



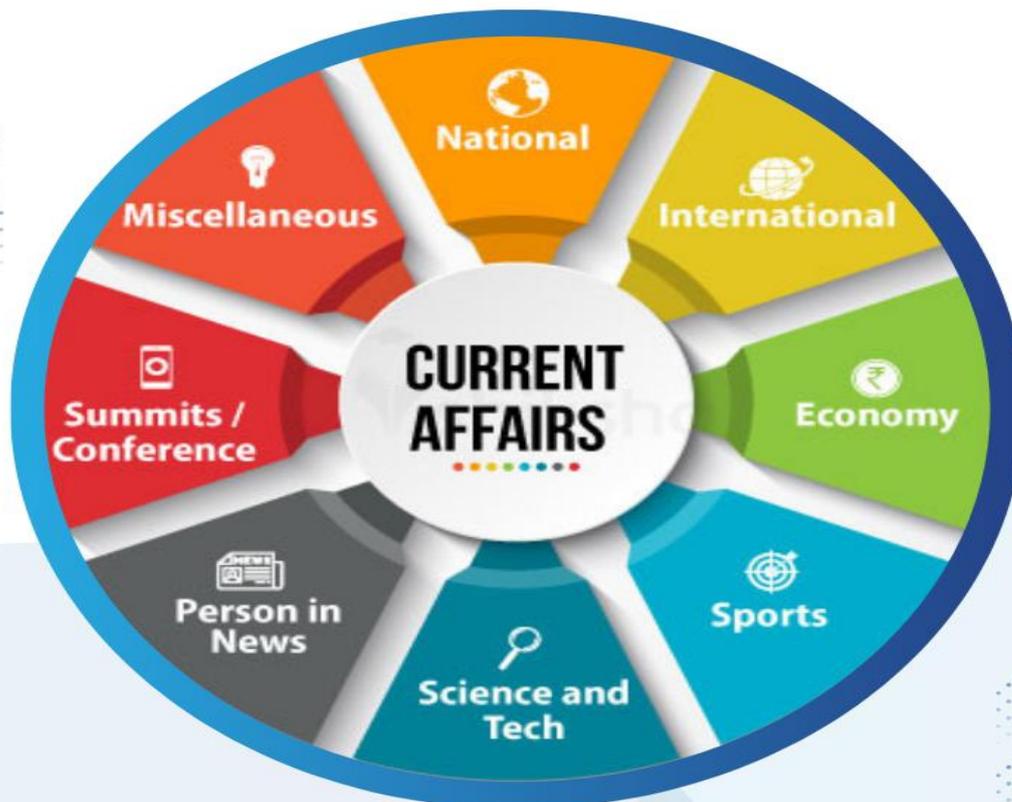
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# VIDHVATH IAS KAS ACADEMY & STUDY CENTRE

## DAILY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

**DATE: 16/01/2026 (FRIDAY)**



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## 1. India's First State-Funded BSL-4 Laboratory in Gujarat

Union Home Minister Amit Shah recently laid the foundation stone for India's first state-funded **Bio-Safety Level 4 (BSL-4)** containment facility in Gandhinagar, Gujarat. Developed at a cost of **₹362 crore** over 11,000 square meters, this facility marks a significant leap in India's biological research infrastructure and health security.

### Key Highlights and Strategic Importance

- **Pioneering Infrastructure:** It is the **first BSL-4 lab in India to be fully funded and controlled by a state government** (under the Gujarat State Biotechnology Mission). Nationally, it is the second civilian BSL-4 facility after the National Institute of Virology (NIV), Pune.
- **Comprehensive Modules:** The facility includes BSL-2, BSL-3, and BSL-4 modules, alongside **Animal Bio-Safety Level (ABSL) 3 and 4** labs, enabling research on both human and zoonotic pathogens.
- **Strategic Health Shield:** Designed to study high-risk, infectious pathogens that lack effective treatments, such as **Ebola, Marburg, Nipah, and Crimean-Congo Hemorrhagic Fever (CCHF)**.
- **National Integration:** The Department of Biotechnology (DBT) has signed an MoU designating it as a "**National Facility**," ensuring expert guidance and collaborative research across Indian institutions.
- **Zoonotic Research Focus:** The inclusion of an ABSL-4 lab allows for vaccine production from animal antibodies, reducing dependence on the ICAR-NIHSAD facility in Bhopal for testing animal samples.
- **Global Compliance:** The lab follows stringent international standards set by the **US CDC, US NIH, DBT India, and ICMR**, placing India on the global map of high-containment research (joining a group of roughly 70 such labs worldwide).



### Definitions of Key Terms

- **Biosafety Level 4 (BSL-4):** The highest level of biocontainment used for dangerous and exotic agents that pose a high individual risk of aerosol-transmitted laboratory infections and life-threatening diseases.
- **ABSL (Animal Bio-Safety Level):** Specific containment standards for laboratories where research is conducted on animals infected with pathogens.
- **Zoonotic Diseases:** Infectious diseases that are transmitted from animals to humans (e.g., Nipah, Rabies).
- **Biotechnology Regulatory Authority of India (BRAI):** A proposed regulatory body to provide a single-window mechanism for biosafety clearances (currently regulated via multiple bodies).



