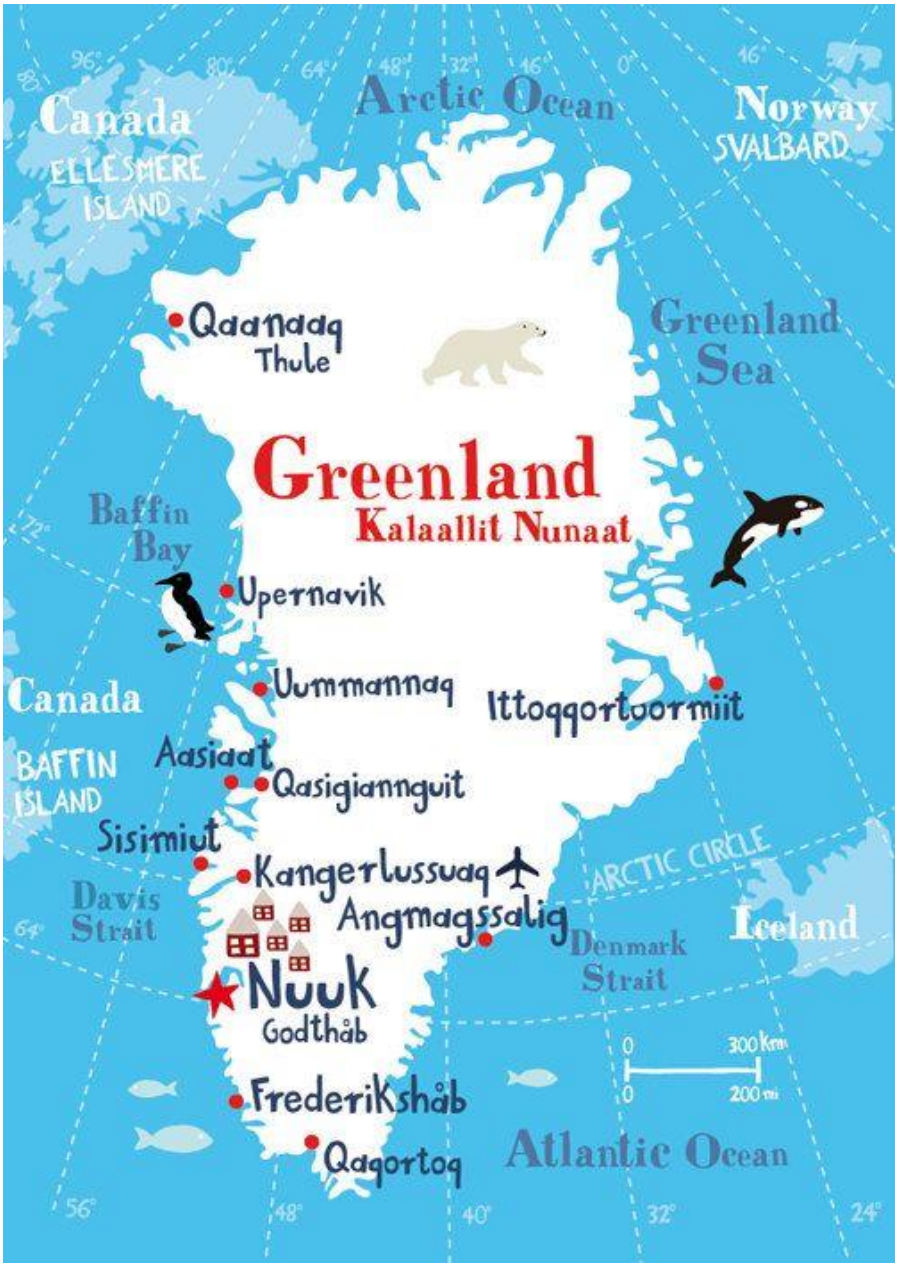
Trump's Arctic Ambition: Greenland in the Crosshairs

- Trump's Arctic Ambition over Greenland raises questions of US expansionism, Arctic security, rare earth minerals, and international law after Venezuela.

Trump's Arctic Ambition

- Leaders of Denmark and Greenland have sharply rejected US President Donald Trump's assertion that the United States needs **Greenland "for defence".**
- The response comes amid a year-long US campaign signalling interest in taking control of Greenland. Trump has repeatedly floated the idea of "purchasing" the Arctic island, and has not ruled out the use of force, escalating tensions.
- The crisis intensified after Trump doubled down on Greenland's strategic necessity, while aides shared provocative maps showing the island draped in the US flag.

