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# VIDHVATH IAS KAS ACADEMY & STUDY CENTRE

## DAILY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

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The proliferation of "Cabinet Status" appointees has often been criticized as a "drain on the exchequer" and a method of political patronage. By removing these ranks, the government addresses the "Principle of Subsidiarity" and ensures that administrative roles are not conflated with political rewards. Furthermore, the 20% salary deferment is a rare instance of executive-level austerity, setting a precedent for state-led financial recovery during periods of economic stress. ....	16
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## 1. Protection and Promotion of Traditional Medicinal Knowledge in India

India's rich heritage of traditional medicine is being systematically safeguarded through digital integration and legal frameworks. The following points summarize the recent advancements in protecting Traditional Medicinal Knowledge (TMK):

- **TKDL as a Global Defensive Barrier:** The Traditional Knowledge Digital Library (TKDL), a joint initiative of CSIR and the Ministry of Ayush, acts as a "prior art" database. By transcribing ancient texts into five international languages, it prevents the misappropriation of Indian medicine through unethical patenting (biopiracy) in 18 global patent offices.
- **Digital Transformation of Ayush:** Beyond TKDL, portals like **Ayusoft**, **AMAR** (Ayush Manuscripts Advanced Repository), and **e-Medha** have been launched. These platforms digitize rare manuscripts and research, transforming classical wisdom into searchable, authentic knowledge repositories for modern scientific validation.
- **Tribal and Folk Medicine Documentation:** Specialized institutions, such as the North Eastern Institute of Ayurveda & Folk Medicine Research, are actively documenting the healing practices of indigenous tribes (e.g., Ao, Tai Phake, and Khasi). This ensures that localized oral traditions are preserved and validated against clinical standards.
- **Institutional Framework for Research:** The **Ayurgyan Scheme** supports R&D through three pillars: Capacity Building, Research & Innovation, and Ayurveda Biology. Initiatives like **CCRAS-AGNI** aim to mainstream pragmatic Ayurvedic practices through evidence-based appraisal and training for practitioners.
- **International Cooperation and Standardization:** The Ministry of Ayush has signed over 90 MoUs globally to promote Ayush exports and academic chairs. Concurrently, the Office of the Controller General of Patents has issued specific guidelines to ensure that only truly novel inventions—not existing TMK—receive patent protection.

### Key Definitions

- **Prior Art:** Any evidence that your invention is already known. TKDL provides this evidence to patent examiners to prove that a "new" claim might actually be centuries-old Indian knowledge.
- **Biopiracy:** The practice of commercially exploiting naturally occurring biochemical or genetic material or traditional knowledge without proper authorization or compensation to the indigenous community.
- **Sowa Rigpa:** One of the world's oldest living medical traditions, popular in the Himalayan belt, focusing on the principle of Jung-wa-nga (five elements).



### Constitutional & Legal Provisions

- **Article 51A (f):** Fundamental Duty to value and preserve the rich heritage of the country's composite culture.
- **Biological Diversity Act, 2002:** Regulates access to biological resources and ensures "Fair and Equitable Benefit Sharing" through the National Biodiversity Authority (NBA).
- **Intellectual Property Rights (IPR) Guidelines:** The Controller General of Patents (CGPDTM) uses specific "Ayush-related Invention Guidelines" to filter out patent applications that attempt to claim traditional knowledge.



## Conclusion

The shift from oral traditions to digitized, evidence-based repositories marks a significant milestone in India's soft power and healthcare sovereignty. By bridging the gap between ancient "Vaidya" wisdom and modern patent law, India not only protects its intellectual property but also positions Ayush as a scientifically viable alternative in the global wellness market.

## UPSC Relevance

**GS Paper II:** Government policies and interventions for development in various sectors; Issues relating to Health. **GS Paper III:** Intellectual Property Rights (IPR); Conservation, environmental pollution, and degradation; Science & Technology- developments and their applications in everyday life. **Prelims:** TKDL, Ministry of Ayush schemes (Ayurgyan, AGNI), and international treaties related to Biodiversity and IPR.

## 2. e-NAM: Transforming Agricultural Marketing through Digital Integration

The National Agriculture Market (e-NAM) has emerged as a cornerstone of India's agricultural reforms, creating a unified national market for commodities. The following points highlight its current status and impact on the primary sector:

- **Pan-India Digital Integration:** Since its inception in 2016, e-NAM has integrated 1,656 wholesale mandis across 23 States and 4 Union Territories. This physical-to-digital transition breaks the geographical barriers of traditional marketing, allowing for a seamless trade flow across state lines.
- **Massive Stakeholder Participation:** The platform has onboarded over 1.80 crore farmers, 2.72 lakh traders, and 4,724 Farmer Producer Organizations (FPOs). By aggregating smallholders through FPOs, the platform provides even marginal farmers with the collective bargaining power required for better market access.
- **Economic Scale and Price Discovery:** As of early 2026, the cumulative trade value on the portal has reached ₹4.82 lakh crore, covering 13.22 crore metric tonnes of produce. The core strength of e-NAM lies in its transparent online bidding system, which ensures competitive price discovery and direct payment transfers to farmers' accounts.
- **Technological Advancement in Quality Assaying:** In states like Rajasthan, 134 mandis are utilizing AI and Machine Learning (ML) for quality testing. This automation reduces human error and significantly cuts down the time required for assaying, ensuring that farmers are paid based on the actual quality of their produce.
- **Financial Support for Infrastructure:** The Union Government provides a grant of up to ₹75 lakh per mandi to upgrade infrastructure. This funding is utilized for electronic weighing scales, quality testing labs, sorting and grading units, and the necessary software systems to maintain a high-tech ecosystem.
- **Streamlined Regulatory Environment:** To facilitate e-NAM, states are encouraged to reform their APMC Acts, specifically regarding single-point levy of market fees, unified trading licenses, and provision for e-trading.





## Key Definitions

- **Mandis:** Traditional wholesale markets regulated under the State APMC Acts where agricultural produce is sold through auction.
- **Quality Assaying:** The process of testing the physical and chemical properties of a commodity (e.g., moisture content, grain size) to determine its market grade.
- **Farmer Producer Organizations (FPOs):** A group of farmers who are members of an organization (often a company) that provides them with better access to technology, inputs, and markets.

## Constitutional & Legal Provisions

- **Entry 14 (State List):** Agriculture, including agricultural education and research.
- **Entry 28 (State List):** Markets and fairs.
- **Entry 33 (Concurrent List):** Trade and commerce in, and the production, supply, and distribution of domestic and imported products of any industry where the control of such industry by the Union is declared by Parliament to be expedient in the public interest.
- **APMC Act Reforms:** Since "Markets" is a State subject, the Central Government promotes the "Model APMC Act" to encourage states to adopt e-NAM compatible regulations.

## Conclusion

The e-NAM platform is more than just a trading portal; it is a structural reform aimed at eliminating the information asymmetry that has historically disadvantaged Indian farmers. By integrating cutting-edge technology like AI/ML and focusing on FPO participation, e-NAM is effectively creating a "One Nation, One Market" for agriculture, reducing the multi-layered intermediation that eats into farmers' profits.