## Constitutional and Legal Provisions

Aspect	Provision / Authority
<b>Legal Framework</b>	<b>Environment (Protection) Act, 1986:</b> The primary law governing the manufacture, use, import, export, and storage of hazardous microorganisms.
<b>Specific Rules</b>	<b>Rules, 1989:</b> Formulated under the EPA 1986 to regulate Genetically Modified Organisms (GMOs) and hazardous microbes.
<b>Security Law</b>	<b>WMD Act, 2005:</b> The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act criminalizes the misuse of biological agents as weapons.
<b>Regulatory Bodies</b>	<b>RCGM &amp; GEAC:</b> The Review Committee on Genetic Manipulation (under DBT) and Genetic Engineering Appraisal Committee (under MoEFCC) oversee biosafety compliance.
<b>International Treaty</b>	<b>Biological Weapons Convention (BWC):</b> India is a signatory to this treaty, which prohibits the development and stockpiling of biological weapons.

## Conclusion

The establishment of the BSL-4 facility in Gujarat is a transformative step towards **Atmanirbhar Bharat** in the biotechnology sector. By bridging the gap in high-containment infrastructure, India enhances its capacity for real-time outbreak response and indigenous vaccine development. This "health shield" not only protects against natural pandemics but also serves as a critical component of national biosecurity against emerging biological threats.

## UPSC Relevance

- **GS Paper II:** Issues relating to development and management of Social Sector/Services relating to **Health**.
- **GS Paper III:** Science and Technology- developments and their applications; **Indigenization of technology; Biosecurity** and disaster management.
- **Prelims:** Locations of high-containment labs (NIV Pune, Gwalior DRDO, Bhopal NIHSAD); Biosafety levels and types of pathogens; Role of DBT and ICMR.

## 2. Karnataka Land Revenue Amendment: Reforming Coorg's Jamma Bane System

The Karnataka government recently enacted the **Karnataka Land Revenue (Second Amendment) Act, 2025**, aimed at modernizing the archaic land tenure system in the Kodagu (Coorg) district. This reform addresses the complexities of the **Jamma Bane** system, ensuring that land records reflect contemporary ownership rather than just the names of original grantees from centuries ago.



## Key Highlights of the Jamma Bane Land Reform

- **Historical Context:** Jamma lands were hereditary grants made between 1600 and 1800 by the Rajas of Coorg and later the British to local communities, primarily the **Kodavas**, in exchange for military and security services.
- **Unique Tenure System:** Unlike standard land holdings, Jamma Bane includes both **wetlands (paddy fields)** and **highlands (Bane)**. Historically, the highlands were used for cattle grazing and forest produce to support cultivation in the wetlands, though many have now evolved into coffee estates.
- **The "Pattedar" Dilemma:** Records traditionally carried only the name of the **original grantee (Pattedar)**. Over generations, while families grew and land was divided, the official "Record of Rights" failed to reflect current individual owners, leading to hurdles in obtaining bank loans or executing land sales.
- **Legislative Correction:** The 2025 Amendment empowers **Tahsildars** to correct inconsistencies in the Record of Rights (RTC). It allows for the deletion of obsolete entries and the inclusion of current family members' names to align Kodagu's records with the rest of the state under the **Bhoomi Project** (digitization).
- **Statutory Basis:** The amendment specifically modifies **Section 127** of the Karnataka Land Revenue Act, 1964. It provides a legal mechanism to move beyond the 1899 colonial regulations that had persisted in the region despite newer state laws.
- **Administrative Process:** To ensure transparency and resolve local disputes, the government will conduct **"Revenue Adalats"** where Tahsildars will hear objections before finalising the modernized land records.

## Key Definitions

- **Jamma:** Derived from 'Janma', meaning hereditary or birthright; refers to lands held under a privileged tenure.
- **Bane:** Forested lands or highlands attached to a 'Jamma' holding, traditionally used for grazing and firewood, now largely used for coffee cultivation.
- **Pattedar:** The original head of the family or the individual in whose name the land grant was initially registered.
- **Mutation:** The process of changing the title ownership of a property in the local municipal or revenue records when the property is transferred.

## Constitutional & Legal Framework

Provision/Case	Significance
<b>Karnataka Land Revenue Act, 1964</b>	The principal legislation governing land administration in the state; the 2025 amendment brings Kodagu under its full procedural ambit.
<b>Chekkera Poovaiah vs State (1993)</b>	A landmark Karnataka High Court ruling that recognized the distinct ownership rights of the people of Kodagu over Jamma Bane lands.



Provision/Case	Significance
<b>Art. 31A &amp; 31B (9th Schedule)</b>	Constitutional protections often related to land reform; however, this amendment focuses on <b>administrative accuracy</b> and <b>Record of Rights</b> rather than redistribution.
<b>Article 300A</b>	The constitutional right to property; the amendment facilitates this right by providing clear, marketable titles to current occupants.

## Conclusion

The transition from a colonial-era customary record system to a digitized, statutory framework marks a significant milestone for the Kodava community. By resolving the "Pattedar" legacy, the Karnataka government has cleared a major bottleneck for the local agrarian economy, allowing coffee planters and farmers to leverage their land assets for formal credit and legal security while preserving the historical essence of Jamma tenure.