- Denmark has accused Washington of encouraging secessionist sentiments within Greenland, turning the issue into a major diplomatic flashpoint with implications for Arctic security, sovereignty, and international law.



Why the US Wants Greenland:

1. Strategic and Resource Interests

- US interest in Greenland is primarily driven by geostrategy. During the Cold War, Greenland served as a crucial forward base, a role that continues today.
- The US operates the **Pituffik Space Base** (formerly Thule Air Base), which enables early warning and missile defence, allowing monitoring of potential threats from Russia, China, and North Korea.

- Its location also offers strategic reach across Europe and Asia.

2. Arctic Power Competition

- As Russia and China expand their Arctic military presence, Greenland's importance has grown.
- Control or influence over the island strengthens US positioning in the emerging Arctic security theatre, where melting ice is opening new routes and strategic spaces.

3. Critical Minerals and Supply Chains

- Greenland holds significant rare earth mineral reserves, vital for electronics, electric vehicles, and defence systems.
- With China dominating global supply, access to alternative sources is strategically attractive.
- However, Greenland passed a law banning uranium mining in 2021, complicating large-scale extraction plans.

A Longstanding US Interest in Greenland

- The United States has expressed interest in Greenland for over a century. **As early as 1867, the US State Department** noted Greenland's strategic location and natural resources, though no formal action followed.
- During World War II, the US moved into Greenland after Nazi Germany occupied Denmark. In 1946, President Harry S Truman offered $100 million to Denmark to purchase Greenland, and even explored exchanging parts of **Alaska for Greenlandic territory.**
- In 1951, the US and Denmark signed a defence agreement allowing the US to build and operate military bases in Greenland, cementing a long-term American military presence.
- Interest resurfaced during Donald Trump's first term (2017–21), when he publicly proposed buying Greenland as a "large real estate deal."
- After Danish Prime Minister Mette Frederiksen dismissed the idea as absurd, Trump cancelled an official visit to Denmark, highlighting the diplomatic sensitivity around the issue.

Why Denmark and Greenland Are Wary of Trump

- Concerns in Denmark and Greenland have intensified following US President Donald Trump's actions in Venezuela, including the capture of President Nicolás Maduro.
- The episode heightened anxieties about sovereignty and intervention, making Trump's remarks on Greenland more alarming.

Alleged 'Three-Phase' Strategy

- A report by Danish Broadcasting Corporation (DR) claimed the Trump administration pursued a three-phase plan to take over Greenland:

I. Charm offensive—including outreach such as a visit by Donald Trump Jr
II. Direct pressure on Denmark—with JD Vance travelling to Greenland and publicly criticising Denmark
III. Influence operations—alleged efforts to identify and cultivate local supporters to fuel a secessionist movement

Has the US Bought Territories in the Past

- **Alaska Purchase (1867)** – The United States purchased Alaska from Russia in 1867 for $7.2 million, adding about 1.5 million sq km to US territory. Alaska became a US state in 1959.
- **Louisiana Purchase (1803)** – In 1803, under President Thomas Jefferson, the US bought over 2 million sq km of land from France for $15 million, dramatically expanding the nation westward.
- **Danish West Indies (1917)** – In 1917, the US purchased the Danish West Indies from Denmark. The islands were renamed the US Virgin Islands, becoming a permanent US territory

Strategic and Legal Implications

Trump's statements challenge:

- The UN Charter
- Principles of sovereignty and self-determination
- The episode exposes rising Arctic militarisation and great-power competition.
- It risks destabilising NATO unity, as Denmark is a NATO ally.

Way Forward

- Strengthening Arctic governance through multilateral forums
- Respecting international law and sovereignty
- Cooperative resource development instead of coercive geopolitics
- Addressing Arctic security through diplomacy rather than unilateralism

World bank's A Breath of Change Report

- The World Bank's 2025 report**, A Breath of Change**, highlights that nearly one billion people in the Indo-Gangetic Plains and Himalayan Foothills (IGP-HF) breathe the world's most polluted air,

necessitating urgent transboundary cooperation.