## UPSC Relevance

**GS Paper III:** Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System; Technology missions; Economics of animal-rearing. **GS Paper II:** Government policies and interventions for development in various sectors. **Prelims Focus:** e-NAM features, Ministry of Agriculture & Farmers Welfare, Role of SFAC (Small Farmers' Agribusiness Consortium) as the lead agency, and the impact of AI in agriculture.

## 3. India Negotiates Safe Passage in Strait of Hormuz Amid Energy Security Concerns

The Indian government has initiated high-level diplomatic talks with Iran to ensure the safe transit of stranded energy vessels, highlighting the vulnerability of global maritime chokepoints. Key aspects of this strategic intervention include:

- **Strategic Maritime Intervention:** India is coordinating with Iranian authorities for the staggered passage of eight critical vessels (six LPG and two crude oil carriers) currently anchored near Qatar and the UAE. This diplomatic outreach aims to resolve a short-term energy crunch caused by regional maritime instability.
- **Criticality of the Strait of Hormuz:** As a vital chokepoint, the Strait is indispensable for India's energy matrix. Approximately 90% of India's LPG imports and 50% of its crude oil imports pass through this narrow waterway, making any disruption a direct threat to national economic stability.
- **Impact on Domestic Energy Security:** The stranded LPG tankers carry roughly 270,000 tonnes of gas, sufficient for 1.9 million domestic cylinders or three days of national consumption. The delay



has already triggered market volatility, including panic bookings and increased demand for electric cooking alternatives.

- **Logistical Preparedness:** To expedite recovery, western Indian ports have been directed to prioritize anchorage and unloading facilities. The "staggered" approach—releasing ships in batches of one or two—is designed to manage security risks while maintaining a steady inflow of fuel.
- **Broader Maritime Context:** A total of 22 Indian-flagged vessels are currently affected in the region. This crisis underscores the necessity of "Indian-flagged" fleet expansion and the role of the Indian Navy and diplomatic channels in protecting commercial interests in the "Extended Neighbourhood."



## Key Definitions

- **Strait of Hormuz:** A strategic link between the Persian Gulf and the Gulf of Oman; it is the world's most important oil transit chokepoint.
- **Indian-Flagged Vessels:** Ships registered in India and subject to Indian laws, entitled to protection by the Indian state during international conflicts or maritime crises.
- **Prior Art of Passage:** In maritime law, the right of merchant ships to navigate through territorial waters or international straits under specific safety and sovereignty conditions.

## Constitutional & Legal Provisions

- **Article 73:** The executive power of the Union extends to matters with respect to which Parliament has power to make laws, including "Foreign Affairs" and "Trade and Commerce with foreign countries."
- **The Admiralty (Jurisdiction and Settlement of Maritime Claims) Act, 2017:** Provides the legal framework for Indian interests in maritime claims and the safety of vessels.
- **United Nations Convention on the Law of the Sea (UNCLOS):** India adheres to UNCLOS, which defines the rights and responsibilities of nations regarding their use of the world's oceans, specifically the "Transit Passage" in international straits.

## Conclusion

The current standoff in the Strait of Hormuz serves as a reminder of India's heavy dependence on West Asian energy corridors. While immediate diplomatic engagement with Iran provides a temporary reprieve, the situation emphasizes the long-term need for diversifying energy sources (such as increasing Russian oil imports or US LNG) and expanding Strategic Petroleum Reserves (SPR) to insulate the domestic economy from geopolitical shocks.

## UPSC Relevance

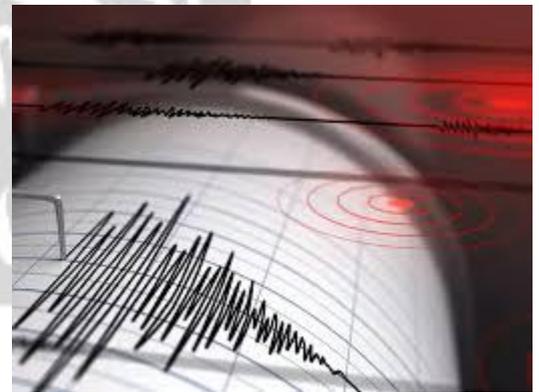
**GS Paper II:** India and its neighborhood- relations; Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests. **GS Paper III:** Infrastructure: Energy, Ports; Security challenges and their management in border areas (Maritime Security); Indian Economy and issues relating to planning, mobilization of resources. **Prelims Focus:** Mapping of the Strait of Hormuz, Persian Gulf, and Gulf of Oman; Major ports on India's western coast; Composition of India's energy import basket.



### 3. India to Expand Seismometer Network Fivefold for Enhanced Earthquake Early Warning (EEW)

To mitigate the devastating impact of seismic disasters, India is set to drastically scale up its monitoring infrastructure. The following points summarize the strategic shift in India's disaster management approach:

- **Massive Infrastructure Expansion:** India plans to increase its seismometer count from the current 300 to 1,500 units. This fivefold expansion aims to create a dense grid of monitoring stations, primarily focusing on the high-risk Himalayan belt and the Indo-Gangetic plains.
- **Leveraging Wave Physics for Alerts:** The system operates by detecting fast-moving, non-destructive Primary waves (P-waves). By identifying P-waves at the onset, authorities can issue alerts before the slower but highly destructive Secondary waves (S-waves) reach populated areas or critical assets.
- **Significant Lead-Time Improvement:** The objective is to extend the current warning lead time from a few seconds to up to 45 seconds. While earthquakes remain unpredictable in terms of "when" they will strike, this brief window allows for "Early Warning" once the rupture has begun.
- **Protection of Critical Infrastructure:** Even a 30 to 45-second window is sufficient to trigger automated safety protocols, such as stopping metro trains, shutting off gas pipelines to prevent fires, halting industrial machinery, and securing power grids and nuclear facilities.
- **Vulnerability Mapping:** With 59% of India's landmass prone to earthquakes—driven by the continuous collision of the Indian and Eurasian tectonic plates—the project addresses a critical gap in national security and economic resilience.
- **Economic Resilience:** According to the Coalition for Disaster Resilient Infrastructure (CDRI), India loses approximately \$1.73 billion annually due to earthquakes. A robust EEW system is expected to significantly reduce these fiscal and structural losses.



#### Key Definitions

- **Seismometer:** An instrument that measures and records the motion of the ground, including those of seismic waves generated by earthquakes, volcanic eruptions, and other seismic sources.
- **P-waves vs S-waves:** P-waves (Primary) are compressional waves that travel fastest through the earth; S-waves (Secondary) travel slower and move the ground up and down or side to side, causing the majority of structural damage.
- **Hypocentre & Epicentre:** The hypocentre is the actual point below the surface where the rock breaks; the epicentre is the point on the Earth's surface directly above the hypocentre.