## UPSC Relevance

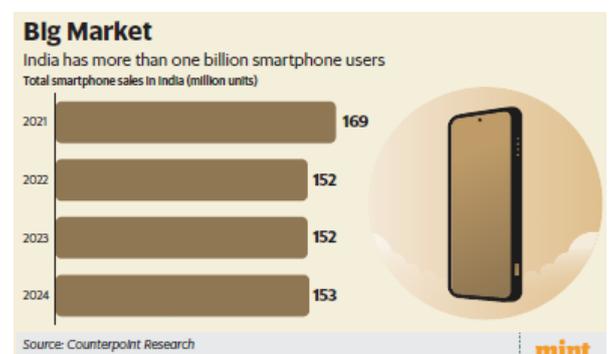
- **GS Paper II:** Functions and responsibilities of the Union and the States; issues relating to the **administration of tribal or unique cultural zones**.
- **GS Paper III: Land Reforms in India;** changes in industrial policy and their effects on agricultural growth; digitization of land records (e-Governance).
- **Prelims Focus:** Geography of Kodagu (Western Ghats); history of the Kodava community; and the significance of the **Bhoomi Project** in land record modernization.

## 3. Smartphone Source Code Scrutiny: Security vs. Proprietary Rights

India's expanding digital landscape, with over one billion smartphone users, has prompted the government to consider tighter security frameworks. While reports suggested a mandate for smartphone makers to share "source code" for official scrutiny under the **Indian Telecom Security Assurance Requirements (ITSAR)**, the government has officially denied such a proposal. This issue highlights the tension between national security, user privacy, and the intellectual property rights of global tech giants.

### Key Highlights and Strategic Concerns

- **Critical Digital Infrastructure:** Smartphones are no longer mere communication tools; they are considered critical infrastructure used for digital payments, banking, and public services, necessitating high-level security oversight.
- **The ITSAR Framework:** Originally designed for network equipment, the ITSAR is being extended to mobile devices. This involves nearly 83 security requirements, including malware checks and controls over camera/microphone access.





- **The "Secret Ingredient" of Tech:** Source code is the human-readable set of instructions that governs how an operating system boots, encrypts data, and interacts with hardware. Major portions of this code are proprietary trade secrets.
- **Security vs. Transparency:** Proponents argue that source code review allows for independent verification of security claims. Opponents fear that sharing code risks intellectual property leaks, reverse engineering, and potential state-wide surveillance.
- **Global Precedents:** While the US and EU have tightened security through the **Cyber Resilience Act** and **Radio Equipment Directive**, they generally stop short of routine code access. Historically, companies like Apple have resisted similar demands from China.
- **Risk of Update Delays:** Manufacturers warn that mandatory code reviews could slow down the deployment of critical security patches, ironically leaving users more vulnerable to cyber threats during the review period.

### Key Definitions

- **Source Code:** The fundamental component of a computer program that is created by a programmer. It can be read and understood by humans but must be translated into machine code for a computer to execute.
- **ITSAR (Indian Telecom Security Assurance Requirements):** A set of security standards and testing protocols mandated by the Indian government to ensure the integrity of telecom equipment and devices.
- **Proprietary Software:** Software that is owned by an individual or a company; there are almost always restrictions on its use, and its source code is kept secret.
- **Critical Information Infrastructure (CII):** As per the IT Act, it refers to computer resources whose destruction would have a debilitating impact on national security, economy, public health, or safety.

### Constitutional and Legal Provisions

Act/Provision	Relevance to Mobile Security
<b>Information Technology Act, 2000</b>	Provides the legal framework for electronic governance and cybersecurity. Section 70B deals with the Indian Computer Emergency Response Team (CERT-In).
<b>Telecommunications Act, 2023</b>	Empowers the government to set standards for telecommunication equipment and services for national security reasons.
<b>Article 21 (Right to Privacy)</b>	In the <b>Puttaswamy case</b> , the Supreme Court declared privacy a fundamental right. Mandatory code access raises concerns about potential state surveillance.
<b>National Cybersecurity Policy (2013)</b>	Aims to build a secure and resilient cyberspace for citizens, businesses, and the government.
<b>National Security Act (NSA)</b>	Provisions can be invoked in extreme cases where data security or communication interception is linked to national integrity.



## Conclusion

The debate over source code access represents the "Security-Trade-Off" dilemma. While the government's intent is to shield a billion users from sophisticated cyber-warfare and malware, the methodology must be balanced. Forcing the disclosure of proprietary code could stifle innovation and lead to diplomatic friction with tech-exporting nations. A middle ground—potentially involving third-party audits in "clean rooms" without code transfer—might be the way forward to secure India's digital future without compromising intellectual property.

## UPSC Relevance

- **GS Paper II:** Government policies and interventions for development in various sectors; Issues arising out of their design and implementation.
- **GS Paper III:** Basics of cyber security; Role of media and social networking sites in internal security challenges; **Indigenization of technology** and developing new technology.
- **Prelims Focus:** Definitions of Open Source vs. Proprietary software; Bodies like CERT-In and NCIIPC; International cybersecurity directives (EU's Cyber Resilience Act).

## 4. India-EU Economic Partnership: Accelerating the FTA in a Shifting Global Order

The recent diplomatic engagement between India and Germany, highlighted by Chancellor Friedrich Merz's visit in January 2026, signals a critical turning point for the India-EU Free Trade Agreement (FTA).<sup>1</sup> Amid global economic volatility and rising protectionism, particularly in the US and China, the deepening Indo-German synergy acts as a catalyst for a broader European partnership.