World bank's A Breath of Change Report:

- **"A Breath of Change"** is a strategic solutions book that moves beyond diagnosing air pollution to providing a practical, multi-sectoral roadmap for the IGP-HF airshed, covering 13 jurisdictions across Bangladesh, Bhutan, India, Nepal, and Pakistan.
- It frames solutions around the "4Is" framework**: Information, Incentives, Institutions, and Infrastructure.**

Key Trends & Data

- **Health Impact:** Air pollution causes approximately one million premature deaths annually in the IGP-HF region.
- **Economic Cost:** The regional economic damage from pollution is estimated at 10% of GDP annually, due to lost productivity and healthcare costs.
- **Life Expectancy:** Exposure to $PM_{2.5}$ reduces average life expectancy in the region by more than three years.
- **Hazardous Exposure:** 81% of public-school students in the region are exposed to hazardous levels of $PM_{2.5}$ (above 35 $\mu g/m^3$).
- **Pollution Origin:** In many jurisdictions, over 50% of ambient $PM_{2.5}$ originates from outside local administrative boundaries.
- **Regional Dominance:** The IGP-HF region records the highest levels of air pollution globally, with $PM_{2.5}$ levels 8 to 20 times the WHO guideline.
- **Target Goal:** The "**35 by 35**" target aligns with the WHO's first interim target for cleaner air.
- **Transboundary Flow:** In Nepal's Terai region, an estimated 68% of air pollution originates from other countries.

Reasons for Transboundary Pollution

- **Geography & Topography:** The flat plains are surrounded by the Himalayas, which trap pollutants and lead to frequent smog episodes, especially during winter inversions.
- E.g. Delhi's unique location makes it a sink for pollutants carried from upwind states like Punjab and Haryana.

- **Wind Patterns:** North-westerly winds during winter carry particulate matter across national borders.
- E.g. Pollution from Pakistan's Punjab can account for up to 30% of air pollution in Indian Punjab.

- **Secondary Particle Formation:** Precursor gases (such as SO2SO_2SO2 and ammonia) travel long distances and react in the atmosphere to form fine particles far from their source.
- E.g. Coal-fired power plants in one region emit sulfur dioxide that forms secondary $PM_{2.5}$, affecting neighboring jurisdictions.

- **Agricultural Practices:** Seasonal crop residue burning creates massive smoke plumes that travel across states.
- E.g. Post-harvest fires in India and Pakistan create a seasonal crisis, blanketing the entire IGP-HF region in haze.

- **Industrial Clusters:** High-stack industries such as thermal power plants release emissions that disperse across vast areas.
- E.g. Clustered MSMEs in peri-urban areas like Kanpur and Dhaka cause intense local exposure that drifts across city limits.

Initiatives Taken So Far

- **Kathmandu Roadmap (2022):** Established a regional framework for science-policy dialogue and shared air quality goals.
- **Thimphu Outcome (2024):** Endorsed the aspirational "35 by 35" target and emphasized harmonized monitoring and financing.
- **Malé Declaration:** A long-standing (non-binding) regional platform for joint monitoring and capacity building.
- **India's National Clean Air Programme (NCAP):** A flagship domestic program targeting PM_{10} reductions in over 130 cities.
- **Market-Based Pilots:** Gujarat's world-first particulate matter emissions trading system (ETS) in Surat.

Challenges Associated

- **Institutional Fragmentation:** Mandates are often split between environmental, transport, and agricultural ministries, leading to siloed action.
- E.g. In Pakistan, overlapping duties between environmental and industrial ministries delay technology transitions.

- **Funding Gaps:** Regional mechanisms lack sustained, long-term financing and often rely on fluctuating donor support.
- E.g. Progress on the Malé Declaration slowed significantly after external funding from SIDA ended.

- **Weak Enforcement:** While standards exist, agencies often lack the technical staff and resources to penalize non-compliance.
- E.g. In India, half of the State Pollution Control Boards are reportedly understaffed.

- **Data Gaps:** Monitoring networks are concentrated in cities, leaving rural areas "blind" to pollution levels.
- E.g. Pakistan lacks a functional, integrated national air quality monitoring network.

- **Economic Barriers:** High upfront costs deter small-scale actors (MSMEs and farmers) from adopting cleaner technologies.
- E.g. The cost of retrofitting heavy-duty vehicles in India can exceed 180% of average per capita income.

Recommended Solutions (The 4Is):

1. Information:

- Expand real-time monitoring networks and use satellite-based tracking (GeoAI) to identify pollution hotspots such as brick kilns.