#### Constitutional & Legal Provisions

- **National Disaster Management Act, 2005:** Provides the legal framework for the NDMA to spearhead such initiatives. Section 6 mandates the NDMA to lay down policies and guidelines for disaster management to ensure a timely and effective response.
- **Article 21:** The Right to Life under the Constitution has been interpreted by courts to include the right to a safe environment and protection from man-made or natural disasters through state intervention.
- **CDRI Framework:** As a founding member of the Coalition for Disaster Resilient Infrastructure, India is legally and diplomatically committed to implementing the "Sendai Framework for Disaster Risk Reduction (2015-2030)."



## Conclusion

The transition from a reactive to a proactive seismic policy marks a milestone in India's disaster governance. By investing in a dense seismological network, India is not merely installing hardware but building a "seconds-to-save" culture. This technological leap, combined with community-level drills, will be the difference between catastrophe and controlled management in one of the world's most seismically active zones.

## UPSC Relevance

**GS Paper III:** Disaster and Disaster Management; Science and Technology- developments and their applications; Infrastructure (Energy, Roads, Railways). **GS Paper I:** Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity etc., geographical features and their location. **Prelims Focus:** Seismic zones of India (Zone II to V), P and S wave characteristics, NDMA structure, and the role of the Ministry of Earth Sciences (MoES).

## 4. RBI Liquidity Management: Variable Rate Repo (VRR) Auction Infuses ₹48,014 Crore

The Reserve Bank of India (RBI) recently conducted a Variable Rate Repo (VRR) auction to address transient liquidity deficits in the banking system. The following points summarize the operational and macroeconomic significance of this move for the Indian economy:

- **Liquidity Infusion via VRR:** The RBI injected ₹48,014 crore into the banking system through a 7-day Variable Rate Repo auction. While the notified amount was ₹1.5 trillion, the actual uptake was significantly lower, indicating that the immediate liquidity crunch in the system may be less severe than initially estimated.
- **Cost of Funds:** The liquidity was infused at a weighted average rate and a cut-off rate of 5.26%. This rate serves as a critical signal for the short-term cost of borrowing within the interbank market, helping to keep the Call Money Rate aligned with the Repo Rate.
- **Addressing Transient Deficits:** VRR auctions are primarily used to manage "transient" or temporary liquidity mismatches caused by factors such as quarterly tax outflows, high government cash balances, or seasonal increases in currency demand.
- **Role of the Liquidity Adjustment Facility (LAF):** This auction is part of the RBI's revised Liquidity Management Framework, where the Main Operation is typically a 14-day VRR/VRRR, and Fine-tuning Operations (like this 7-day auction) are used to manage unexpected volatility.
- **Impact on Banking Operations:** By providing these funds, the RBI ensures that banks have sufficient liquidity to meet their CRR (Cash Reserve Ratio) requirements and credit demands without causing a spike in short-term interest rates.



## Key Definitions

- **Repo Rate:** The interest rate at which the RBI lends money to commercial banks against the collateral of government securities.
- **Variable Rate Repo (VRR):** An auction-based tool where the interest rate is not fixed by the RBI but determined by the bids placed by banks, usually starting at or above the prevailing Repo Rate.



- **Liquidity Adjustment Facility (LAF):** A tool used by the RBI that allows banks to borrow money through repurchase agreements (repos) or to make loans to the RBI through reverse repo agreements.

## Constitutional & Legal Provisions

- **RBI Act, 1934:** This Act provides the legal basis for the RBI to operate the monetary policy framework and manage liquidity in the economy. Section 17 of the Act specifically empowers the RBI to engage in repo and reverse repo transactions.
- **Fiscal Responsibility and Budget Management (FRBM) Act, 2003:** While primarily focused on fiscal deficits, the Act influences liquidity management as high government spending or hoarding of cash balances directly impacts the liquidity available in the banking system.
- **Monetary Policy Committee (MPC) Framework:** Under the 2016 amendment to the RBI Act, the MPC sets the policy (Repo) rate, while the RBI's internal department executes liquidity operations (like VRR) to ensure market rates stay close to that policy rate.

## Conclusion

The under-subscription of the ₹1.5 trillion VRR auction suggests that while there was a liquidity deficit, banks are perhaps cautious or find the current market rates acceptable. For the RBI, the primary goal remains "Price Stability" while ensuring an adequate flow of credit. Moving forward, the calibration of VRR and Variable Rate Reverse Repo (VRRR) will continue to be the main steering wheel for maintaining the "neutral" liquidity stance required in a recovering economy.

## UPSC Relevance

**GS Paper III:** Indian Economy and issues relating to planning, mobilization of resources, growth, development, and employment; Banking system and Monetary Policy. **Prelims Focus:** Liquidity Adjustment Facility (LAF) components, difference between Fixed and Variable Rate Repo, impact of liquidity on inflation, and the functions of the RBI under the RBI Act, 1934.

## 5. Mission Drone Shakti: Accelerating Self-Reliance in India's Drone Ecosystem

The Ministry of Civil Aviation has proposed a comprehensive ₹1,800 crore incentive scheme to transform India into a global drone hub by 2030. The following points highlight the strategic importance and core components of this initiative for the Indian economy and security:

- **Strategic Decoupling from Imports:** The primary objective of "Mission Drone Shakti" is to reduce heavy reliance on imported components, particularly from China. Currently, many smaller domestic players import over 50% of their parts, including flight controllers, motors, and sensors.
- **Structured Financial Outlay:** The proposed ₹1,800 crore allocation over five years is strategically divided: approximately ₹600 crore is dedicated to Research and Development (R&D), while the remaining ₹1,200 crore supports manufacturing and sales-linked incentives.
- **Value-Addition Linked Incentives:** Mirroring the Production Linked Incentive (PLI) model, benefits will be calculated based on "domestic value addition." This ensures that only companies contributing to the local supply chain—manufacturing airframes, propellers, and lithium-polymer batteries—receive fiscal support.





- **Inter-Ministerial Coordination:** Recognizing the multi-sectoral utility of Unmanned Aerial Vehicles (UAVs), 12 ministries are collaborating to integrate drone usage in agriculture (spraying/mapping), logistics, infrastructure inspection, and border surveillance.
- **Focus on MSMEs and Scalability:** While large entities like Adani Defence and Tata Advanced Systems lead the market, the scheme aims to provide "economies of scale" to smaller manufacturers. This seeks to prevent market monopolization and foster a robust, competitive component ecosystem.
- **Projected Market Growth:** With the domestic drone market expected to touch ₹1.66 trillion by FY28, this scheme acts as a catalyst to move from a ₹4,500 crore current valuation to a global leadership position in both manufacturing and services.

## Key Definitions

- **Remotely Piloted Aircraft System (RPAS):** The technical term for drones, encompassing the aircraft, the ground control station, and the terrestrial or satellite data link.
- **Domestic Value Addition:** The difference between the net sales turnover and the cost of imported raw materials/components, used as a metric to measure indigenization.
- **Bharat Drone Stack:** A flagship platform and network of indigenous component manufacturers aimed at creating a standardized, "made-in-India" technology stack for UAVs.