### Key Highlights for UPSC Prelims & Mains

- **Strategic Reorientation:** German Chancellor Friedrich Merz's decision to prioritize India for his first Asian visit marks a "flip in the script," moving away from a China-centric European policy toward a strategic partnership with India.<sup>2</sup>
- **Trade and FDI Momentum:** Cumulative FDI from the EU reached approximately **\$120 billion by 2024**, with bilateral trade in goods and services projected to touch **\$250 billion and \$100 billion respectively by 2030**.<sup>3</sup>
- **The "Mode 4" Breakthrough:** For the first time, "Mode 4" (movement of natural persons) has become a tangible negotiable instrument, supported by Germany's **Skilled Immigration Act** which has expanded visa quotas for Indian professionals to **90,000 annually**.<sup>4</sup>
- **Geopolitical Resilience:** The FTA is viewed as a necessary hedge against global "unpredictability," including US tariff disruptions and the secular decline in China's long-term growth (trending toward **4% or lower**).<sup>5</sup>
- **Defense & Technology Integration:** Beyond traditional trade, the partnership now incorporates cooperative defense production, semiconductor ecosystem development, and green energy (e.g., green ammonia offtake agreements).<sup>6</sup>





- **Visa-Free Transit:** A landmark announcement in January 2026 allows Indian passport holders **visa-free transit** through German airports, facilitating easier mobility for students and professionals.<sup>7</sup>

### Constitutional & Legal Provisions

Provision/Instrument	Context & Relevance
Article 253	Empowers Parliament to make laws for implementing international treaties/agreements like the EU-FTA.
Entry 13, Union List	Participation in international conferences, associations, and implementing decisions made thereat.
Mode 4 (GATS)	Under the WTO's General Agreement on Trade in Services, this covers the temporary stay of professionals abroad for service delivery.
CBAM (EU Regulation)	The <b>Carbon Border Adjustment Mechanism</b> is a key legal hurdle, imposing carbon taxes on Indian exports like steel and aluminum.

### Key Definitions for Value Addition

- **Free Trade Agreement (FTA):** A pact between two or more nations to reduce barriers to imports and exports among them, including tariffs and quotas.
- **Mode 4 Services:** Refers to the "movement of natural persons," allowing professionals to travel to another country to provide a service temporarily.<sup>8</sup>
- **Secular Decline:** A long-term, non-cyclical downward trend in an economy's growth rate, as currently observed in China.<sup>9</sup>
- **Tariff Arbitrage:** The practice of rerouting goods through third-party countries (e.g., Chinese goods via Mexico) to bypass direct trade tariffs.

### Conclusion

The India-EU FTA is no longer just an economic transaction; it is a strategic imperative.<sup>10</sup> As the US and China navigate structural imbalances, the Indo-German axis offers India a stable source of high-end technology and investment. By addressing long-standing "sticking points" like labor rights and environmental standards through pragmatism, India can secure its position as a global manufacturing and services hub.

### UPSC Relevance

- **GS Paper II:** Bilateral, regional, and global groupings and agreements involving India and/or affecting India's interests.
- **GS Paper III:** Indian Economy and issues relating to planning, mobilization of resources, growth, and international trade.
- **Essays:** Topics related to Globalisation, Strategic Autonomy, and India's role in a Multipolar World.



## 5. Impact of the VB-G RAM G Act on Rural Female Labour Participation

The transition from the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) to the Viksit Bharat Guarantee for Rozgar and Ajeevika Mission (Gramin) Act (VB-G RAM G) marks a significant shift in India's rural employment policy. While the new legislation promises an increase in guaranteed work from 100 to 125 days, critics argue that the structural changes and conditional job availability may undermine the hard-won economic autonomy of over 26 crore rural workers, particularly women.

### Core Analysis and Concerns for Rural Women

- **Dilution of the Demand-Driven Nature:** Unlike MGNREGA, which functioned as a legal "right to work" triggered by worker demand, the VB-G RAM G is perceived as shifting toward a more conditional and supply-led model, potentially eliminating the absolute guarantee of work on demand.
- **Erosion of the Rural Safety Net:** The provision that may restrict guaranteed work during the 60 days of peak agricultural seasons could force women back into the informal agrarian market, where they lack wage parity, proximity to home, and bargaining power against landowning classes.
- **Impact on Financial Autonomy:** Women's participation in MGNREGA rose from 48% in 2008-09 to nearly 58% in 2024-25. By providing equal wages and direct payments, the scheme reduced dependence on male family members; any reduction in accessible work threatens this social progress.
- **Reinforcement of Gender Hierarchies:** In scenarios of excess labor supply, patriarchal norms often relegate women to "secondary" status. Conditional job availability under the new law may prioritize male heads of households, further marginalizing women from the workforce.
- **Operational Challenges for Women:** Features of MGNREGA such as worksites within a 5 km radius and mandatory crèche facilities were pivotal for women balancing domestic duties. A revamped scheme that prioritizes "efficiency" over "proximity" could increase commute costs and time poverty for rural women.
- **Lack of Stakeholder Consultation:** The transition occurred without extensive consultation with the primary beneficiaries—the workers and civil society—raising concerns about the top-down implementation of a scheme that serves as a critical fallback during market failures.