2. Incentives:

- Reform fossil fuel and fertilizer subsidies, redirecting funds toward clean technologies like electric vehicles and Happy Seeders.

3. Institutions:

- Clarify legal responsibilities through dedicated Clean Air Acts and establish a permanent regional secretariat for coordination.

4. Infrastructure:

- Invest in regional electricity grids, EV charging networks, and centralized common industrial boilers to reduce emissions at scale.

Market Instruments:

- Scale up Emissions Trading Systems (ETS) and pollution taxes (such as Nepal's Green Tax) to mobilize private capital.

Conclusion:

- The air pollution crisis in the Indo-Gangetic Plains is a shared regional challenge beyond the capacity of any single nation. Committing to the "35 by 35" goal and institutionalizing transboundary cooperation can turn a public health emergency into resilient, low-carbon growth. What is needed is political courage to move from diagnosis to delivery and ensure a true "breath of change" for nearly one billion people.

Supreme Court Stays UGC Equity Regulations 2026

- The Supreme Court of India, stayed the implementation of the UGC (Promotion of Equity in Higher Education Institutions) Regulations, 2026.

- The court directed that the previous 2012 guidelines remain in force while expressing concerns that the new rules were vague and capable of dividing society.

What is the issue?

- The controversy stems from the UGC's attempt to replace the 14-year-old equity framework with a more stringent, enforceable set of rules. While intended to curb caste-based discrimination following high-profile tragedies (like those of **Rohith Vemula and Payal Tadvi**), the 2026 regulations sparked a massive backlash.

Key Features of the 2026 Guidelines

- **Separate Definitions:** It distinguishes between general discrimination and caste-based discrimination, specifically identifying SC, ST, and OBC groups.
- **Mandatory Infrastructure:** Every institution must establish an Equal Opportunity Centre (EOC) and appoint Equity Ambassadors and Equity Squads.
- **Strict Timelines:** Mandatory 24-hour response to complaints and a 15-day window for completing detailed investigations.
- **Punitive Action:** Non-compliant institutions face de-recognition, loss of grants, and debarment from UGC schemes.
- **Direct Accountability:** The Head of the Institution is personally responsible for ensuring a discrimination-free environment.
- **24/7 Support:** Compulsory operation of a round-the-clock Equity Helpline and an online portal

for reporting incidents.

Need for Strong UGC Rules:

- **Curbing the rising trend of caste-based discrimination:** Weak, advisory-only 2012 guidelines failed to create deterrence, allowing exclusionary practices to persist across campuses without accountability.
- E.g. UGC data (2026) shows a 118.4% rise in reported caste-discrimination cases in five years, exposing the ineffectiveness of voluntary compliance.

- **Addressing the epidemic of student suicides**: Structural discrimination often manifests as social isolation and academic marginalisation, requiring time-bound intervention rather than slow grievance redressal.
- E.g. In 2025, the Supreme Court flagged a disturbing suicide pattern at IIT Delhi, linking Dalit students' deaths to sustained institutional neglect.

- **Ensuring financial justice and scholarship timelines:** Delays in scholarships compound vulnerability, pushing marginalised students into debt, dropout, or psychological distress.
- E.g. The 2026 SC directions imposed a four-month deadline for clearing scholarship backlogs, recognising financial stress as a suicide trigger.

- **Fixing paper-only redressal mechanisms:** SC/ST Cells without autonomy often hesitate to act against senior faculty, turning grievance systems into procedural formalities.
- E.g. Prof. N. Sukumar (2026) noted that administration-nominated cells lack credibility, resulting in biased resolutions and low student trust.

- **Combating epistemic and invisible bias:** Discrimination increasingly occurs through subtle academic practices—grading, vivas, and intellectual exclusion—beyond formal misconduct.
- E.g. 2025 studies documented epistemic caste bias, where Dalit students' ideas were systematically devalued, necessitating Equity Squads.

Challenges Associated

- **Exclusionary Scope:** The definition of caste-based discrimination excludes General Category students, denying them equal protection under the law.
- E.g. Petitioners cited 2022 JNU incidents where Brahmins Leave Campus graffiti appeared, arguing

that the 2026 rules would offer no specific remedy for such targeted harassment.