## Constitutional & Legal Provisions

- **Union List (Entry 29):** "Airways; aircraft and air navigation; provision of aerodromes..." gives the Central Government exclusive power to legislate on drone-related matters.
- **Drone Rules, 2021:** The foundational legal framework that liberalized drone operations in India by reducing requisite forms and types of fees, while establishing "Green Zones" for flight without prior permission.
- **DGFT Import Policy:** The Directorate General of Foreign Trade (DGFT) has previously imposed bans on the import of foreign drones (with exceptions for R&D and defense) to provide a "protective wall" for domestic manufacturers.

## Conclusion

Mission Drone Shakti represents a leap from the initial ₹120 crore PLI scheme toward a mature industrial policy. By prioritizing R&D and critical component manufacturing (the "brain" and "heart" of the drone), India is moving beyond mere assembly to true technological sovereignty. Success will depend on ensuring that the 70% indigenization seen in top-tier players trickles down to the entire grassroots ecosystem.

## UPSC Relevance

**GS Paper III:** Science and Technology- developments and their applications and effects in everyday life; Indigenization of technology and developing new technology; IT & Computers. **GS Paper II:** Government policies and interventions for development in various sectors and issues arising out of their design and implementation. **Prelims Focus:** Mission Drone Shakti, PLI Scheme for Drones, Drone Rules 2021 (Green/Yellow/Red zones), and the role of the Quality Council of India (QCI) in drone certification.

## 6. India's Energy Security and Economic Resilience

### Key Summary Points

- **Energy Sovereignty:** India is successfully mitigating energy shortages despite heightened geopolitical volatility in West Asia, primarily by diversifying supply routes and ramping up domestic output.



- **Strategic LPG Management:** To reduce dependency on the vulnerable Strait of Hormuz—which currently accounts for a significant portion of India's 65% LPG import share—the government has directed refineries to maximize domestic LPG production by diverting propane and butane.
- **Domestic Production Surge:** Policy interventions are projected to increase domestic LPG production by 25%, specifically earmarked for household consumption to shield citizens from global price shocks.
- **Macroeconomic Stability:** The Indian economy demonstrates "positional strength," having successfully navigated a "polycrisis" involving the COVID-19 pandemic, the Russia-Ukraine conflict, and global inflationary spikes.
- **Atmanirbharta as a Shield:** The Self-Reliance initiative is positioned not just as an industrial policy, but as a strategic buffer that insulates the domestic market from de-globalization trends and supply chain breakdowns.
- **Fiscal Authorization:** Parliament has approved the second batch of Supplementary Demands for Grants, totaling ₹2 trillion, providing the necessary fiscal headroom for additional government spending this fiscal year.

### Constitutional & Legal Framework

- **Article 114:** Relates to the **Appropriation Bill**, which gives the government the legal authority to withdraw funds from the Consolidated Fund of India after the passage of the Demands for Grants.
- **Article 115:** Governs **Supplementary, Additional, or Excess Grants**. These are presented when the amount authorized by the Appropriation Act for the current financial year is found to be insufficient for the needs of that year.
- **Essential Commodities Act, 1955:** Provides the legal basis for the government to regulate the production, supply, and distribution of energy resources like LPG to ensure equitable availability.



### Key Definitions

- **Strait of Hormuz:** A narrow, strategically vital waterway between the Persian Gulf and the Gulf of Oman; it is the world's most important oil transit chokepoint.
- **Supplementary Demands for Grants:** The additional expenditure required by the government over and above the amount for which Parliamentary approval was obtained during the Budget session.
- **De-globalization:** A process of diminishing interdependence and integration between certain units around the world, typically characterized by increased trade barriers and localized supply chains.

### Additional Strategic Observations

The government's directive to petrochemical complexes to divert Propane, Butane, and Propylene for LPG production highlights a shift toward "Integrated Refinery-Petrochemical" models. This flexibility allows India to prioritize fuel security over industrial chemical exports during global energy crunches.



## Conclusion

India's current economic trajectory is defined by a transition from passive consumption to active strategic management of global risks. By leveraging domestic refinery capacity and maintaining fiscal discipline through authorized supplementary spending, the state is reinforcing the "Atmanirbhar" framework to ensure that global "troubled waters" do not translate into domestic energy poverty.

## UPSC Relevance

- **GS Paper II:** Functions and responsibilities of the Union; Parliament and State Legislatures (Structure, functioning, and conduct of business—specifically the Budgetary process and Articles 112–117).
- **GS Paper III:** Indian Economy (Issues relating to planning, mobilization of resources, and growth); Infrastructure (Energy); and Security (Internal and External threats linked to energy dependency).
- **Prelims:** Strategic Chokepoints (Geography), Appropriation Bills vs. Finance Bills, and LPG import statistics.

## 7. CCI Investigation into Global Fragrance Cartels: Labour Market Implications

### Key Summary Points

- **First-of-its-kind Probe:** The Competition Commission of India (CCI) has initiated a landmark investigation into global fragrance giants (Givaudan, Firmenich, and IFF) for alleged "anti-poaching" agreements, marking the first time the regulator has scrutinized labour practices instead of traditional product price-fixing.
- **Anti-Poaching Agreements:** The investigation targets "gentlemen's agreements" where rival firms reportedly agreed not to hire each other's employees, thereby artificially restricting the free movement of talent and depressing wage growth.
- **Leniency Programme Trigger:** The probe was catalyzed by one of the involved companies approaching the CCI under its "leniency" framework, providing evidence (including over 30 internal emails) in exchange for reduced penalties and confidentiality.
- **Market Distortion:** Regulators argue that such no-poach deals distort the "market for talent," reducing the bargaining power of skilled workers and violating the principles of a competitive economic environment.
- **Global vs. Domestic Scope:** While the companies are global entities, the CCI is examining the impact on the Indian labour market, signaling a more aggressive stance on protecting domestic human capital from international corporate collusion.
- **Shift in Regulatory Focus:** This case signifies an evolution in Indian competition law, moving from a purely "consumer-centric" focus (prices of goods) to a "factor-market" focus (labour and wages).



## Constitutional & Legal Provisions

- **Competition Act, 2002:** The primary legislation governing the CCI. Section 3 of the Act prohibits "anti-competitive agreements," including cartels that directly or indirectly determine purchase or sale prices or limit/control production and supply.
- **Leniency Regulations (Section 46):** Provides the CCI power to impose lesser penalties if a member of a cartel provides "full, true, and vital disclosure" regarding the existence of the cartel.



- **Article 19(1)(g):** The Constitution of India guarantees the right to practice any profession or to carry on any occupation, trade, or business. Anti-poaching agreements are often viewed as a "restraint of trade" that impedes this fundamental right.
- **Section 27 of the Indian Contract Act, 1872:** Explicitly states that any agreement by which anyone is restrained from exercising a lawful profession, trade, or business of any kind is, to that extent, void.