### Constitutional & Legal Provisions

Provision/Act	Description and Relevance
Article 21	The Right to Life includes the Right to Livelihood; MGNREGA was a legislative tool to realize this constitutional goal.
Article 39(d)	Directive Principle of State Policy (DPSP) ensuring "Equal pay for equal work" for both men and women.
Article 41	Directs the State to secure the right to work, education, and public assistance in cases of unemployment within its economic capacity.



Provision/Act	Description and Relevance
Schedule VII (Entry 24)	Welfare of labor including conditions of work, provident funds, and unemployment.
Section 3 (MGNREGA)	The statutory right to 100 days of unskilled manual work for every rural household.

### Key Definitions

- **Female Labour Force Participation Rate (FLFPR):** The percentage of women in the population who are either employed or actively seeking work.
- **Mode of Employment (Demand-driven vs. Supply-driven):** Demand-driven implies the government must provide work whenever a citizen asks for it; supply-driven means the government provides work based on available projects and budget.
- **Wage Parity:** Ensuring that workers are paid the same amount for the same volume of work, regardless of gender, a feature strictly enforced under the previous MGNREGA framework.
- **Time Poverty:** A situation where an individual (usually women) lacks enough time for rest or leisure due to the burden of both paid work and unpaid domestic labor.

### Conclusion

While the VB-G RAM G Act aims to align rural employment with the "Viksit Bharat" vision by increasing the total days of work, its success hinges on maintaining the "guarantee" element. If the scheme becomes conditional or restricted during peak seasons, it risks reversing the gains made in rural women's empowerment. True reform should address implementation bottlenecks—such as wage delays—without compromising the legal right to work that provides a vital floor for rural wages and dignity.

### UPSC Relevance

- **GS Paper II:** Social Justice, Welfare schemes for vulnerable sections, and issues arising out of their design and implementation.
- **GS Paper III:** Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System; Indian Economy (Employment and Growth).
- **Mains Value Addition:** Use data on FLFPR and the "feminization of MGNREGA" to argue for gender-sensitive policy design in rural development.

## 6. Private Spacotech and the Strategic Pivot to Defence Surveillance

India's decision to liberalize the space sector five years ago is entering a transformative phase. While early success was found in agriculture and climate data, homegrown startups like Pixxel, Digantara, and Skyroot Aerospace are now pivoting toward defense surveillance. This transition from purely commercial ventures to dual-use strategic assets marks the "next frontier" for India's private space economy, aiming to capture a significant share of the global and domestic military intelligence market.



## Key Highlights for UPSC Prelims & Mains

- **Strategic Pivot to Defence:** Major spacetechn startups are now targeting at least 50% of their revenue from defense contracts, shifting focus from "slow-growth" commercial data to lucrative surveillance and reconnaissance missions.
- **Projected Economic Growth:** The Indian private space economy is forecasted to grow from **\$8.5 billion to \$44 billion** over the next eight years, representing an annualized growth rate of **23%**, according to IN-SPACE.
- **The "Proven in Space" Challenge:** Unlike the state-run ISRO, private entities must independently validate their hardware in orbit to secure high-stakes military contracts, as they cannot solely rely on ISRO's institutional reputation.
- **Diversification of Offerings:** Startups are moving beyond mere satellite launches to specialize in niche areas like Space Situational Awareness (SSA), high-resolution hyperspectral imaging, and dedicated launch vehicles for small satellites.
- **Dual-Use Technology:** The convergence of civilian data (climate/agriculture) and military intelligence (border surveillance) allows startups to maintain "practical revenue streams" while serving national security interests.
- **Global Aspirations:** Indian startups are not just looking at the Ministry of Defence (MoD) but are positioning themselves to compete for international defense and government contracts, leveraging India's cost-effective engineering.



## Constitutional & Legal Provisions

Provision/Body	Description and Relevance
IN-SPACE	The <b>Indian National Space Promotion and Authorization Centre</b> acts as a single-window autonomous nodal agency for promoting and regulating private space activities.
NewSpace India Ltd (NSIL)	The commercial arm of ISRO responsible for enabling Indian industries to take up high-technology space-related activities.
Space Policy 2023	A landmark policy that institutionalized the role of the private sector in end-to-end space activities, including satellite communication and remote sensing.
Entry 6, Union List	"Atomic energy and mineral resources necessary for its production" and "Space" (implied via residuary powers under Entry 97) fall under the exclusive domain of the Parliament.

## Key Definitions

- **Hyperspectral Imaging:** A technique that collects and processes information from across the electromagnetic spectrum to identify objects/materials (used by Pixxel for both crop health and military camouflage detection).



- **Space Situational Awareness (SSA):** The tracking of objects (satellites and debris) in orbit to avoid collisions and monitor adversarial maneuvers (the core focus of Digantara).
- **Dual-Use Technology:** Products or technologies developed for civilian purposes which can also have significant military applications.
- **Small Satellite Launch Vehicle (SSLV):** Cost-effective, "on-demand" rockets designed specifically to deploy small satellites (up to 500kg) into Low Earth Orbit (LEO).

## Conclusion

The evolution of Indian spacetechn startups from data providers to defense partners signifies the maturing of the domestic ecosystem. By aligning with national security requirements, these firms are solving the "slow growth" problem inherent in purely commercial satellite services. For India to reach its **\$44 billion** space economy goal, the synergy between private innovation and defense procurement will be the primary engine of growth, ensuring that "Atmanirbhar Bharat" extends into the final frontier.