- **Potential for Misuse:** The lack of safeguards or penalties for false or malicious complaints raises fears of the law being used as a tool for vendettas.
- **Vagueness in Language:** The Supreme Court noted that terms like segregation in hostels or mentorship groups were poorly defined and could lead to arbitrary implementation.
- **Omission of Ragging:** Unlike the 2012 version, the 2026 rules do not explicitly detail ragging as a form of discrimination, which remains a primary threat on Indian campuses.
- **Social Polarization**: There is a growing concern that the rules institutionalize caste identities rather than fostering a casteless academic environment.
- E.g. The CJI warned that separate hostels or wards (if interpreted as such) would reverse 75 years of progress toward social assimilation.

Way Ahead

- **Inclusive Redrafting:** Redesign the definition of discrimination to be universal, ensuring any student, regardless of caste or category, can seek redressal.
- **Expert Panel Review:** Follow the SC's suggestion to form a committee of eminent academicians and jurists to modulate the language for clarity.
- **Anti-Misuse Guardrails:** Incorporate specific provisions to penalize false or malicious complaints to build trust among all stakeholders.
- **Holistic Protection:** Re-integrate specific mentions of ragging, regional discrimination, and cultural bias (North-South divide) into the equity framework.
- **Focus on Sensitization:** Shift from a purely punitive model to one that prioritizes mandatory orientation and empathy-building programs for both students and faculty.

Conclusion:

- The 2026 UGC Regulations represent a well-intentioned but legally flawed attempt to legislate social equity on Indian campuses. By staying the rules, the Supreme Court has underscored that a protective law must be inclusive and precise to avoid becoming an instrument of further division. The path forward lies in creating a framework that protects the marginalized without alienating the general student body.

Highlights of Economic Survey 2025-26

- Union Finance Minister Nirmala Sitharaman tabled **the Economic Survey 2025-26** in Parliament

ahead of the Union Budget 2026.

- **Core Philosophy:** The Survey advocates a shift to **"Disciplined Swadeshi,"** a calibrated alternative to move beyond protectionism and integrate India into global supply chains.

About Economic Survey of India

- **Flagship Document:** The Economic Survey of India is the Ministry of Finance's annual flagship publication, serving as the official evaluation of the Indian economy.
- **Core Purpose:** It analyses economic performance over the previous 12 months, projects GDP growth, and outlines broad policy recommendations.
- **Historical Origin:** The Survey was first presented in 1950-51 with Budget documents and has been presented separately since 1964.
- **Timing:** It is usually tabled in Parliament one day before the Union Budget every financial year.
- **Institutional Preparation:** Economic Division of the Department of Economic Affairs (DEA) compiles it under the guidance of the Chief Economic Advisor (CEA).
- **Approval:** The Union Finance Minister approves the document before its formal presentation.
- **Legal Status:** There is no constitutional provision or specific Act that mandates the preparation or presentation of the Economic Survey.
- **Non-Binding Nature:** The government is not legally bound to present the Survey or implement its policy recommendations.
- **Key Components:** It covers macroeconomic trends, sectoral performance, thematic chapters, and a detailed statistical appendix.