## Key Definitions

- **Anti-Poaching Agreement:** An arrangement between two or more companies where they agree not to solicit or hire each other's employees. In competition law, this is increasingly viewed as a "wage-fixing" or "market-allocation" cartel.
- **Leniency Programme:** A whistleblower-style mechanism where a participant in a cartel reports the misconduct to the regulator to receive immunity or a significant reduction in fines.
- **Gentlemen's Agreement:** An informal, often unwritten agreement based on trust and mutual interest rather than a legal contract, frequently used in secretive cartel operations to bypass regulatory oversight.

## Additional Strategic Keypoints

The fragrance industry is highly concentrated, with a few global players controlling the majority of the market share. When such firms collude on hiring, it creates a "Monopsony" (a market situation with only a few buyers—in this case, buyers of labour), which prevents the "Price Discovery" of wages through natural demand and supply. This investigation aligns India with global trends seen in the US and EU, where regulators are increasingly targeting "No-Poach" clauses to protect employee rights.

## Conclusion

The CCI's investigation into the fragrance industry represents a sophisticated leap in India's regulatory landscape. By acknowledging that competition law extends to the protection of workers' mobility and wage integrity, the CCI is ensuring that "Atmanirbharta" and economic growth are supported by a fair and fluid labour market. This case will likely set a precedent for other sectors, such as IT and Pharmaceuticals, where talent poaching is common.

## UPSC Relevance

- **GS Paper II:** Statutory, regulatory, and various quasi-judicial bodies (Functioning of the CCI); Government policies and interventions for development in various sectors.
- **GS Paper III:** Indian Economy and issues relating to mobilization of resources, growth, and development; Effects of liberalization on the economy; Changes in industrial policy and their effects on industrial growth.
- **Prelims:** Composition and powers of the CCI; Features of the Competition Act, 2002; Concepts of Cartelization and Leniency.



## 8. Carbon Farming: Transforming Indian Agriculture into a Global Carbon Sink

### Key Summary Points

- **Emergence of Carbon Markets:** Indian climate-tech startups (e.g., Alt Carbon, Varaha, Mitti Labs) are leveraging agricultural practices to generate "carbon credits," turning environmental conservation into a high-value financial export.
- **Enhanced Rock Weathering (ERW):** By spreading crushed basalt powder on fields, startups accelerate a natural chemical process that permanently traps atmospheric  $\text{CO}_2$  in soil minerals while simultaneously boosting crop yields by up to 50%.
- **Waste-to-Wealth (Biochar):** Instead of stubble burning, crop residue is processed in oxygen-deprived reactors to create biochar. This carbon-rich charcoal locks emissions for decades and is sold as premium removal credits to global tech giants like Microsoft and Google.
- **Methane Mitigation in Paddy:** Techniques like Alternate Wetting and Drying (AWD) in rice cultivation reduce methane emissions—a gas 25 times more potent than  $\text{CO}_2$ —by 40-50%, providing farmers with water savings and carbon revenue.
- **Shift to "Carbon Removal":** Global corporations are moving away from "carbon avoidance" (preventing future emissions) toward "carbon removal" (physically extracting existing  $\text{CO}_2$ ), where India holds a competitive advantage due to lower operating costs and tropical weathering rates.
- **Scientific Verification (MRV):** The "Gold Standard" of these credits relies on rigorous Monitoring, Reporting, and Verification (MRV), utilizing mass spectrometry and soil modeling to prove the permanence of carbon storage.

### Constitutional & Legal Provisions

- **Article 48A (DPSP):** Mandates the State to protect and improve the environment and safeguard forests and wildlife.
- **Article 51A(g):** Establishes a Fundamental Duty for citizens to protect and improve the natural environment.
- **Energy Conservation (Amendment) Act, 2022:** Provides the legal framework for a **Carbon Credit Trading Scheme (CCTS)** in India, empowering the Central Government to specify a carbon credit trading scheme.
- **Paris Agreement (Article 6):** Enables international cooperation through carbon markets to meet Nationally Determined Contributions (NDCs).

### Key Definitions

- **Carbon Credit:** A tradable permit representing the removal or avoidance of one tonne of carbon dioxide equivalent ( $\text{CO}_2\text{e}$ ).
- **Biochar:** A stable, carbon-rich form of charcoal produced via **pyrolysis** (heating biomass in the absence of oxygen) used as a soil amendment.
- **Net Zero:** A state where the amount of greenhouse gas produced is balanced by the amount removed from the atmosphere.
- **Global South:** Refers broadly to regions of Latin America, Asia, Africa, and Oceania, often characterized by higher climate vulnerability and untapped natural carbon-sequestration potential.

### Additional Strategic Keypoints

- **Economic Impact:** Carbon credits currently trade between **\$150 and \$600** per tonne globally. India's ability to produce high-quality credits at roughly **\$300** makes it a "low-cost exporter" of climate solutions.



- **Agronomic Benefits:** Beyond the financial aspect, carbon farming improves soil health, reduces pesticide dependency, and increases the "water-holding capacity" of the land, addressing India's groundwater crisis.
- **Logistical Challenges:** The primary bottleneck remains the "Supply Chain of Carbon"—collecting biomass from millions of smallholders and maintaining lab-grade verification over 18-20 month cycles.

## Conclusion

The intersection of geology, agronomy, and digital finance is repositioning the Indian farmer as a critical infrastructure provider for global decarbonization. By converting "crop residue into gold," India is not only meeting its climate pledges but also creating a decentralized model for rural prosperity that insulates smallholders from the economic volatility of traditional agriculture.

## UPSC Relevance

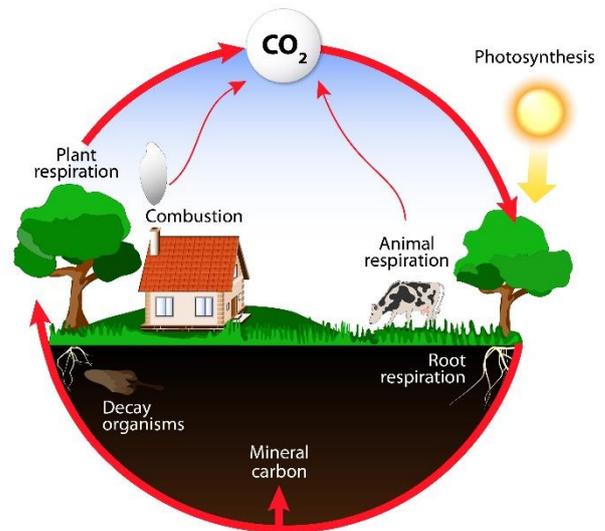
- **GS Paper III:** Environment (Climate Change, Carbon Sequestration); Agriculture (Soil health, stubble burning solutions, irrigation techniques); Economy (New financial instruments, Export potential).
- **GS Paper II:** Government Policies & Interventions (Carbon Credit Trading Scheme).
- **Prelims:** Concepts like Biochar, Methane emissions from rice (AWD), Paris Agreement mechanisms, and the role of basalt in Carbon Capture.