## UPSC Relevance

- **GS Paper III:** Science and Technology- developments and their applications and effects in everyday life; Achievements of Indians in science & technology; indigenization of technology and developing new technology.
- **GS Paper III:** Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges.
- **Mains Value Addition:** Use the 23% CAGR and \$44 billion projection to substantiate arguments regarding the role of private sector participation in enhancing national strategic capabilities.

## 7. Structural Shift in Uttar Pradesh's FDI Landscape: Road to \$1 Trillion Economy

Uttar Pradesh (UP) has recorded a significant surge in Foreign Direct Investment (FDI), attracting ₹5,963 crore (\$660 million) in the first half of FY26 (April-September). This represents a nearly elevenfold increase compared to the ₹550 crore received in the same period of the previous fiscal year. This growth underscores the state's transition from a marginal investment recipient to a structured industrial destination, aligning with India's national goal of reaching \$100 billion in annual FDI.

### Key Drivers of FDI Growth in Uttar Pradesh

- **Exponential Growth and Pipeline:** The state has moved beyond sporadic spikes to a structural surge, with a formal pipeline of 22 applications worth ₹17,810 crore and nearly 30 additional potential projects valued at over ₹56,000 crore.
- **Strategic Industrial Hubs:** The Noida-Greater Noida-Yamuna Expressway belt has emerged as a premier cluster for electronics and semiconductors, anchored by major projects like the ₹3,700-crore HCL-Foxconn electronics manufacturing hub.





- **Policy and Institutional Framework:** Investment growth is driven by robust land aggregation policies, a streamlined single-window clearance system, and dedicated "Country Desks" providing end-to-end handholding for investors from nations like Japan, South Korea, and Germany.
- **Sectoral Diversification:** While electronics lead the surge, the state is aggressively targeting high-growth frontier sectors including technical textiles, green hydrogen, and semiconductor-linked manufacturing.
- **Alignment with National Goals:** UP's strategy focuses on contributing to India's \$5 trillion national GDP target and the \$100 billion annual FDI ambition by positioning itself as a competitive alternative to traditional coastal industrial states.
- **Incentive-Driven Ecosystem:** The state's aspiration to become a \$1 trillion economy is supported by specific fiscal and non-fiscal incentives designed to reduce the cost of doing business and improve ease of entry for multinational corporations.

### Constitutional & Legal Provisions

Provision/Act	Context & Relevance
Article 246 (Seventh Schedule)	'Industries' is a State List subject (Entry 24), but 'Foreign Exchange' and 'Interstate Trade' are Union List subjects, requiring Centre-State coordination for FDI.
FEMA, 1999	The Foreign Exchange Management Act regulates the inflow of foreign capital; states must ensure local policies align with these central regulations.
PM Gati Shakti	A national master plan for multi-modal connectivity that UP utilizes to integrate its industrial zones with logistics and transport infrastructure.
Single Window Clearance Act	State-level legislation that mandates time-bound approvals for industrial projects to enhance the "Ease of Doing Business."

### Key Definitions for Value Addition

- **Foreign Direct Investment (FDI):** An investment made by a firm or individual in one country into business interests located in another country, typically by establishing business operations or acquiring assets.
- **Single-Window System:** A facility that allows trade and investment stakeholders to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements.
- **Land Aggregation:** The process of consolidating small parcels of land into larger tracts suitable for industrial development, often a major bottleneck in Indian manufacturing.
- **Green Hydrogen:** Hydrogen produced by splitting water into hydrogen and oxygen using renewable electricity, identified as a key thrust area for UP's future energy landscape.

### Conclusion

The dramatic rise in FDI inflows into Uttar Pradesh signifies a successful "branding" of the state as a reliable industrial heartland. By leveraging its demographic dividend and massive infrastructure projects like the Yamuna Expressway, UP is successfully challenging the dominance of coastal states in attracting high-



tech manufacturing. However, sustaining this momentum will require continued focus on labor skill-upgradation and the timely execution of the proposed ₹56,000 crore investment pipeline.

### UPSC Relevance

- **GS Paper II:** Federalism and the role of states in India's international economic engagements; Governance and Ease of Doing Business.
- **GS Paper III:** Indian Economy and issues relating to planning, mobilization of resources, and growth; Changes in industrial policy and their effects on industrial growth.
- **Prelims Factor:** Knowledge of FDI trends, the role of DIPP/DPIIT, and specific industrial corridors like the Delhi-Mumbai Industrial Corridor (DMIC) which impacts UP.

## 8. Periodic Labour Force Survey: Analysing December 2025 Unemployment Trends

India's unemployment rate for individuals aged 15 years and above remained largely stable at 4.8% in December 2025, showing a marginal increase from 4.7% in November. According to the latest data, the labour market exhibited a dichotomy between rural stability and urban fluctuations. While rural joblessness remained static, urban unemployment edged up to 6.7% from 6.5%, highlighting structural challenges in the urban industrial and services sectors.