Key Highlights of the Economic-Survey 2025-26

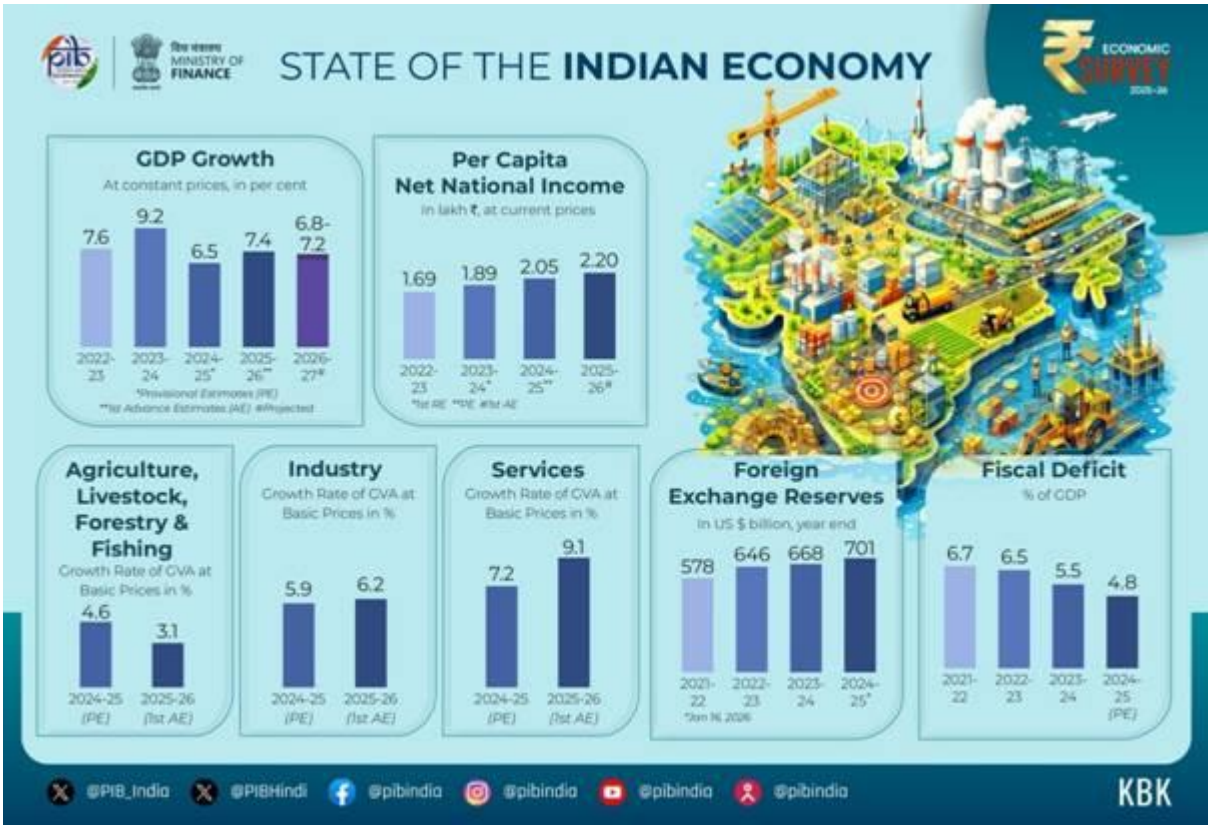
1. **State of the Economy**

- **Growth Trajectory:** Real GDP is estimated to grow by 7.4% in FY26, maintaining India's position as the fastest-growing major economy.
- **Future Outlook:** The Survey estimates Real GDP growth of 6.8%-7.2% for FY27, with the medium-term potential growth rate revised upward to 7%.
- **Consumption Engine:** Private Final Consumption Expenditure (PFCE) as a share of GDP rose to a 12-year high of 61.5%, driven by robust domestic demand.
- **Rural vs Urban:** Rural consumption improved due to strong agricultural performance, while urban demand was supported by stable employment.
- **Investment Revival:** Gross Fixed Capital Formation (GFCF) grew by 7.6% and maintained a

steady rate of 30% of GDP.

2. **Fiscal Developments**

- **Deficit Targets:** The Centre achieved a fiscal deficit of 4.8% (Provisional) in FY25 and has set a target of 4.4% for FY26.
- **Tax Buoyancy:** Centre's revenue receipts rose to 9.2% of GDP in FY25, indicating improved tax buoyancy compared with pre-pandemic levels.
- **Broadening Base:** The direct tax base expanded significantly, with income tax return filers reaching 9.2 crore in FY25.
- **GST Performance:** Gross GST collections grew 6.7% year-on-year to ₹17.4 lakh crore during April–December 2025, reflecting better compliance and economic formalisation.
- **Expenditure Quality:** Effective Capital Expenditure increased to 4.0% of GDP; asset creation was prioritised over revenue spending.
- **Debt Sustainability:** The General Government debt-to-GDP ratio has decreased by 7.1 percentage points since 2020.



3. **Monetary Management and Financial Inclusion**

- **Policy Stance:** The RBI adopted a neutral stance and cut the Repo Rate by 125 bps since February 2025 (now at 5.25%) to boost economic growth.
- **Banking Health:** Gross Non-Performing Assets (GNPA) declined to a multi-decadal low of 2.2%, demonstrating an improved asset quality and stronger balance sheets.
- **Financial Inclusion:** PM Jan Dhan Yojana accounts have grown to 55.02 crore, including 36.63 crore in rural and semi-urban areas.
- **Capital Markets:** The number of unique investors in the Indian capital markets crossed 12 crore, with women accounting for nearly 25%.