## 9. Administrative Reforms and Fiscal Prudence: Himachal Pradesh Case Study

### Key Summary Points

- **Withdrawal of Cabinet Status:** The Himachal Pradesh government has officially revoked the "Cabinet Rank" status previously accorded to political appointees, including chairpersons and vice-chairpersons of state boards, corporations, and commissions.
- **Scope of De-designation:** This administrative rollback extends to principal advisers and political advisers, effectively streamlining the state's executive hierarchy and reducing the "inflation" of ministerial ranks.
- **Salary Deferment Measures:** To address the prevailing financial crunch, the government has mandated a 20% deferment of salaries and monthly emoluments for these high-ranking officials until September 30, 2026.
- **Reduction in Protocol Costs:** The move is strategically aimed at cutting "hidden" costs associated with Cabinet status, such as specialized security cover, official vehicles, staff entitlements, and discretionary allowances.
- **Fiscal Consolidation:** The decision is part of a broader "Fiscal Prudence" drive to bridge the state's budget deficit and redirect resources from administrative overheads to development projects.
- **Administrative Directives:** All Administrative Secretaries have been tasked with the immediate enforcement of these orders, ensuring a swift transition to the new protocol standards.

## CARBON CYCLE





## Constitutional & Legal Provisions

- **Article 163:** Deals with the Council of Ministers to aid and advise the Governor. While the Constitution defines the Council, the "Cabinet Rank" for non-legislators is often a discretionary political entitlement.
- **Article 164(1A):** The 91st Constitutional Amendment Act (2003) limits the size of the Council of Ministers to 15% of the total strength of the Legislative Assembly. Granting "Cabinet status" to political appointees is often seen as a way to bypass this ceiling, though they aren't part of the formal Council.
- **State Executive Discretion:** Under the Rules of Business framed under **Article 166**, the State Government has the power to define the ranks and protocols of various functionaries within the executive branch.
- **Fiscal Responsibility and Budget Management (FRBM) Act:** State-level versions of this act mandate governments to reduce fiscal deficits, providing a legal impetus for the austerity measures seen in Himachal Pradesh.

Evaluation of Finances of the State of Himachal Pradesh  
An Analysis for the XVI Finance Commission of India



## Key Definitions

- **Cabinet Rank Status:** A ceremonial or administrative designation given to non-ministers, granting them the same perks, salary, and protocol standing as a Cabinet Minister.
- **Fiscal Prudence:** The exercise of extreme care and wisdom in the management of public finances to ensure long-term economic stability and debt sustainability.
- **Supplementary Grants:** While not directly mentioned, the funding for such political offices often comes from the state budget, necessitating legislative approval if initial estimates are exceeded.

## Additional Strategic Keypoints

The proliferation of "Cabinet Status" appointees has often been criticized as a "drain on the exchequer" and a method of political patronage. By removing these ranks, the government addresses the "Principle of Subsidiarity" and ensures that administrative roles are not conflated with political rewards. Furthermore, the 20% salary deferment is a rare instance of executive-level austerity, setting a precedent for state-led financial recovery during periods of economic stress.

## Conclusion

Himachal Pradesh's decision to de-link political appointments from Cabinet-level protocols is a significant step toward rationalizing state expenditure. It balances the need for political advisory with the harsh realities of fiscal deficits. This reform serves as a model for "Austerity Governance," demonstrating that administrative efficiency and political management can be decoupled to safeguard the public treasury.

## UPSC Relevance

- **GS Paper II:** Indian Constitution (Provisions regarding the Council of Ministers); Governance (Administrative reforms and austerity measures); Statutory and Quasi-judicial bodies (Boards and Commissions).



- **GS Paper III:** Indian Economy (Fiscal Policy, Budgeting, and FRBM Act compliance); Mobilization of resources.
- **Ethics (GS IV):** Public Service Values and Ethics in Public Administration (Austerity vs. Political Patronage).

## 10. The Strategic Evolution of India's West Asia Policy: Dynamics of the New Reset

### Key Summary Points

- **From Balancing to Decisive Engagement:** India has transitioned from its traditional "balancing act" to a "hard diplomacy" approach, prioritizing bilateral interests and strategic convergence over the "please-all" mantras of the past.
- **Economic and Diaspora Pillars:** The Gulf Cooperation Council (GCC) has emerged as India's largest socio-economic partner, with bilateral trade exceeding \$160 billion and a 10 million-strong diaspora providing significant inward remittances and soft power.
- **De-hyphenation and Security Ties:** A major achievement of the past decade is the successful de-hyphenation of India's relations with Pakistan in the region, alongside growing defense cooperation and India's recognition as a "status quo" power.
- **Response to Regional Turmoil:** In the wake of recent Iran-Israel hostilities and threats to the Strait of Hormuz, India has prioritized the stability of Gulf monarchies, acknowledging their search for security paradigms beyond the traditional "Pax Americana."
- **The "GCC+1" Opportunity:** As regional instability shakes the GCC's image as an "oasis of stability," India has a historic opportunity to position itself as a viable alternative hub for capital and talent through proactive eco-diplomacy.
- **Strategic Autonomy:** India's refusal to cite third-party dictates or "balance" views on sensitive issues like the two-state solution or Iran's nuclear program reflects growing confidence as a credible, autonomous global power.



### Constitutional & Legal Provisions

- **Article 51 (DPSP):** Mandates that the State shall endeavor to promote international peace and security, maintain just and honorable relations between nations, and foster respect for international law.
- **Article 73:** Extends the executive power of the Union to all matters with respect to which Parliament has the power to make laws, including "Foreign Affairs" (Entry 10, Union List, Seventh Schedule).
- **The Diplomatic Relations (Vienna Convention) Act, 1972:** Provides the legal framework for giving effect to the Vienna Convention on Diplomatic Relations, governing India's overseas missions.

### Key Definitions

- **Strategic Autonomy:** The ability of a state to pursue its own national interests and adopt its own preferred foreign policy without being constrained by other states.



- **De-hyphenation:** A diplomatic strategy where India deals with two rival countries (e.g., Israel and Palestine, or Iran and Saudi Arabia) on their own merits, independent of its relationship with the other.
- **Status Quo Power:** A nation that supports the existing international order and seeks stability rather than revolutionary change in the geopolitical landscape.
- **Pax Americana:** A state of relative international peace regarded as overseen by the US; currently under strain in West Asia due to shifting alliances.

### Additional Strategic Keypoints

- **The Iran Factor:** Despite the current tilt toward the GCC and Israel, Iran remains a critical partner for India for energy security, market access, and as a strategic counterweight bordering Afghanistan and Pakistan.
- **The Saudi-UAE Rift:** India must navigate the growing divergence between major Gulf powers to ensure bilateral CEPAs (Comprehensive Economic Partnership Agreements) remain effective.
- **Shift in Security Compacts:** The "Oil-for-Security" deal between the US and Arab regimes is fraying, opening a window for India to offer defense partnerships based on mutual stability rather than interventionism.