### Key Statistical Highlights and Trends

- **National Stability:** The overall unemployment rate of 4.8% indicates a resilient labour market despite global headwinds, though the marginal 0.1% rise suggests a slowing of new job creation at the year-end.
- **Urban-Rural Divide:** Urban areas continue to face higher pressure (6.7%) compared to rural areas, reflecting the "disguised unemployment" often found in agriculture and the saturation of the urban informal sector.
- **Rural Resilience:** Rural unemployment remained unchanged, largely supported by the Kharif harvest activities and the onset of Rabi sowing, which traditionally absorbs the rural workforce.
- **Urban Strain:** The rise in urban unemployment to 6.7% underscores persistent mismatches between skill sets and market demand, alongside potential cooling in the construction and manufacturing segments.
- **Age Demographics:** The survey focuses on the 15+ age group, which is critical for India's "demographic dividend," highlighting the need for targeted policy intervention in the youth segment.
- **Labour Force Participation:** While unemployment is stable, the quality of employment and the Labour Force Participation Rate (LFPR) remain the broader metrics of concern for long-term economic health.

### Constitutional & Legal Provisions

Provision/Act	Relevance to Employment
Article 41	DPSP: Directs the State to secure the right to work and public assistance in cases of unemployment.



Provision/Act	Relevance to Employment
Article 39	DPSP: Ensures that citizens have the right to an adequate means of livelihood and equal pay for equal work.
Code on Wages, 2019	Aims to universalize the provisions of minimum wages and timely payment of wages to all employees.
National Career Service (NCS)	A mission-mode project for establishing a nationwide platform to bridge the gap between job seekers and employers.

### Key Definitions for Value Addition

- **Unemployment Rate (UR):** The percentage of persons unemployed among the persons in the labour force.
- **Labour Force Participation Rate (LFPR):** The percentage of persons in the labour force (working or seeking work) in the total population.
- **Worker Population Ratio (WPR):** The percentage of employed persons in the total population.
- **Disguised Unemployment:** A phenomenon where more people are employed than actually needed, typically seen in the Indian agricultural sector where marginal productivity is zero.

### Conclusion

The stability in India's unemployment rate at 4.8% is a positive indicator of macroeconomic steady-state, yet the rising urban joblessness serves as a cautionary signal. To capitalize on its demographic transition, India must shift focus from mere "employment numbers" to "employment quality," ensuring that the urban workforce is absorbed into high-productivity sectors. Addressing the urban-rural gap through skill development and industrial decentralization remains the primary challenge for 2026.

### UPSC Relevance

- **GS Paper III:** Issues relating to planning, mobilization of resources, growth, development, and employment.
- **GS Paper II:** Government policies and interventions for development in various sectors.
- **Mains Perspective:** Useful for answering questions on the "Jobless Growth" narrative, the effectiveness of the PLFS data, and the impact of urban migration on the labour market.

## 9. Strengthening Nuclear Governance: Balancing Private Participation and Safety

The passage of the **Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Bill, 2025**, marks a historic shift in India's energy policy. By dismantling the decades-old state monopoly and inviting private capital, India aims to scale its nuclear capacity from the current **8.8 GW to 100 GW by 2047**. However, this expansion brings a critical imperative: ensuring that regulatory oversight is robust enough to handle the complexities of private sector involvement and the unique risks associated with nuclear technology.



### Key Highlights for UPSC Prelims & Mains

- **The SHANTI Act 2025:** A landmark legislation that repeals the Atomic Energy Act (1962) and the Civil Liability for Nuclear Damage Act (2010), consolidating nuclear laws to facilitate private and foreign participation.
- **Target 2047:** Under the "Nuclear Energy Mission for Viksit Bharat," India plans a massive 11-fold expansion to reach **100 GW** of nuclear capacity by the centenary of independence.
- **Small Modular Reactors (SMRs):** The government has allocated **₹20,000 crore** for the development of SMRs (like the Bharat Small Reactor - 220 MWe), which are safer, quicker to deploy, and suitable for captive industrial use.
- **Liability Reform:** To attract investors, the new law caps operator liability (ranging from **₹100 crore to ₹3,000 crore** based on thermal power) and shifts from automatic supplier liability to a contractual-only recourse, aligning India with global conventions like the CSC.
- **Regulatory Elevation:** The **Atomic Energy Regulatory Board (AERB)** has been granted statutory status, moving it toward greater independence from the Department of Atomic Energy (DAE) to prevent conflicts of interest.
- **Investment Pipeline:** The sector is now open to **49% private equity**, with major domestic conglomerates already expressing intent to build captive power plants for energy-intensive sectors like steel and aluminum.



### Constitutional & Legal Provisions

Act/Provision	Description and Relevance
<b>SHANTI Act, 2025</b>	The primary legislative framework enabling private entry, reformed liability, and statutory backing for the regulator.
<b>Union List (Entry 6)</b>	Grants the Central Government exclusive jurisdiction over atomic energy and mineral resources.
<b>Section 13 (SHANTI Act)</b>	Caps nuclear damage liability at <b>300 million Special Drawing Rights (SDRs)</b> (~₹3,864 crore) to ensure financial predictability for operators.
<b>CSC (International)</b>	The <b>Convention on Supplementary Compensation</b> for Nuclear Damage; India's new laws are designed to be "CSC-compliant" to encourage global technology transfer.

### Key Definitions for Value Addition

- **Small Modular Reactors (SMRs):** Advanced nuclear reactors that have a power capacity of up to **300 MW(e)** per unit, which is about one-third of the generating capacity of traditional nuclear power reactors.