4. Inflation and Prices

- **Headline Trends:** Retail inflation fell to a historic low of 1.7% (April-Dec 2025), primarily due to deflation in food prices.
- **Core Dynamics:** Core inflation remained persistently high at 4.62%, driven mainly by a surge in global precious-metal prices, particularly gold and silver.
- **Household Impact:** The sharp moderation in food and fuel prices has strengthened overall household purchasing power.

5. Agriculture and Allied Sectors

- **Growth Estimate:** The agricultural sector is projected to grow by 3.1% in FY26, slower than the 4.6% growth recorded in FY25.
- **Production Shift:** Horticulture production (362.08 MT) continues to exceed foodgrain production (357.7 MT) for the second consecutive year.
- **Allied Growth:** India's fish production has increased by 142% over the past decade, reaching a record 188.7 lakh tonnes in 2023-24.

6. Industry and Infrastructure

- **Industrial Growth:** Industrial GVA is projected to grow by 6.2%, driven by a strong recovery in the manufacturing sector.
- **Railway Modernisation:** The railway network achieved near-total electrification of 99.1% of its broad-gauge network.
- **Aviation Sector:** India became the 3rd largest domestic aviation market, with the number of operational airports reaching 164.
- **Power Reform:** Power distribution companies (DISCOMs) have collectively recorded a positive

Profit After Tax (PAT) of ₹2,701 crore for the first time since the corporatisation of State Electricity Boards.

- **Logistics Expansion:** Operational high-speed highway corridors (HSCs) have expanded to 5,364 km, nearly tenfold over the past decade.

7. Services Sector

- **Sector Dominance:** The services sector's share of GDP rose to 53.6% in H1 FY26, with a projected growth rate of 9.1% for FY26.
- **Investment Magnet:** The services sector accounted for over 80% of total Foreign Direct Investment (FDI) inflows during FY23-FY25.
- **Export Rank:** India ranked 7th globally for services exports, reaching an all-time high of $387.5 billion in FY25.

8. External Sector

- **Forex Reserves:** Foreign exchange reserves reached an all-time high of USD 701.4 billion, providing a buffer of 11 months' worth of goods imports and covering 94% of external debt.
- **Global Share:** India's share in global merchandise exports nearly doubled to 1.8% since 2005, while its share in services exports rose to 4.3%.
- **Remittances:** India remained the top global recipient of remittances, with inflows of USD 135.4 billion (3.5% of GDP) in FY25.
- **External Debt:** At the end of September 2025, total external debt stood at USD 746 billion; sovereign external debt accounted for less than 5% of the Government of India's total debt.

9. Social Infrastructure and Employment

- **Unemployment Rate:** The unemployment rate declined to 4.9% in Q3 from 5.4% in Q1 FY26. Female Labour Force Participation (FLFPR) rose to 41.7% in FY24.
- **Poverty Decline:** The Multidimensional Poverty Index (MPI) dropped sharply to 11.28% due to the saturation approach in welfare delivery, ensuring that basic amenities reach every household.
- **Education Access:** School enrolment ratios improved, with the Gross Enrolment Ratio (GER) exceeding 90% at both the primary and upper primary levels.
- **Social Spending:** General government expenditure on social services has increased to 7.9% of GDP in FY26, with a focus on health and education outcomes.
- **Worker Registration:** The e-Shram portal has registered over 31 crore unorganised workers to improve social security coverage and ensure seamless portability of welfare benefits.

The Economic Survey

- The Economic Survey is an annual government report presented before the Union Budget to assess India's economic condition and outlook.
- It is prepared by the **Economic Division of the Ministry of Finance** under the Chief Economic Adviser, it reviews economic performance, sectoral trends, challenges, and prospects, and is tabled in both Houses of Parliament by the Union Finance Minister.
- First presented in 1950–51 as part of the Budget, it became a **separate document in 1964.**

Conclusion

- The Economic Survey 2025–26 presents a balanced assessment of India's economic position. It highlights strong growth fundamentals and a revised medium-term growth outlook, while cautioning against global instability.

- By focusing on inclusive development, MSME support, infrastructure investment, and strategic resilience, the Survey outlines a pathway for sustaining GDP growth in a complex global environment. As India approaches the Union Budget, the Survey reinforces the need for steady reforms, fiscal prudence, and coordinated policy action to support long-term economic stability.