### Conclusion

**India's West Asia "reset" is a pragmatic response to tectonic geopolitical shifts. While the policy has faced domestic criticism for perceived untimeliness or lack of traditional "balance," it reflects a mature realism centered on national interest. To remain effective, India must maintain the agility to recalibrate—ensuring that while it builds deep ties with Israel and the GCC, it does not permanently alienate Iran or abandon its humanitarian role in the region.**

### UPSC Relevance

- **GS Paper II:** India and its neighborhood-relations; Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests; Effect of policies and politics of developed and developing countries on India's interests.
- **GS Paper III:** Energy Security; Security challenges and their management in border areas (Strait of Hormuz/Maritime security).
- **Prelims:** GCC member states, Map-based questions on West Asia, CEPA details, and Article 51 of the Constitution.

## 11. The Union Budget 2026 Carbon Credit Outlay: Deciphering Smokestack vs. Soil

### Key Summary Points

- **Massive Budgetary Allocation:** The Union Budget 2026 has earmarked a significant ₹20,000 crore over five years for a carbon credit programme, representing one of India's largest financial commitments to decarbonization.
- **Industrial Focus (CCUS):** Official documents, specifically the DST's "R&D Roadmap for CCUS" (December 2025), confirm the funds are primarily for Carbon Capture, Utilization, and Storage (CCUS) in "hard-to-abate" sectors like steel, cement, oil refineries, and chemicals.



- **Agriculture Exclusion from CCUS:** While media narratives suggested a new income stream for farmers, the technical roadmap excludes agriculture from this specific outlay because farming emissions (methane/nitrous oxide) are diffuse and not suitable for point-source capture technology.
- **Conceptual Conflation:** Public confusion stems from conflating the government-funded industrial CCUS programme with the separate, evolving Voluntary Carbon Market (VCM) where nature-based solutions like agroforestry and soil sequestration operate.
- **Strategic Demarcation:** The policy highlights a "Smokestack vs. Soil" divide; CCUS focuses on preventing new industrial emissions, whereas Carbon Dioxide Removal (CDR) through agriculture aims at drawing down existing atmospheric  $\text{CO}_2$ .
- **Communication Gap:** Analysts note that while the ₹20,000 crore is industrial, the high public expectation for "carbon farming" indicates a massive policy opportunity for a separate domestic agricultural carbon market.



### Constitutional & Legal Provisions

- **Article 266:** The allocation of ₹20,000 crore must be authorized through an Appropriation Act, as it involves expenditure from the Consolidated Fund of India.
- **Article 51A(g):** The Fundamental Duty to protect and improve the natural environment provides the ethical basis for such large-scale climate spending.
- **Energy Conservation (Amendment) Act, 2022:** This Act provides the legal mandate for the Central Government to specify a "Carbon Credit Trading Scheme," serving as the umbrella framework for both industrial and (potentially) agricultural credits.
- **Environment (Protection) Act, 1986:** Gives the Union government power to coordinate actions of State governments and lay down standards for emission or discharge of environmental pollutants.

### Key Definitions

- **CCUS (Carbon Capture, Utilization, and Storage):** A technology that captures  $\text{CO}_2$  emissions from industrial sources, then either uses it for manufacturing (e.g., in concrete) or injects it deep underground for permanent storage.
- **Hard-to-Abate Sectors:** Industries where reducing carbon emissions is extremely difficult or expensive due to high-heat requirements or chemical process emissions that cannot be solved by switching to electricity alone.
- **Point-Source Capture:** The process of capturing  $\text{CO}_2$  at the exact location where it is produced (e.g., a factory chimney), as opposed to "Direct Air Capture."
- **Carbon Farming:** A business model that rewards farmers for implementing practices that increase carbon sequestration in soil or vegetation, thereby creating tradable carbon offsets.

### Additional Strategic Keypoints

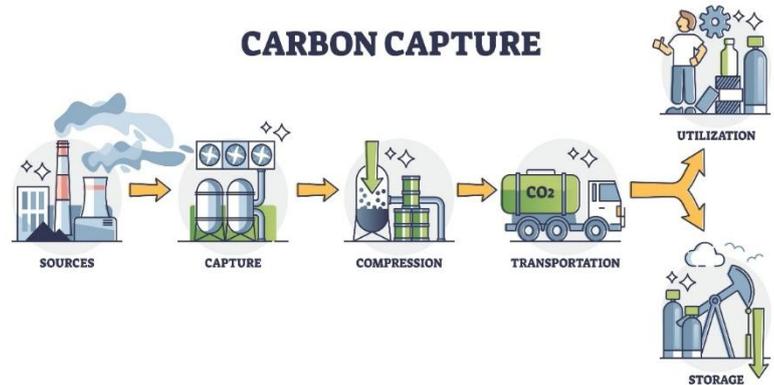
- **Net-Zero Alignment:** Industrial decarbonization is vital as these sectors contribute nearly 25% of India's total emissions; the CCUS outlay is a non-negotiable pillar for the 2070 Net-Zero target.



- **Voluntary Carbon Market (VCM):** While the Budget focuses on regulated industrial credits, private and state-level pilots are already testing "Soil Organic Carbon" (SOC) models for farmers, showing a parallel market is viable.
- **R&D Roadmap:** The DST roadmap serves as the technical anchor, focusing on the technological maturity and scalability of capture solvents and storage safety.

## Conclusion

The ₹20,000 crore bet in Budget 2026 is firmly a "Smokestack" initiative aimed at industrial survival in a low-carbon global economy. However, the "Soil" narrative—the desire to turn farms into carbon sinks—reflects a powerful economic aspiration. For India to achieve comprehensive climate resilience, the government must move toward a multi-sectoral approach that maintains the industrial CCUS momentum while launching a distinct, dedicated policy framework for agricultural carbon credits.



## UPSC Relevance

- **GS Paper III:** Economics (Budgeting and Resource Mobilization); Science & Technology (CCUS and R&D Roadmaps); Environment (Climate Change, Carbon Credits, and Net-Zero targets); Agriculture (Carbon farming and sustainable income).
- **GS Paper II:** Government Policies and Interventions for development in various sectors.
- **Prelims:** Definitions of CCUS, Carbon sequestration, the role of the DST in climate tech, and provisions of the Energy Conservation (Amendment) Act.

## 12. Tamil Nadu's Science & Technology Landscape: The Shift Toward Green Tech

### Key Summary Points

- **Strategic Climate Integration:** Tamil Nadu has moved toward a "Climate-in-all" policy, launching specialized missions such as the TN Climate Change Mission (₹500 crore) and the Wetlands Mission (₹150 crore) to restore 100 ecologically sensitive water bodies.
- **Green Financing Growth:** The state established the TN Green Climate Fund with a ₹1,000 crore corpus to finance renewable energy, electric mobility, and circular economy projects, aligning with its 2030 \$1-trillion economy goal.
- **Research vs. Application Gap:** While revenue spending on Science & Technology (S&T) has surged eightfold since 2021, most R&D expenditure remains concentrated in "applied research" (agriculture, veterinary, and health) rather than fundamental basic science.
- **Infrastructure vs. Intellectual Property:** The state risks becoming a "consumer" of green tech rather than a "creator." For example, despite leading in solar installations, over 80% of PV modules are imported or sourced from other states due to a lack of domestic IP.