- **Base Load Power:** The minimum amount of electric power delivered or required over a given period at a constant rate; nuclear is ideal for this as it is not intermittent like solar or wind.
- **Information Asymmetry:** A situation where one party (the private operator) has more or better information than the other (the regulator), which is a major risk in high-tech sectors like nuclear energy.
- **Right of Recourse:** The legal right of a plant operator to claim damages from a technology supplier in the event of an accident caused by defective equipment.

## Conclusion

India's nuclear "reboot" is a calculated gamble to meet its net-zero goals by 2070 while sustaining industrial growth. While opening the gates to private capital is necessary to bridge the **\$217 billion** funding gap, the state must not trade off safety for speed. The true test of the SHANTI Act will lie in the AERB's ability to act as a "fearless" regulator—one capable of policing powerful corporations with the same rigor it has applied to public sector units.

## UPSC Relevance

- **GS Paper III:** Energy security, Infrastructure, and Science & Technology (indigenization of technology).
- **GS Paper II:** Statutory, regulatory, and various quasi-judicial bodies; Government policies and interventions for development.
- **Ethics (GS Paper IV):** The Bhopal Gas Tragedy legacy vs. the need for industrial development; corporate accountability in high-risk sectors.

## 10. NITI Aayog Report: Strategic Convergence for MSME Sector Efficiency

NITI Aayog recently released a landmark report titled "**Achieving Efficiencies in MSME Sector through Convergence of Schemes.**" The report serves as a strategic roadmap to address the fragmentation in the support ecosystem for Micro, Small, and Medium Enterprises (MSMEs). By proposing a shift from isolated ministerial actions to a unified "whole-of-government" approach, the report aims to amplify the impact of existing interventions, reduce administrative redundancies, and simplify the journey for nearly 6.3 crore MSMEs in India.

### Key Highlights and Strategic Recommendations

- **The "Convergence First" Mandate:** The report identifies that the Ministry of MSME currently manages 18 distinct schemes with overlapping objectives. It advocates for "cautious convergence"—merging similar programs to eliminate duplication while safeguarding specialized initiatives like the National SC/ST Hub.
- **Dual Framework for Integration:** The strategy relies on two pillars: **Information Convergence** (integrating data across Central and State levels for better decision-making) and **Process Convergence** (aligning operational workflows and unifying similar scheme components).
- **AI-Powered Centralized Digital Portal:** A core recommendation is the creation of a "one-stop" digital platform. This portal would utilize AI chatbots and real-time dashboards to provide MSMEs with instant access to scheme information, compliance requirements, and market intelligence.



- Unified Cluster Development:** The report proposes merging the **Scheme of Fund for Regeneration of Traditional Industries (SFURTI)** with the **Micro and Small Enterprises – Cluster Development Programme (MSE-CDP)**. This would create a single governance structure to scale up traditional crafts while modernizing infrastructure.
- Three-Tier Skilling Structure:** To resolve fragmented training initiatives, the report suggests a streamlined hierarchy: Entrepreneurship & Business Skills, MSME Technical Skills, and specialized training for Rural and Women Artisans.
- Specialized Marketing & Innovation Wings:** Integration of the **ASPIRE** scheme into the **MSME Innovative** framework is suggested to better support agro-rural startups. Additionally, a dedicated Marketing Assistance Wing is proposed to bridge the gap between domestic production and global market access.



### Constitutional & Legal Provisions

Provision/Act	Context & Relevance
<b>MSMED Act, 2006</b>	The primary legal framework governing the classification, development, and competitiveness of MSMEs in India.
<b>Article 39 (a) &amp; (b)</b>	Directive Principles (DPSP) ensuring citizens have the right to an adequate means of livelihood and that ownership of material resources subserves the common good.
<b>Article 43</b>	Directs the State to promote cottage industries on an individual or co-operative basis in rural areas.
<b>Schedule VII (Entry 24)</b>	'Industries' fall under the State List, but 'Development of Industries' under Entry 52 of the Union List allows Central intervention in the public interest.

### Key Definitions for Value Addition

- MSME Convergence:** The process of aligning various government schemes to create a unified, more efficient delivery mechanism for beneficiaries.
- Information Asymmetry:** A market failure where one party (often the government or large firms) has more information than the other (small enterprises), leading to poor uptake of beneficial schemes.
- Common Facility Centers (CFCs):** Shared infrastructure (labs, testing centers, tool rooms) provided under cluster schemes to help small units reduce capital expenditure.
- Regeneration of Traditional Industries:** Efforts specifically aimed at revitalizing endangered arts and crafts through modern technology and market linkages.



## Conclusion

The NITI Aayog report transitions the MSME policy narrative from "more schemes" to "better delivery." In an era where MSMEs contribute nearly **30% to India's GDP** and **45% to exports**, systemic efficiency is not just an administrative goal but an economic necessity. By leveraging Digital Public Infrastructure (DPI) and AI, the proposed convergence framework can turn fragmented support into a cohesive engine for "Viksit Bharat."

## UPSC Relevance

- **GS Paper III:** Indian Economy and issues relating to planning, mobilization of resources, growth, development, and employment; Effects of liberalization on the economy.
- **GS Paper II:** Government policies and interventions for development in various sectors and issues arising out of their design and implementation.
- **Mains Value Addition:** Use the "Two-pronged approach" (Information vs. Process Convergence) to answer questions on administrative reforms and "Ease of Doing Business."

  
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