- **Funding Benchmarks:** Tamil Nadu's total R&D expenditure is under 0.5% of its GSDP. By contrast, when South Korea had a similar GDP per capita, it allocated 1.2% to R&D, suggesting the state needs to more than double its current investment to foster a world-class innovation ecosystem.
- **New Research Hubs:** To bridge the basic science gap, the 2025-26 Budget allocated ₹100 crore for new basic science research centers in Chennai and Coimbatore, moving beyond the traditionally modest grant programs.

### Constitutional & Legal Provisions

- **Article 51A(h):** Part of the Fundamental Duties, it mandates every citizen (and by extension, the state's direction) to develop the scientific temper, humanism, and the spirit of inquiry and reform.
- **Seventh Schedule (List III - Concurrent List):** Entry 25 deals with "Education, including technical education, medical education and universities," providing the state government the power to legislate and fund research institutions.
- **Entry 66 (List I - Union List):** Coordination and determination of standards in institutions for higher education or research and scientific and technical institutions stay with the Union, explaining why premier bodies like IIT-Madras are centrally funded.
- **TN State Council for Science and Technology (TNSCST):** The nodal legal and administrative agency for promoting science at the grassroots level in the state.



### Key Definitions

- **Basic Science (Fundamental Research):** Research aimed at improving scientific theories for better understanding and prediction of natural or other phenomena, without immediate commercial or "applied" goals.
- **Applied Research:** Scientific study and research that seeks to solve practical problems; used to develop technology or techniques.
- **GSDP (Gross State Domestic Product):** The sum total of value added by all resident producer units within the state boundaries during a specific period.
- **Circular Economy:** A model of production and consumption that involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible.

### Additional Strategic Keypoints

The state's energy department received a massive ₹21,178 crore in 2025-26, highlighting a heavy tilt toward "hardware" and infrastructure (pumped-storage, batteries) over "software" (the underlying research and patents). This imbalance can lead to a "technology trap" where the state remains dependent on external patents for its green transition. Strategic focus on the "Blue Economy" via the SHORE scheme further highlights the state's intent to utilize its 1,076 km coastline for sustainable growth.

### Conclusion

Tamil Nadu is at a critical juncture where its industrial prowess must be matched by homegrown scientific breakthroughs. While the surge in climate-related funding is commendable, a transition from a "technology consumer" to a "technology leader" requires a significant hike in basic science



**funding. Transitioning R&D from 0.5% to over 1% of GSDP will be the deciding factor in whether the state creates the intellectual property required for the next generation of green tech.**

#### UPSC Relevance

- **GS Paper II:** Issues relating to development and management of Social Sector/Services relating to Education and Human Resources.
- **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:** Conservation, environmental pollution and degradation, environmental impact assessment.
- **Prelims:** TN Climate Change Mission (First in India), Nilgiri Tahr Project, and GSDP to R&D ratios of various states.

### 13. BRICS Science, Technology, and Innovation (STI) Cooperation: Strategic Evolution

#### Key Summary Points

- **STI as a Strategic Pillar:** Formally recognized in 2011 and codified in a 2015 MoU, Science, Technology, and Innovation has evolved into a core pillar of BRICS, moving from basic research toward innovation-driven and technology-transfer ecosystems.
- **Shift to Social Relevance:** Joint research priorities have transitioned from fundamental sciences to socially relevant domains such as public health (vaccine research/biosecurity), energy, water, and climate tech, accelerated by the COVID-19 pandemic.
- **Leadership in Emerging Tech:** The "2025 Declaration on AI" elevated Artificial Intelligence to a central pillar of multilateral governance, focusing on equitable and development-oriented AI frameworks to challenge Western technological hegemony.
- **Institutional Framework:** Cooperation is managed through annual ministerial meetings and lead agencies (such as CSIR and DBT in India), supported by initiatives like the BRICS Technology Transfer Centre (TTC) and the BRICS Institute of Future Networks.
- **Expansion to BRICS+:** The inclusion of new members (Saudi Arabia, UAE, Egypt, Ethiopia, Iran, etc.) has diversified the grouping's scientific capacity but introduced challenges in reconciling heterogeneous economic and technical interests.
- **India's 2026 Presidency:** Under the theme "Building for Resilience, Innovation, Cooperation and Sustainability," India aims to address the digital divide and scale projects in biotechnology and industrial innovation.



#### Constitutional & Legal Provisions

- **Article 51 (DPSP):** Directs the State to promote international peace and security and maintain just and honorable relations between nations, providing the constitutional basis for BRICS engagement.



- **Entry 10 & 13 (Union List):** Grants the Parliament exclusive power over "Foreign Affairs" and "Participation in international conferences, associations and other bodies and implementing of decisions made thereat."
- **Intergovernmental Agreement on Space Cooperation (2021):** A specific legal framework within BRICS for the exchange of remote sensing satellite data and joint space applications.
- **2015 MoU on STI:** The primary administrative legal instrument that institutionalized scientific cooperation among the member nations.

### Key Definitions

- **Techno-nationalism:** The linking of technological innovation and capabilities directly to a nation's national security, economic prosperity, and social stability.
- **GERD (Gross Domestic Expenditure on R&D):** A key indicator of a country's innovative capacity, measuring total spending on research and development performed within the national territory.
- **New Quality Productive Forces:** A concept (promoted via the China-BRICS Research Centre) focusing on innovation-led growth that breaks away from traditional economic growth modes.
- **Multipolarity:** A distribution of power in which more than two nation-states have nearly equal amounts of military, cultural, and economic influence.

### Additional Strategic Observations

Despite significant progress, BRICS STI cooperation faces "structural bottlenecks." The lack of a permanent Secretariat leads to a loss of institutional memory as the leadership rotates annually. Furthermore, funding remains modest compared to Western frameworks like the EU's Horizon Program. There is an urgent need for "Mega-science Projects" involving heavy infrastructure to transition BRICS from a networking platform to a tangible scientific powerhouse.

### Conclusion

BRICS has successfully moved beyond being a mere economic talk-shop to a collaborative scientific force. However, to remain credible, the grouping must bridge the "Innovation Gap" between China and other members and establish a permanent administrative mechanism. India's 2026 presidency offers a window to transform this "ad-hoc" cooperation into a structured, agile, and data-driven scientific alliance that can effectively address Global South challenges.

### UPSC Relevance

- **GS Paper II:** Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests (BRICS/BRICS+ evolution).
- **GS Paper III:** Science and Technology—developments and their applications; indigenization of technology; issues relating to intellectual property rights and AI governance.
- **Prelims:** BRICS member countries, New Development Bank (NDB), iBRICS, and specific declarations like the 2025 AI Declaration.